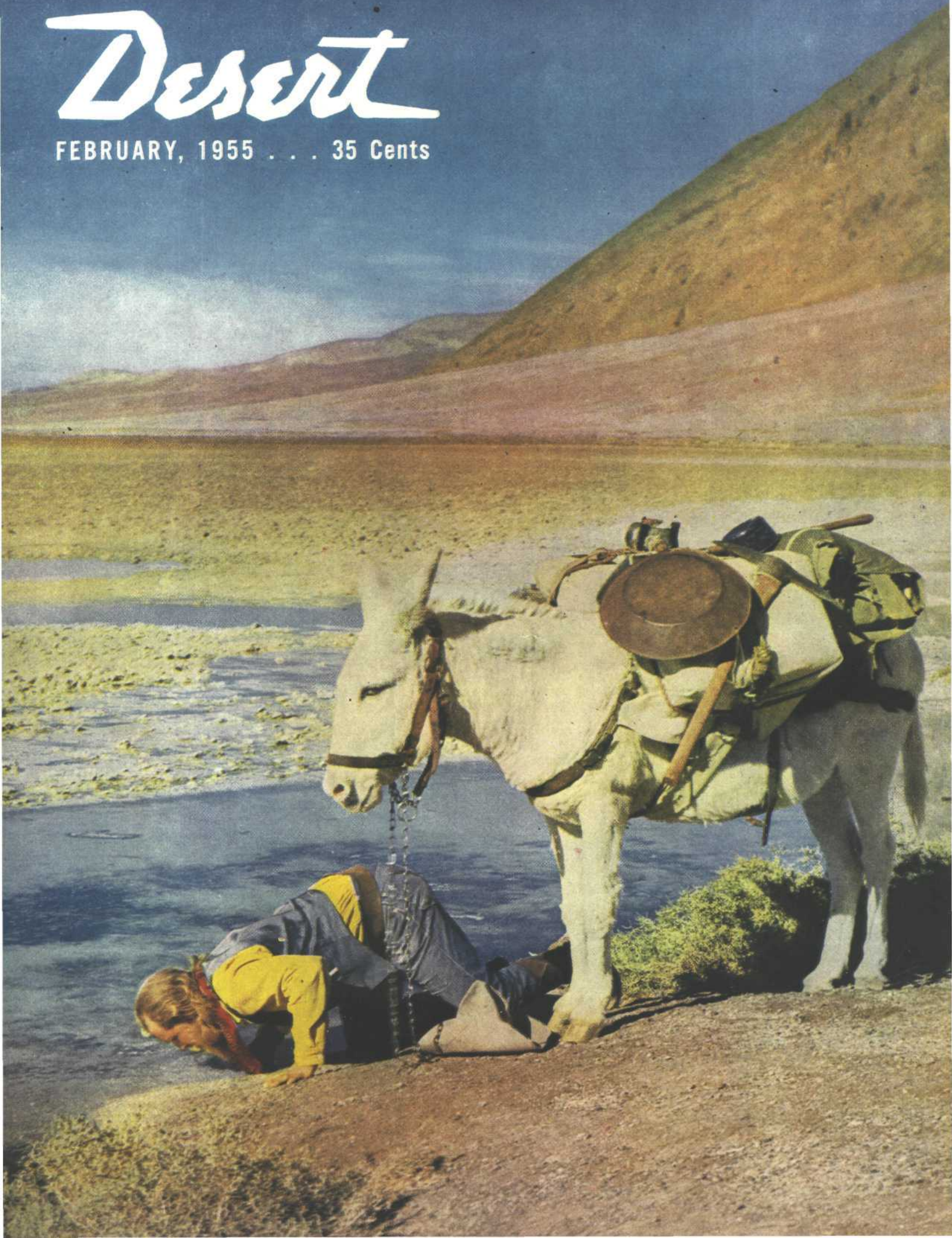


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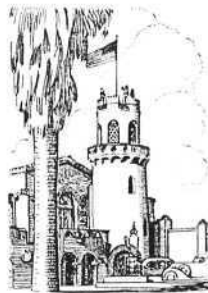
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February 5-6—Sierra Club Camping Trip into Cathedral Canyon, Araby Trail, Cathedral City, California.

February 6—Don's Club Trip to Jerome and Montezuma Castle, Phoenix, Arizona.

February 7-13 — Southwestern Livestock Show and Rodeo, El Paso, Texas.

February 12 — Palm Springs Desert Museum Field Trip to Wildcat Canyon, near Palm Desert, California.

February 12 — Dedication of Salton Sea California State Park; all day picnic with program.

February 12-13—Jaycee Silver Spur Rodeo, Yuma, California.

February 17-22 — Riverside County Fair and National Date Festival, Indio, California.

February 19 — Palm Springs Desert Museum Field Trip to Murray Canyon, tributary of Palm Canyon, California.

February 19-20—Wickenburg Horse Show, Arizona.

February 19-27 — Maricopa County Fair, Mesa Civic Center, Mesa, Arizona.

February 20-March 6—Southwest Indian Arts and Crafts, Fine Arts Gallery, Tucson, Arizona.

February 24-27 — Fiesta de Los Vaqueros, Tucson, Arizona.

February 26-27—Sierra Club Camping Trip, Thousand Palms, Pushawalla Canyon, California.

February 26 — Palm Springs Desert Museum, California, Field Trip.

February 27 — Don's Club Annual Trek for Lost Gold in Superstition Mountains, from Phoenix, Arizona.



Volume 18

FEBRUARY, 1955

Number 2

COVER

The desert is a thirsty place. Badwater Bill pauses at a waterhole, Death Valley, California. Photo by JOSEF MUENCH of Santa Barbara, California.

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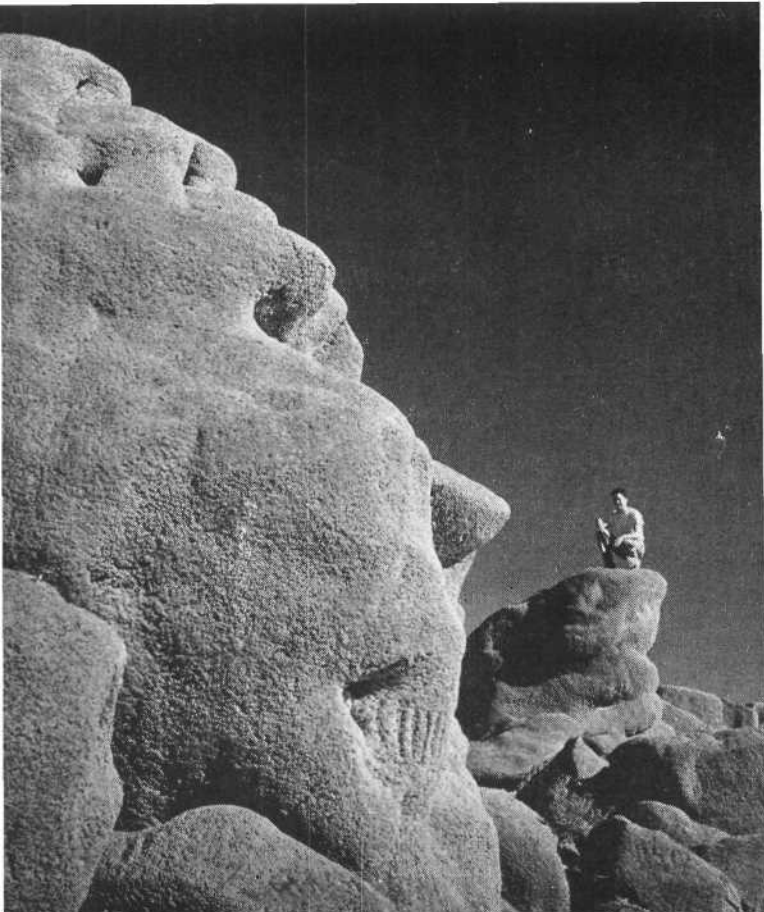
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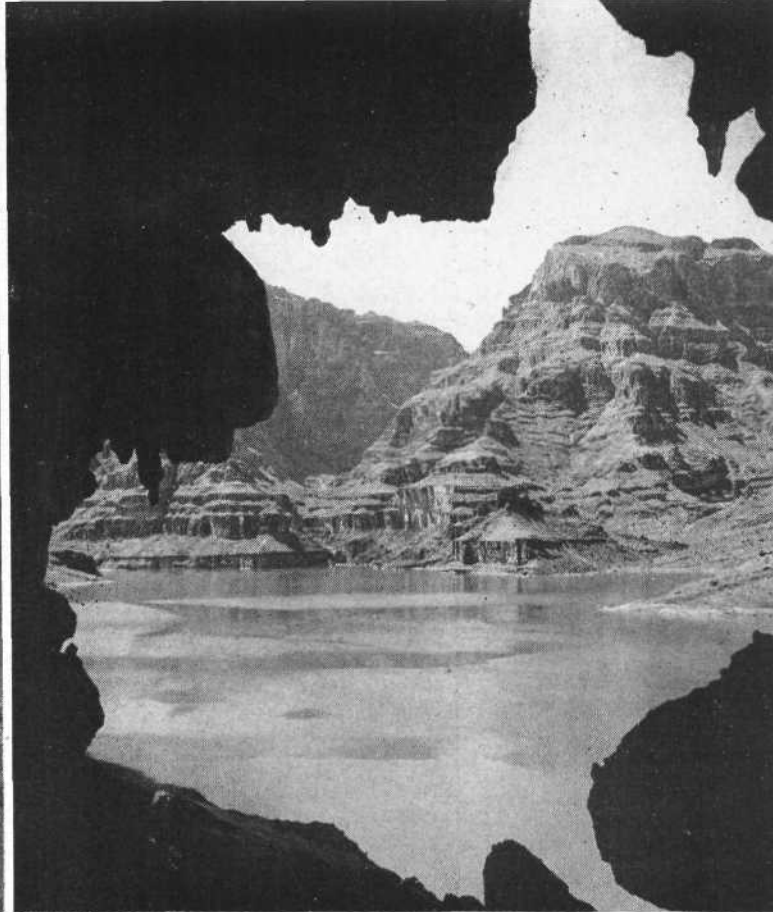
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At Travertine Point near the Salton Sea the ancient waters of Lake Cahuilla encrusted the once submerged rocks with these deposits. In this area the prehistoric shore line is clearly visible for several miles. This inundation may have occurred within the last 1000 years.



Library of the Ages. The lower Grand Canyon of the Colorado—5000 feet of rock strata whose giant pages of stone lying one upon the other tell a fascinating story of a changing world. View is from ancient travertine cave across Lake Mead toward Emery Falls.

Tomorrow's Desert...

By HULBERT BURROUGHS
Photographs by the author

WE WERE industriously engaged one afternoon collecting fossil oyster shells in the Yuha Basin near El Centro, California. I was convinced that we had found the famous old Yuha Reef about which many a geologist had written—a remarkable bed of *Ostrea Heermanni* which had lain practically undisturbed for some 17,000,000 years since the living organisms thrived in a once shallow sea. Time and again we picked up fossil specimens with both halves of the bivalves still in place.

17,000,000 years! It was difficult to comprehend such staggering lapses of time, and as we marveled our thoughts inevitably turned to the speculative. Here was incontrovertible evidence that the desert we now know was once a very different place. During Pliocene times—and probably several times before and since then—it had been covered by the sea. We remembered, too, the coral reefs not far to the west in Carrizo Creek. To the north in the Borrego Badlands another

We live on an ever-changing earth. Over a period of millions of years every part of the earth's surface has undergone radical alterations—in temperatures, in rainfall and in general topography. The deserts will not always remain as they are now. No human being can foretell just what changes will take place—but here is a summary of what some of the scientists are thinking, in terms of the distant future.

fantastic story of the past had been dug from the red and brown clays—skeletons of mastodons, camels, ancient horses, bison—animals of a long-dead age that once roamed these plains and hills. Again the nature of those animals was prima facie evidence that the desert then was not what it is today. It must have supported a far richer flora to have nourished that vast herbivorous assemblage.

A few miles northeast of Borrego Valley lies another silent and remarkable imprint of the changing world of yesterday—an old shoreline clearly de-

fined along the cliffs high above the present level of the Salton Sea. Soon our memories were groping for other evidence of a past far different from our own familiar desert. Someone suggested ancient Lake Mojave. That certainly meant an era when water was more plentiful. What of the once great Pyramid Lake in Nevada? And Utah's famous Great Salt Lake? That was once a very much larger lake than it is today.

What of the very rocks of the desert itself? No more vivid story exists in the world today than the awe-inspiring history of the ages written in the giant pages of stone lying one upon the other in the Grand Canyon. And there are many others like them—indisputable facts, imprinted upon the ageless rocks, of a changing world that throbbed and teemed with life long before man appeared upon the scene.

From these thoughts and speculations of what the desert had been in past ages, our minds inevitably turned to the prospects for the years and countless ages to come. What of the desert's future? Would that familiar landscape remain as it is until the end



Where hardly a tree stands today, this fallen forest giant, now petrified, tells of a long-gone day when a vastly wetter climate and a more abundant flora existed in Nevada's arid Valley of Fire.

of time? Or would it, as it has done continuously in the past, see many more changes? Some might say that the desert has already changed in the past 20 years. They point to the effects of irrigation upon the great Imperial Valley—not long ago as much a part of the desert as the sandiest waste. They will point to the All-American Canal and to Hoover Dam and Lake Mead. These, they say, are great changes for the desert. Great changes perhaps for the very isolated locale in which they exist, but upon the vast expanse of the entire desert they are but drops of a fleeting winter rain—swallowed up in the thirsty sands.

Some have gone to considerable length to expound the theory that Lake Mead, 115 miles long and the greatest artificial lake in the world, is bound to alter greatly the climate of the desert. Soon, they predict, lush vegetation will spring up because of the humidifying effect of Lake Mead's evaporation upon the desert air. I have talked personally to men of the National Park Service who are keeping meteorological records at Lake Mead. Some of their instruments may be seen floating on a great raft not far from Pierce Ferry. At only a few inches above the surface of the lake the humidity is practically as nil as it is over the rest of the broad desert. As one of the rangers told me—"Lake Mead has about as much effect on the surrounding desert climate as a pitcher

of water on the speaker's stand at a national convention."

For the future of the desert we must look not so much to man-made influences as to great natural forces far beyond our power to control. We must take the long-run view. And in doing this we must put from our minds the possibility of any great changes within our lifetime or the lifetimes of our children's children's children. If any change is to come it will come slowly as the result of vast natural forces acting over a period of thousands of years, perhaps millions. True, there may be occasional slight variations in climate when the rainfall for a few years will be either far above normal or far below—like the great drouth in the years 1275-1299 A.D. that so affected Indian life in the American Southwest. But these variations are to be expected because added together they are what make, in the long run, for the average or normal conditions.

The great forces of Nature are even now at work changing our world. They are forces that are so infinitesimally slow in progress that we are scarcely conscious of their action. For instance, geologists are fairly certain that the Pacific Coast in general is rising. It is also known that the Atlantic Coast is sinking. At certain points in California there are very ancient wave-cut beaches high above the present sea level. The hills above San Pedro are good examples. Soundings at the mouth of

the Hudson River show the ancient channel gorge to extend several miles out beyond New York Harbor. Mountains are being eroded away. Sea bottoms are accumulating vast deposits of sediment. Earthquakes, a more spectacular demonstration, are a sign of the shifting ever-moving earth-crust. All these processes are relentlessly at work—today, now.

It is difficult, however, adequately to measure or evaluate the snail-like progress of all these present vast forces. Perhaps a clearer and more prophetic picture of a possible future is revealed in the fantastic story of the earth's great geological past. It is a story of vast changes occurring over inconceivably long periods of time. Of a once molten earth gradually cooling; of a surface crust that began to shrink and caused mountains to rise like the wrinkles on a dried prune. Large areas of land became submerged. Huge deposits of sediment collected at the bottoms of the resultant shallow seas. Later those same land areas rose again from the sea and with them came the sedimentary deposits that we now recognize in the vast strata of the Grand Canyon. There were long eras of local aridity when various parts of our country were desert lands—when wind and ocean currents must have followed different paths from those today. Far back in Silurian times New York and Ontario were part of a desert. Again, in the Devonian period there was wide



Death Trap of the Ages. Bubbles of gas still rise from the sticky pools of the La Brea Asphalt pits as they did 100,000 years ago when many great mammals of the Pleistocene became mired in their depths.

spread aridity in New York and Pennsylvania, Quebec and Scotland. Still later, in the Permian Period, Kansas, Oklahoma, Texas, and New Mexico were a desert. In the Connecticut Valley there are evidences of desert deposits over 10,000 feet thick. New Jersey has rocks of the same age—Triassic — which are thought to be over 20,000 feet in thickness.

In addition to these enormous forces resulting in mountain building, erosion, and land submergence, there were periodic ice ages when large areas of the earth were covered by huge ice sheets many thousands of feet thick. During Permo-Carboniferous times the most extensive glaciation of probably all time covered tremendous expanses of every continent but Europe and North America. Of all periods of glaciation, however, the one most affecting us occurred during the Great Ice Age of the Pleistocene starting about a million years ago and lasting—except for three warmer interglacial periods — until only about 25,000 years ago when the ice began its final retreat. During this remarkable era the vast ice cap in North America covered all of Canada and extended as far south as Kansas City and St. Louis. In Europe all of Scandinavia was ice covered and the white mantle reached down into North Germany (as of 1938) and Western Russia. Except for the south-

ern edge of England, the British Isles were entirely covered.

Of important significance was the thickness of this gigantic ice field. The Canadian pack, which reached down into the U.S., is estimated to have attained a maximum thickness of 10,000 feet—practically two miles of solid ice! This meant that an enormous amount of water was taken from the oceans in the form of water vapor and added to the ice pack in the form of snow and ice. With all this frozen water piled high upon the lands the level of the oceans was lowered by some 200 feet. This naturally made dry land bridges of large areas of shallow seas and enabled all sorts of land animals to pass back and forth from one continent to the other. The woolly mammoth and his contemporaries crossed the then dry Bering Sea between Siberia and Alaska. England was part of the continent of Europe.

Climatic conditions must have been severe in our country. The High Sierra for instance were crowned with large glaciers. Yosemite received its artistic sculpturing by glaciers during the Pleistocene. Our great Southwest saw none of the aridity it knows today. Utah's Great Salt Lake is only the shriveled remnant of huge Lake Bonneville which during the Great Ice Age was nearly ten times its present size. The old shoreline of that lake is still visible a thousand feet higher up the

mountains. There were no deserts in the United States in those years and great mammals roamed throughout the land south of the ice packs.

Remembering that these were all natural phenomena that took place in the past, we justifiably wonder what the prospects are of any of them recurring in the future. What caused the Great Ice Age? Are those same causes likely to occur again? No one knows for sure what caused the ice ages of the past. There are many theories and here are some of them: Some scientists attribute the marked climatic change to variations of direction in the polar axis of the earth. There are said to be definite indications that the earth's poles are slowly shifting even now. Some claim that our sun is a variable star and is subject to marked changes in the amount of heat it gives out. Sunspot activity we know influences our climate to a certain extent—how we do not yet know. Other scientists point to changes in ocean and wind currents, even to a variation of the temperature of space through which our earth is travelling. Some say that ice ages result when plant growths use up a substantial amount of the carbon dioxide in the atmosphere.

One interesting theory to explain the fall in temperature that caused an ice age holds that the marked activity of explosive volcanoes during the Pleisto-

cene filled the upper atmosphere with great clouds of fine volcanic dust which effectively blanketed the earth from its normal quota of the sun's heat. Partially supporting this theory is the acknowledged fact that there was extensive vulcanism during the Pleistocene. The terrific Krakatoa eruption of 1883 gives us a fair idea of what may have happened on a large scale during the Pleistocene. When this famous volcano blew its top in what was probably the greatest explosion in the history of man, volcanic dust shot into the upper atmosphere and was eventually scattered over the entire globe. The sound was heard more than 2000 miles away. For three years afterwards the dust in the upper atmosphere caused strange and beautiful sunsets. An atmospheric pressure wave circled the earth three and a half times. A fifty foot tidal wave killed more than 30,000 people and wiped out countless villages.

The assumption of those who support this theory is that if one volcano could do all this, many volcanoes acting during the Pleistocene may have sent forth enough dust to have effectively screened out much of the sun's heat.

Whatever the cause or causes of an ice age, our logical question is: Are they likely to occur again in the future? Scientists do not venture too far along the roads of prophecy. Yet consider this: During the Pleistocene there were four separate glacial periods interspersed by three very long interglacial or warmer periods during which time the ice greatly receded. We are only now in the process of thawing out of the last glacial period. The ice started to recede about 25,000 years ago. The 5,000,000 cubic miles of ice still piled up in Greenland and Antarctica indicate that we are not yet completely out of the ice age. Is it not possible then that after a long period of warmer climate another ice age will come? Some scientists think so.

Sir James Jeans, eminent British scientist, offers several other interesting prospects for the future. The sun's loss of weight due to dissipation of its energy, says Jeans, is allowing the earth to recede away from it at the rate of about three feet a century. Thus after a mere million million years the earth will be ten percent farther away from its source of heat and light. This will mean a 30 degree Centigrade drop in the earth's surface temperature. All of our oceans, lakes and rivers will freeze solid—the earth a vast frozen desert. Life, thinks Jeans, would probably be able to survive this ordeal but it would not be easy.

Jeans says there are accidents, however, that might occur to the earth in

far less time than a million million years. Our sun might suddenly shrink to a dwarf star—a phenomenon which astronomers have seen happen many times to other suns. This abrupt lessening of heat and light would seal the doom of all life on earth. Oceans would freeze and the atmosphere would become liquid air.

Another of Sir Jeans' optimistic possibilities is that our sun will suddenly flare up into a nova. Astronomers have seen these novae blossom quite often. They are ordinary stars which for no apparent reason suddenly flare up into tremendous intensity, burn brightly for a short time and then either fade away completely or return to their normal state. This is all very innocent except that in the process all life would be scorched from the face of the earth. Every star in our galactic system, thinks Jeans, is subject to becoming a playful nova at least once every 50,000 million years. The question we are interested in is: Does our sun face the danger of becoming a nova? Jeans thinks so — thinks the chances are that it will become a nova at least twenty times during the next million million years. I offer the humble suggestion, though, that in anticipating this cataclysmic but uncertain event there is little need to alter our plans for next week-end.

To return to subjects more within our grasp, geology tells us that by far

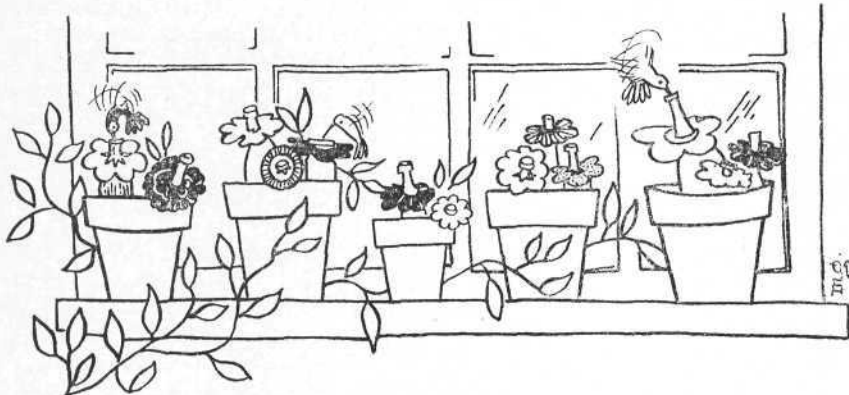
the longest periods of time have seen the earth basking in a warm and humid climate in which plant and animal life flourished from pole to pole. That condition is the normal over millions of years of the geological history of the earth—no extreme cold, plenty of rain, perfect environment for the growth and progress of life. The cold glacial periods, coming in irregular cycles, are the abnormal. Over long periods of time climate has swung pendulum-like from hot to cold. Every known geologic age shows signs of these alternating periods from normal to ice age. Although long in relation to man's reckoning of time, these cold spells are quite short in the history of an era.

Whatever the primary cause of glaciation it is a period of fairly sudden and profound change in which life is subjected to the most rigorous of tests. Only the hardiest and most adaptable can survive. Of the great Pleistocene mammal assemblage practically all have died off. The elephants, rhinoceroses, hippopotamuses, etc., of Africa and India are but a few scattered remnants. Man and his faithful satellite the dog seem to have been the most adaptable to the rigors of a changing world.

Because we are only just emerging from the last ice age our climate is still colder than normal. If we are entering one of the warm interglacial periods

The great American Lion (Felis atrox Leidy) was nearly a third larger than today's African counterpart. Why did this magnificent King of Beasts become extinct? What changes in southwest climate wiped him from the face of the Earth? Are those same changes and their motivating forces still going on today?





The Hummingbird Cafeteria

FOUR YEARS AGO, after a dry fall and winter and an almost rainless spring, Laura Riffey appointed herself a one-woman disaster corps for the birds and wildlife which visited the isolated Riffey ranch near Fredonia, Arizona. She scattered grain night and morning for Gambel quail, white-crowned sparrows and house finches, and water was always available for all wild visitors.

The second week of March, the black-chinned hummingbirds returned for their nesting season. It wasn't a very happy homecoming—there were no flowers and only occasional insects.

Providing emergency rations for the hungry hummingbirds proved a perplexing problem.

First Mrs. Riffey rigged small evaporated milk cans, lids half open, with colored bits of cloth, filled them with a weak honey-water solution and hung the improvised feeders in junipers and pinyons surrounding the house.

But, although they investigated thoroughly, the hummingbirds just didn't get the idea. The honey water was untouched, and the birds continued mealless.

A better advertising campaign was indicated, the Riffeys decided. A storage trunk yielded colorful artificial flowers, the medicine chest some small bottles. Along the wide window sills of the house, the bottles, bright paper flower pulled over each small neck, were "planted" in pebble-filled flower pots. Tipped at a slight angle, the glass vials allowed easy access to the sugar liquid within.

The row of rainbow-painted pots with their curious plantings attracted hummingbirds immediately, and within a few minutes the "Hummingbird Cafeteria" was doing a thriving business. Each year since, the birds have returned to renew their patronage during nesting time.

The Riffeys derive hours of enjoyment watching their tiny customers. At first they observe the courtship dives and swoops and the rivalries-for feeding vials. Then the young are born, and the parent birds begin the countless trips between window sill and nest, bringing sweet nourishment to their babies. It is not long before the little ones accompany Mom and Pop to the cafeteria, to perch on the flowers and dip long beaks into the sweet liquid within. Later, like their parents, they drink from mid-air.

The honey water attracted flies, moths and insects as well as birds, the Riffeys soon discovered. Every morning they had to fish out dead insects with a long nail. Then suddenly the bug problem was solved. A Scott's oriole which had watched the hummers at the cafeteria one morning decided to investigate the flowers himself. He discovered the combination and had a good sweetmeat breakfast. Soon he was bringing his wife to enjoy the sugar-preserved insects and, later, his young.

The bottles are kept filled with a light solution of honey or sugar and water—about 1½ tablespoons of sweet per cup of water. Too heavy a sugar concentration would present a sticky problem to birds preening their feathers after dining. The artificial flowers wore out that first season, and since then small pieces of bright colored oilcloth have been substituted, cut in petal-like shapes and pulled over the bottle necks. The Riffeys have noticed no color preference.

we may look to a more equable world climate in the centuries to come. If so, what will that mean for our deserts? More heat may mean more desolation—a broadening of the desert wastes—unless the changing climate brings with it more rain.

The late Professor Percival Lowell, famous for his study of the planet Mars, intimates that the earth is following along the evolutionary path of that dying world. He claims that our sister planet is much older and that its atmosphere is slowly dissipating, its water supply drying up, its surface eroded down to a nearly level plain. In short, it is a dying world fast becoming a desert waste. He predicts that will be our fate at some time in the far distant future—our world a vast waterless desert.

John Van Dyke, in his little book *The Desert*, says: "... Have we not proof in our own moon that worlds do die? ... And how came it to die? What was the element that failed—fire, water, or atmosphere? Perhaps it was water. Perhaps it died through thousands of years with the slow evaporation of moisture and the slow growth of the—desert. Is then this great expanse of sand and rock the beginning of the end? Is that the way our globe shall perish?"

Yet as we have seen earlier, there have been in past geological ages far greater deserts than exist today—and in areas that are now lush with vegetation. New York, New Jersey, Connecticut, Pennsylvania, Kansas—all were deserts at one time or another in the past. We have seen that our own Southwest once supported a formidable array of animals ranging from camels to mastodons. We know that these animals no longer exist there. We know that the sea came and receded several times in the past. There is thus no indisputable evidence of a definite trend for the future.

All we can truthfully say of the desert's future and the future of our world is that it is a dynamic ever-changing world. What the ages to come will hold, no living man can know.

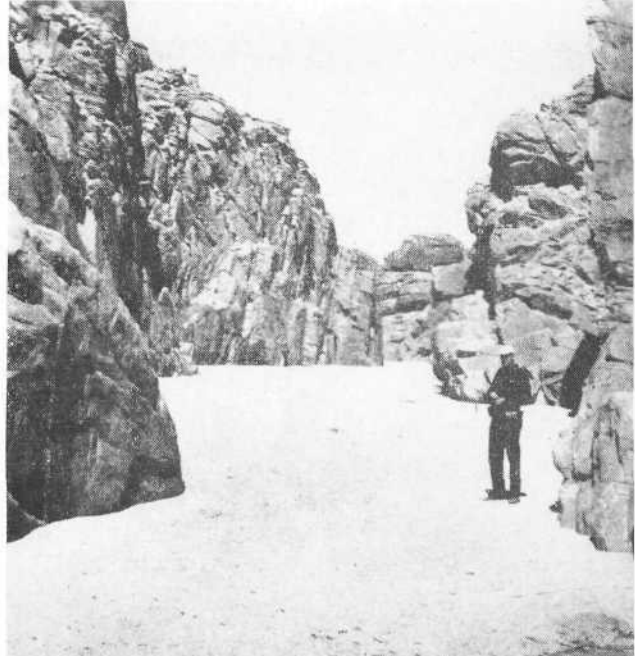
But of this at least we can be certain, it is a world charged with tremendous forces that are even now shaping the course of things to come. It is a world rich with infinite possibilities for man. Would that we of today might be here to see it unfold!

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- The Cause of an Ice Age*—Sir Robt. Ball
- Mars as the Abode of Life*—Percival Lowell
- The Desert*—John Van Dyke



It is estimated there are 2500 native palms along Palomar Canyon below the hot mineral spring described in this story.



Petroglyphs were found on these rocks near the canyon entrance.

Cattle Ranch Among the Palms

By RANDALL HENDERSON
Map by Norton Allen

IN FEBRUARY, 1947, following an exploring trip into Baja California, I wrote a story for *Desert Magazine* titled "Palms of Palomar." It was a beautiful canyon of native palm trees 80 miles south of Mexicali on the desert side of the Sierra Juarez, that mountain backbone which separates the coastal from the desert portions of the Lower California peninsula.

I thought it was a very good story—but recently I learned that I had made a serious error. I gave the canyon the wrong name. The story should have been titled "Palms of Santa Isabel." For actually I was in Santa Isabel Canyon, three miles south of Palomar.

There are no official maps showing all the topographic features of Baja California. When Arles Adams and Bill Sherrill and I go down there to hike into the canyons which border the Laguna Salada dry lake, we depend on the word of the Indians and Mexican vaqueros for our place name information. Somehow, we got crossed up on Palomar.

Recently, Arles Adams called my attention to the error. "When you have the time, we'll make another trip down there and get those place names untangled," he wrote me. "I've been talking with some of the Mexicans who run cattle in those desert canyons, and

while there is a Palomar Canyon, it is not the one we thought it was. The canyon you wrote about was Santa Isabel, and Palomar is the next main canyon north of it."

We arranged the trip for the weekend of March 13-14 last year. In addition to Arles and Bill, our two-jeep party included Jimmy Marshall, seed dealer, H. K. McCracken, school teacher, and Sterling Gowman, Jr., student, all of El Centro, California.

From the Mexicali port of entry we motored west on the recently paved highway that connects with Tijuana on the coast. Seventeen miles from our starting point, at the base of Mt. Signal, we left the pavement and turned south across the great smooth-surfaced playa marked on old maps as Laguna de Maquata, and more recently as Laguna Salada. This inland sea once had a greater surface area than Salton Sea, but was never as deep as Salton.

We were following a road used by Mexican woodcutters who make a meager living by bringing in ironwood, mesquite and palo verde for the fire places of Mexicali. Later we passed one of the wood crews cutting firewood in an arroyo. It requires two days for three men to cut and deliver a load of wood in Mexicali. For the load they receive 220 pesos, which at the present rate of exchange is the equivalent of \$17.60.

Continuing his exploration of the many desert palm canyons south of the border in Baja California, Randall Henderson this month writes of a remote cattle ranch where the mountain lions are so plentiful, armed cowmen have to guard their calves at night.

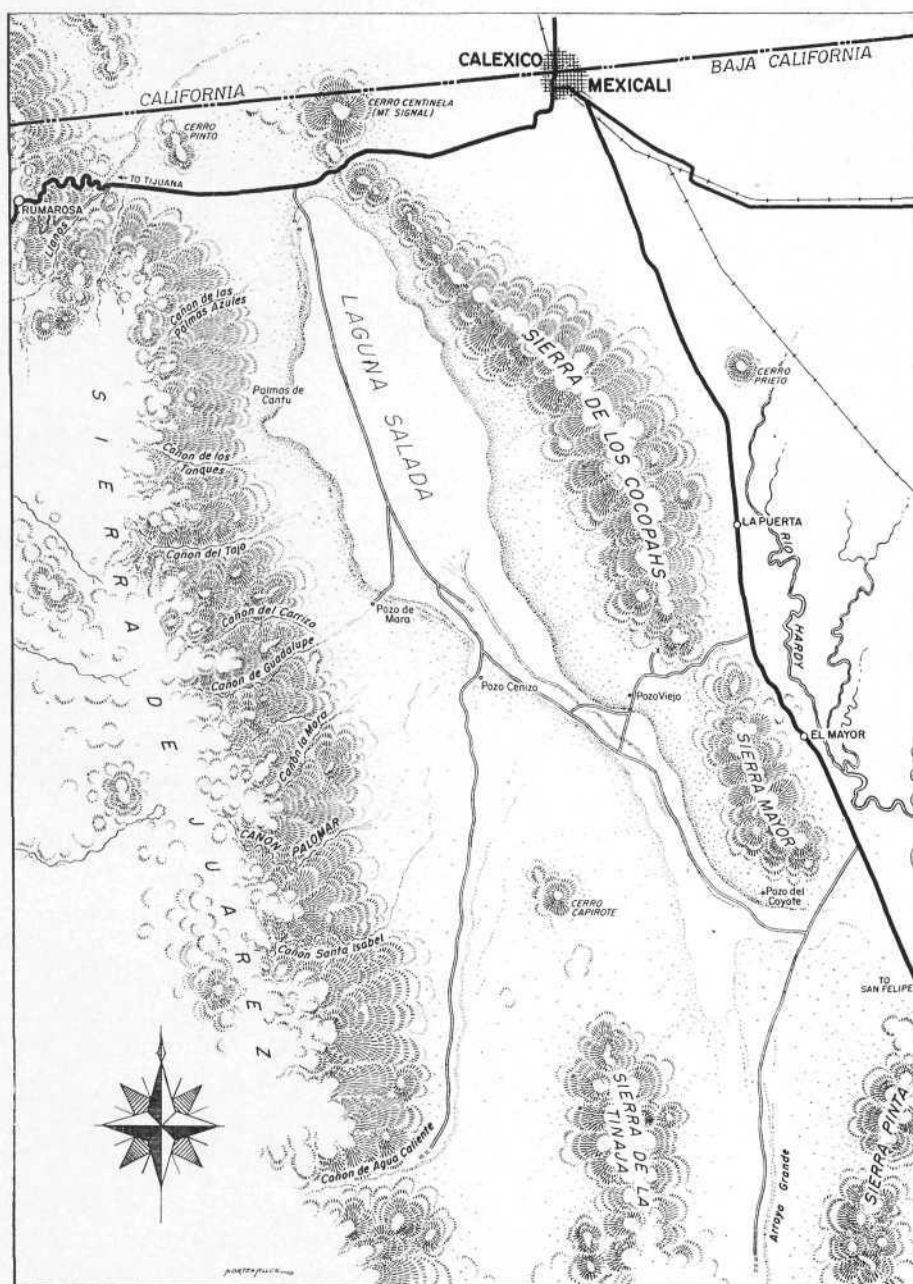
We left the dry lakebed at Pozo Cenizo where a cattle outfit once had its headquarters. The old cement watering troughs are still there, and 20 feet down in an open well is rather brackish water—but there is no way to get it out unless one carries his own rope and bucket.

From that point we followed a winding trail which leads eventually to the Pai-Pai Indian camp in Arroyo Agua Caliente (*Desert Magazine*, July '51). At 17½ miles from Pozo Cenizo a little-traveled trail leads off toward the rugged Sierra Juarez on the west, and this was the road which after 10½ more miles of sandy and rocky travel brought us to the end of our trail at the edge of Palomar Canyon.

Where our road ended we could look down on hundreds of native palm trees, extended along the bottom of the arroyo as far as we could see in both directions.

Actually we had passed near the mouth of the canyon some distance back, and for seven miles had been traveling across a mesa on a road that ran parallel to Palomar. We had stopped briefly and hiked to the canyon's entrance to hunt for some Indian petroglyphs we had been told were on the rocks there. We found glyphs, and also palms, although there was no surface water at that point.

We gathered firewood and made



camp beside the arroyo—in a natural garden of Sonoran desert vegetation—ironwood, palo verde, ocotillo, cats-claw, staghorn and bisnaga cactus, all plants found on the American side of the line. But there were two strangers here—senita or old man cactus, and elephant tree.

With camp established, we hiked a half mile upstream along the rocky floor of Palomar to the cow camp of Tomas Dowling, who has grazed cattle in this canyon for many years. Tom lives in a tent-like shelter made of palm fronds, his only companion being 78-year-old Manuel Leon, a gambucino (prospector) who has turned cowhand.

Until a year ago they had comfortable quarters in an ancient adobe

house near the little cluster of palms where their camp is located. But a 73-year-old cowhand died in the adobe, and like the Navajo Indians, Tomas and Manuel are a bit superstitious about such things, and now they sleep under the palm fronds and cook in the shade of a group of tall Washington palms.

They had been having trouble with mountain lions. To protect their chickens and pigs they have built stockades of palm trunks, and at night they round up the calves and keep watch over them with a gun.

Palomar Canyon has had no rain for many months and the forage is sparse. We saw evidence of this when we came upon some of the young steers eating palm fronds, chuparosa

and staghorn cactus. Livestock resort to such food only when no other vegetation is available.

Dowling told us that in a few days he would drive the herd up the 4000-foot trail to the top of the mountains near Laguna Hansen for summer forage. But while the cattle were on short rations, the pigs were fat. They eat roots and herbs, and when the dates are in fruit they feast on the sweet-skinned seeds.

My estimate is that there are over 2500 native palms along Palomar Canyon, about 10 percent of them the blue palm, *Erythea armata*, and the remainder *Washingtonia filifera*. The blue palms carried great clusters of green fruit, about the size of small marbles, when we were there.

Dowling has a well among the palm trees, and is trying to develop water to irrigate a little field of forage for his livestock. He was wrestling with a balky gas engine when we arrived at his camp. Arles, who is a genius with mechanical gadgets, took over the job and soon had the pump throwing a big stream of water.

With the exception of the gas engine and a truck for occasional trips to Mexicali, 74 miles away, for supplies, Dowling and Leon have only the most primitive tools for their cattle business. After the pump was started, Tomas walked to a nearby tree and began braiding a cowhide lariat with bobbins of thong he had cut and cured himself.

Manuel told us about a hot spring which bubbled out of the ground among the palm trees three miles up the canyon, and the next morning he guided us up there. The spring gushed 130-degree water out of a grassy park fringed with palms. If such a spring had been in the Santa Rosa or Catalina or Wasatch mountains, some one would have built a million dollar sanitarium around it long ago. We knew by the fumes it was mineral water, and no doubt it had medicinal value known to the Indians of long ago, for there were many grinding holes and metates in the boulders in that vicinity.

The palms in the canyon had all been burned at a recent date, and Manuel told us it was done by a Mexican boy who stayed at the camp six years ago. Apparently all the trees had survived the fire, and had started acquiring new skirts of dead fronds.

Following down the stream to the cow camp later, I discovered that Dowling had built an earthen dam and a two-mile ditch in an effort to bring irrigation water to his cabinsite for a garden. But with only hand tools for the construction it is very crude, and



A spring of 130-degree water gushes out of the ground in a natural park surrounded by palms.



With a stream fed by the hot mineral spring, Palomar Canyon is a series of lovely vistas.



Tom Dowling supplies his cowhands with rawhide riasas which he braids in his spare time.

the ditch delivers water only when the main stream is at a high level. It was because of the unreliability of this water supply that Dowling bought the gas engine which he was trying to start when we arrived in his camp.

Tom Dowling definitely confirmed the information that this was Palomar Canyon, and that the next canyon to the south, which I previously had

mapped as Palomar actually is Santa Isabel Canyon.

Both of them have live streams of water, and forests of palm trees. Laguna Hansen, on the plateau above is but 14 miles from Dowling's camp. Manuel told us of another canyon just a few miles to the north which also has many palms—Alamar Canyon, he named it.

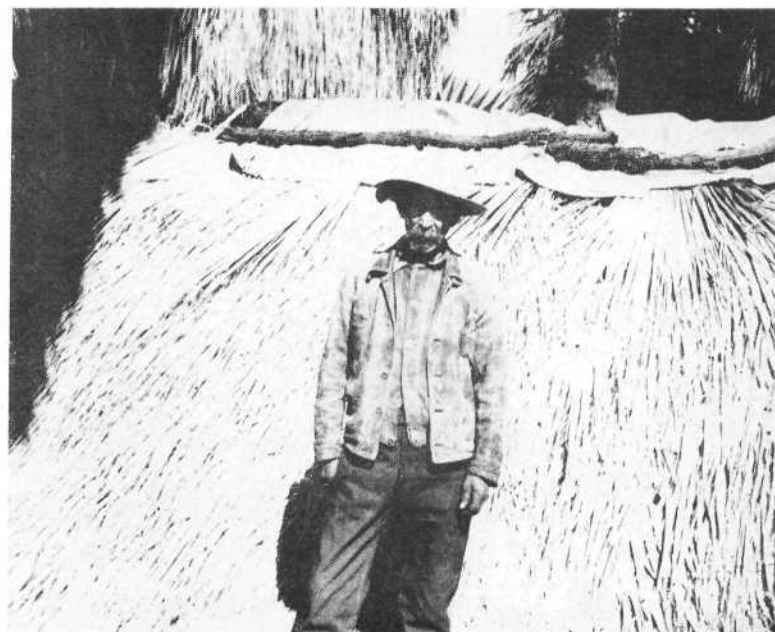
With more and more desert motorists acquiring 4-wheel drive cars, there

is increasing travel to the many lovely palm canyons which gash the desert slope of the Sierra Juarez range. No official maps are available showing all of these canyons, but as a result of many scores of exploring trips into that remote region, the map accompanying this story is offered as the most complete record yet compiled of this fascinating portion of Baja California.

The old adobe ranch house was abandoned after one of the cowhands died in it a few months ago.



Manuel Leon beside the palm-front tent which now serves as home for him and Tom Dowling.





Turkey Buzzards day-roosting on saguaro, Sonoran Desert, Mexico.

Scavengers of Sonora . . .

By EDMUND C. JAEGER, D.Sc.

Curator of Plants
Riverside Municipal Museum

Photo and sketch by the author

"DID YOU EVER see so many hawks, or are they young eagles, all sitting together?" exclaimed my traveling companion, Bill Wells of Riverside, California, as we sped northward along a road of the dry Sonoran Desert of Mexico's west coast. "Why, there's six of them sitting on the branches of one organ-pipe cactus! Never before have I seen hawks doing that."

"Those aren't hawks," I said, "although they may look like them to you. Those are extraordinarily clever but odd looking birds called caracaras, near relatives of hawks but more closely related to falcons. Sometimes in the United States they are erroneously called Mexican buzzards or Mexican eagles; buzzards because of their carrion feeding habits, eagles, because of their appearance in flight.

One of the birds was standing on the ground, and as the car came nearer, we could note the birds' distinctive color markings — black head-crown, whitish neck and breast, black to dark

One of the most common among birds seen by the traveler in Sonora is the Caracara—a distant relative of the North American Turkey Buzzard. In a land where there are few garbage collectors, these carrion birds serve a useful purpose and are protected by unwritten law. Naturalist Edmund Jaeger introduces another strange denizen of the desert.

brown back and belly and white dark-tipped tail. As we drew still nearer we could see the eagle-like beak and red face. They seemed quite undisturbed by our presence until we got out of the auto; then one after another they took wing, their long unfeathered legs extending downward at an angle of about 45 degrees from the horizontal. We noted, too, their peculiarly outstretched necks and the pale patches of color at their wing tips.

As we traveled northward the birds became more and more common until we were counting 12 to 15 to the mile. All were readily seen silhouetted against the sky, perched atop roadside organ-pipe or giant cacti. Occasionally we saw one perched bolt upright on

the topmost branches of an ironwood tree.

I would say that caracaras are the second most frequently seen of the larger birds of the region, the first being the almost eagle sized zapalotes or turkey buzzards. Caracaras are primarily carrion eaters, but also kill many small animals—skunks, rabbits, mice, fish, small birds — and more humble quarry such as beetles, cicadas and grasshoppers. Their long strong legs make them rapid runners and one sometimes sees them running down their prey. The birds frequent highways where they find wounded or dead animals which have been run down, especially at night, by speeding automobiles.

Their aggressiveness when in pursuit of food makes them the respected foe of even larger birds. I once had the exciting experience of seeing a Red-tailed Hawk swoop down and grasp a four-foot gopher snake in its talons. No sooner had it taken wing than three caracaras boldly gave chase, attacking the hawk in mid-air by plunging down upon it from above. This they kept up for some minutes until they forced the hawk to relinquish hold upon its reptile prize. As the snake dropped

all three caracaras dashed for it. An aerial quarrel followed as each for a moment grasped the snake only to surrender it to another. Finally one of the caracaras, bolder and more adept in flight than the others, got hold of the squirming reptile and made off with it.

This bird of the open country is an unusually quiet one, but if it is wounded or excited it stretches its neck, throws its head back until the black crown almost rests on the shoulders and gives a strange and prolonged raucous cry. This same peculiar call, somewhat varied, may sometimes be heard early in the morning or just after sundown. The name caracara, given by Brazilians to one of its near relations, is supposed to be an imitation of this loud harsh call.

Caracaras are said to mate for life. Families often live and hunt together until the young reach near-adulthood. Each pair has its separate nesting and roosting place; these they occupy year after year. All the nests I have seen have been built in large mesquite or ironwood trees. They were large bulky structures with a slight central depression, made of small tree branches and lined with sticks, grass and roots.

The caracara of the west coast desert of Mexico is Audubon's caracara, *Polyborus cheriway auduboni*. It occasionally comes into our deserts of southern Arizona, southwestern New Mexico and Texas along the Mexican border. Strangely enough, this unusual looking desert bird is found also in parts of Florida, Cuba, Guiana and Ecuador in an environment as undesert-like as one could imagine.

The carancha, so well and delightfully described by W. H. Hudson in his *Birds of LaPlata* is another species of caracara, *Polyborus tharus*, living on the vast grassy plains of Argentina. Formerly another species, *Polyborus lutosus*, inhabited Guadalupe Island, 175 miles off the west coast of Lower California. Its disappearance is a tragic story that illustrates the folly and damage which may be done when man interferes with the native fauna and flora by over-hunting and the introduction of domestic animals.

When Dr. Edward Palmer visited Guadalupe Island in 1875, the *quelilis*, as the natives called the bird, was to be seen in great numbers in spite of a continual persecution waged against it with poison and guns.

Because of man's persecution, not only has Guadalupe's caracara disappeared, but due to his introduction of foreign animals the native vegetation of the once beautiful island has suffered immeasurably. Man brought in with him not only his goats but also cats. On boats visiting the island came the domestic mouse. The mice con-



Caracaras are easily recognized by their distinctive markings—black head crown, whitish neck and breast, black body and white-tipped tail. Its raucous call is given with head thrown far back.

sumed the seeds of many native plants bringing them almost if not completely to the point of extinction. The cats increased and, since they were always hungry and crafty hunters, they helped in the extermination of the small birds. The goats, ranging far and wide, all but destroyed the native shrubs and trees. Only on a few fog-drenched, isolated cliffs does the magnificent Guadalupe cypress yet maintain a stand.

The great food competitor of the Mexican caracaras are the zapolotes or turkey buzzards. However they seldom if ever feed at the same "table," although both are attracted by the same carrion.

The Turkey Buzzards are protected in Mexico by a kind of unwritten law. The people seem to realize that they are valuable scavengers and that in no way do they conflict with man's interests; therefore, seldom do they molest them. Under these conditions the birds become very tame. One sees them everywhere sitting in groups on the ground, roosting in trees, or circling

overhead, especially along the roadsides and about the borders of country villages where the native people depend on them for the disposal of dead animals, from dogs to donkeys.

I have seen as many as 20 buzzards feeding wholly undisturbed on a burro carcass within a stone's throw of a village entrance. One frequently sees small flocks of them partaking in an equally ignoble feast on the roadside.

It is quite common to see a great flock of these birds circling over a town. In fact, one can often detect the probable site of a village long before one approaches it just by the sight of the circling buzzards.

Last autumn I witnessed the unusual sight of at least a thousand of these birds bathing and resting at midday along the Maya River near Nava-joa. The sandy river bottom was literally black with them as they sat in close formation silently sunning themselves after bathing in the broad shallow stream. Many had wings widely outspread the better to catch the full benefit of the sun's rays.



Desert Peakers named this peak "Whipple I" after spotting from its top a higher summit still in the California range. The hikers missed a second time before victory on Whipple III.

Three Tries to the Top of the Whipple Range

One hundred years to the day after Lieutenant A. W. Whipple camped beside the California range which today bears his name, members of the Sierra Club hiked to the mountains' highest peak. Two false summits were reached before they finally stood on top. Here is the story of a persevering group of mountaineers and the army officer who played an important role in the scientific delineation and recording of the geography of the West.

By LOUISE T. WERNER
Photos by Richard L. Kenyon
Map by Norton Allen

WASHINGTON'S BIRTHDAY dawned chilly but clear at Chambers Well in the southwest foothills of California's Whipple Mountains. It wasn't a pretentious campground, only a wash where half a dozen cars of Sierra Club mountaineers had stopped the night before. Our weekend goal was the highest point in the Whipples, a small desert range 4131 feet above sea level lying

in a crook of the Colorado River 35 miles south of Needles, California.

Sleeping bags hugged the sandy desert floor like so many brown cocoons, stirring to life as their occupants tumbled out. Fires flared in the half-light as boiling coffee, bacon, corned beef hash, frying eggs and palo verde smoke perfumed the crisp cool air.

It wasn't easy crawling out of down bags into the cold. But once bundled

in shirts, sweaters and parkas, huddled close to small cooking fires and sipping hot coffee, everyone soon was awake and cheerful.

As I packed a noon lunch into a plastic bag, a small figure came scrambling over the rocks, a miniature mountaineer, complete with hooded parka, mittens and knapsack. "My name is Betsy Bear," she volunteered. "What's yours?" She was four, she said, and was "a Desert Peaker just like Mommy and Dad," Bob and Emily Bear.

Light was beginning to silver the spines of giant cholla cactus on the west bank of the wash when Leader John Delmonte called: "starting in 10 minutes!" Right on schedule, 6:30 a.m., he started up a draw with 23 hikers in tow.

Assistant Leader Barbara Lilley fell in at line's end—a hard assignment for

a girl who usually leads the pack. On Friday evening Barbara had picked up Ned Smith, Bryce Miller and Monte Griffin in San Diego, driven most of the night, climbed all day Saturday in the Turtle Mountains, joined us Saturday evening at Chamber's Well for the Sunday climb in the Whipples and planned to drive home Sunday night and be back at her office desk Monday morning! "I'm more alert on the job," claims Barbara, "after a strenuous weekend outdoors."

Judith and Jocelyn Delmonte, 9 and 11, scrambled up the rocks right on their father's heels. Behind them strung Bernice and Walt Heninger, two middle-agers who can still outclimb many youngsters, Dick Kenyon, photographer and U.C.L.A. student, Jack Hudson, a Los Angeles fireman, Willard Dean, vice-chairman of the Desert Peaks Section, and others.

We found no trails. It was evident that miners had scratched here and there for gold and copper, and it was probably they who had dug Chambers Well, a hole in the ground with moisture showing. According to a U. S. Water Supply Bulletin, the well was fouled by dead animals and abandoned. We found no other water on our climb.

In spite of our grumblings at getting out of bed, early morning on the desert repaid us. We soon were warmed by the scramble up the draw, and the fresh air was exhilarating. No colorful sunrise this morning; it was too clear. The sun splashed over the ridge, glancing off yellow palo verde bark and the red metamorphic rocks on the slope.

Over the next rise we crossed a clean-swept plateau hard with tiny volcanic mosaic, then over several more, separated by gentle rises, and up a slope dense with man-sized cholla. We all were familiar with this cactus porcupine and advanced warily, trying to avoid the ferocious spines. We had met cholla often on desert hikes but never in such sizes or numbers. None of us escaped unscathed. Jeans, socks and boot-leather were penetrated. Walt Heninger produced tweezers and promptly became the most popular man in the party.

On a volcanic outcropping we paused to dig out the needles and to appreciate the breeze that fanned the ridge. Our eyes followed the thread of the Colorado River below. Cut off on the east by the soaring ridge, it curved around the north side of the range, then around the south. High in the blue a jet whined, pouring out a vapor trail. Two agave stalks, leaning out from the slope, framed what Jack Hudson decided from his topo map was Parker, Arizona.



Young Desert Peaker Betsy Bear, 4, daughter of Bob and Emily Bear, warms herself over a breakfast fire before starting on the morning's trek.

We climbed and climbed—miles of ridge walking, constantly peering up the soaring line in the hope of catching sight of a summit. "Is it the top, Daddy?" Jocelyn would call each time her father topped a hill. After four hours of climbing, we all waited anxiously for each answer and shared the disappointment when it came.

Suddenly, half a mile away, an appreciably higher point arose across a 150-foot dip.

"That may be it," said John.

"Or maybe just the point from which you can see the point from which you view the summit," qualified pessimistic Walt.

Two climbers decided to stay be-

hind while the rest of us scrambled down over the smooth reddish boulders and up again. On our left the thread of the Colorado suddenly bulged into Lake Havasu, above Parker Dam. Desert peaks usually overlook chalky dry lakes. One of sparkling blue was a novelty.

"If this isn't the top," puffed a climber, "I'm not going any farther."

It wasn't. Again the ridge dipped, swung right and continued to a point higher still.

"We'll leave everything here except cameras and make a dash for it," said John, eyeing the sun. It was already an hour past noon. "I'm afraid that's as far as we can explore today."



The climbing Delmonte family on Whipple II — James, 15, Judith, 9, Jocelyn, 11, and Father John Delmonte, leader.

Eight climbers decided to stay on what we named "Whipple II." The other 14 followed John over great slabs of red rock that had weathered out of the ridge. We swung to the right, pulling slowly up the long steep incline. John's arm swept the air in victory as he topped the point.

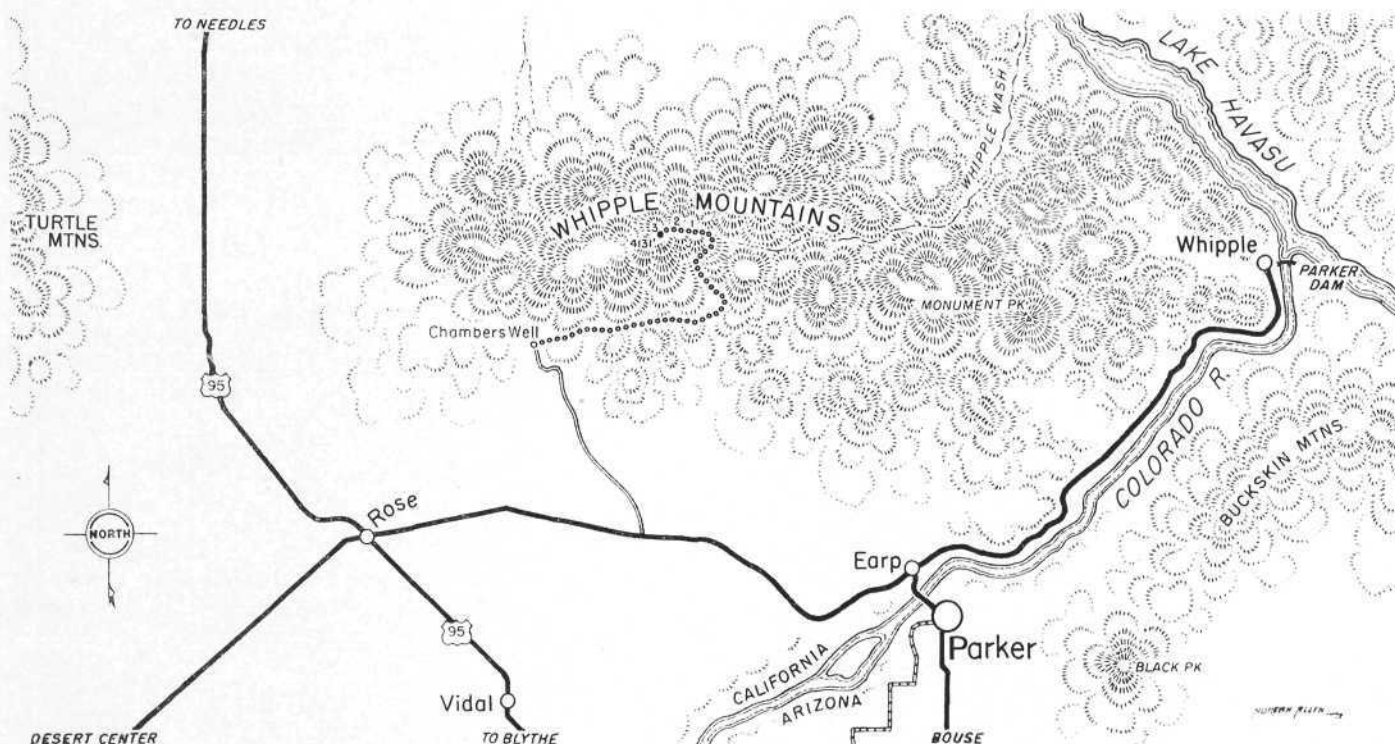
From "Whipple III," 4131 feet above sea level and the summit at last, the terrain fell away in all directions. Lower ridges to the east still blocked out a part of the river's loop around the range. Arizona ranges undulated dark brown as far as the eye could travel.

We stood on the top of the Whipple Mountains on February 22, 1953. Exactly 100 years before, Lieutenant Amiel Weeks Whipple was camped with his party of engineers, topographers, geologists, astronomers, botanists, artists, soldiers and Indian guides in the Chemehuevi Valley at the foot of the Whipple Range. They were surveying for a railroad which was roughly to follow the 35th parallel from Fort Smith, Missouri, to the Pacific Ocean.

The valley which we viewed from our pinnacle perch was far from desolate when Whipple was there.

"The beautiful valley of the Chemehuevis Indians is about five miles broad and eight or ten miles in length," he reported in his journal, published in 1941 as *A Pathfinder in the Southwest*. "As we ascended the eastern edge, we saw numerous villages and a belt of cultivated fields upon the opposite bank. Great numbers of the natives swam the river and brought loads of grain and vegetables. . . . After traveling between 11 and 12 miles, we encamped upon the coarse but abundant grass of the valley." This was Whipple's Camp 130, February 23, 1853.

One of the members of Whipple's party was young Lieutenant Joseph C. Ives. A few years later, Ives commanded an army expedition of his own, exploring the Colorado River in the clumsy steamer, the *Explorer*. It was he who named The Monument, most prominent peak in the Whipple range. "A slender and perfectly symmetrical spire that furnishes a striking landmark, as it can be seen from a great way down the river in beautiful relief





Final victory on the summit of Whipple III, highest point in the Whipple range. Left to right, standing—Barbara Lilley, Louise Werner, Ned Smith, John Delmonte, Garver Light, Willard Dean, Monte Griffin, Jack Hudson, Bryce Miller, James Delmonte, Walt Heninger, Marvin Stevens; seated—Mary Crothers, Bernice Heninger.

against the sky," he described it in his *Report Upon the Colorado River of the West*.

The peak so impressed Ives that he called the entire range the Monument Mountains. Another of the peaks he called Mount Whipple after his former commander. When the Geological Survey mapped the Parker Quadrangle in 1902-03, it applied Whipple's name to the entire mountain mass in the bend of the Colorado, preserving the old name in Monument Peak.

We would have liked to linger longer on the top of the Whipples. The warmth of the sun bathed our pleasantly aching muscles as we lunched and enjoyed the view. "I ain't mad at nobody," remarked Walt.

Reluctantly we started down. Picking up our companions on Whipples II and I, we jogged down a draw south of the ridge we had ascended.

Suddenly a dry falls stopped our rapid progress. Its granite trough, water polished in some past age, was

marble smooth. The rock climbing enthusiasts enjoyed hugging the slippery wall, groping for foot- and hand-holds. Others found it disconcerting to trust their weight on a tiny knob of stone or a precariously slanting slab on the sheer rock face. With teamwork, all soon were safely down.

Several dry falls later, we found ourselves in a deep, narrow canyon. Deciding we were a little off course, John headed toward a saddle to our right. On its other side, an army of cholla lay in ambush. Sparring with cholla in the fresh of the morning was one thing; attacking it after a long day of climbing was quite another.

But just over the next swell we dropped down into camp at Chambers Well. Mrs. Delmonte had water boiling and invited us to tea. It wasn't long before dinner fires were blazing and plates heaped with food. Oh, the ambrosial flavor of beans, frankfurters, canned peaches and billy-boiled coffee after 12 hours on the trail!

INTERNATIONAL BIG BEND PARK IN PLANNING STAGE

First steps toward expanding Big Bend National Park into an international park spanning the Rio Grande were made at informal meetings between Mexican and U. S. officials in Mexico City. The proposed park has been in the planning stage since 1935. It would join Big Bend's 700,000 acres to 500,000 acres in Mexico. It would be free of all customs and immigration red tape, and tourists could cross from Texas into Mexico without even tourist cards. Texas proponents of the idea believe the addition of spectacular Mexican scenery would draw more Big Bend visitors. And Mexican officials hope that tourists would continue into the Mexican interior. Lon Garrison, superintendent of Big Bend National Park, expressed optimism that the current talks would be successful. He was to step up January 1 in the National Park Service through a transfer to Washington.—*Los Angeles Times*.

Agate Hunters in the Apaches

Agate is where you find it—and here is the story of the discovery of a rich new field in the Apache Mountain country of western New Mexico.

By GILBERT L. EGGERT
Map by Norton Allen

I WAS RETURNING from hunting agate in Wilson Canyon when I found the lost calf. The little fellow was weak and obviously abandoned by its mother.

Up to this time the mineral hunt had gone from worse to terrible. Where I had hoped to find chalcedony roses, there were slabs of drusy quartz stained a mottled yellow. The car had gotten stuck in the deep sand of the arroyo, and it had taken hours to ex-

tricate it. Now I was faced with a rescue operation which would take valuable time from my budgeted allotment.

Besides, I knew it was dangerous to be carrying away calves in one's car. My noble intent could easily be misconstrued as cattle rustling.

When I approached the calf my natural sympathy for distressed animals made the decision for me. He was a white-face Hereford, not a week old. When I hoisted him to my shoulders, he gave a plaintive "moo-oo-oo," which was a good sign of life.

After interrogating several ranchers in the vicinity, I learned that Horace Porter ran some stock in this canyon.

I drove to the Porter ranch and showed Horace my debilitated cargo.

He was grateful. The dogie was grateful too; especially after a number of wild pulls on the rubber nipple the experienced rancher had affixed to a spigot in a bucket for such a purpose as this.

When Porter learned that I had come 200 miles from Albuquerque to search for agate, and that I had been unsuccessful, he volunteered to take me to the place "where I have ridden over sparkling rock since I was a boy."

This place he called Lea Russell Canyon.

The rancher also invited me to an early supper, a night's lodging, or any number of nice things. Because I was equipped for camping, I accepted a compromised generosity: I asked him to draw a map of this spectacular canyon. He readily obliged, and my next day's trip was planned.

Apache Creek postoffice, Catron County, New Mexico, is the center of the ranching activity along the Tularosa River. It is reached from U. S. Highway 60 by two routes: from the east, New Mexico State Road 12 leads southwest from Datil, across the plains of San Augustine, past the tiny settlement of Aragon, to Apache Creek; from the West it is approached on U. S. 260, a graveled road akin to New Mexico State 12, the both of them like mother's washboard, through Luna and Reserve, New Mexico.

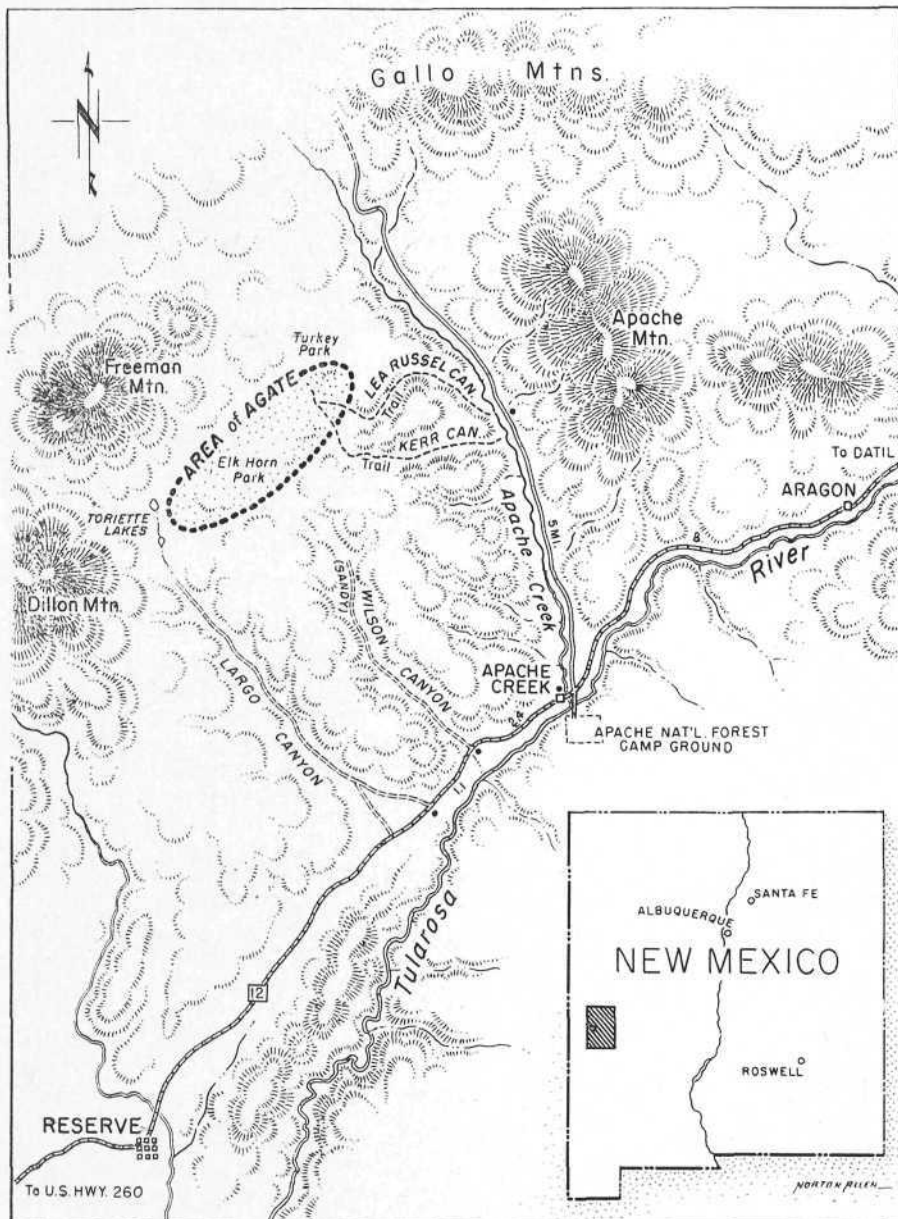
The Tularosa River, which frequently carries a small stream of water, forms a deep canyon to which Apache Creek, Wilson Canyon, and Largo Canyon are tributary.

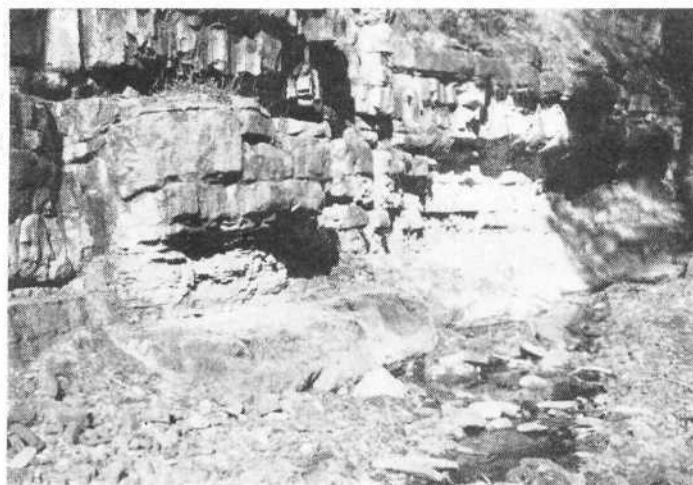
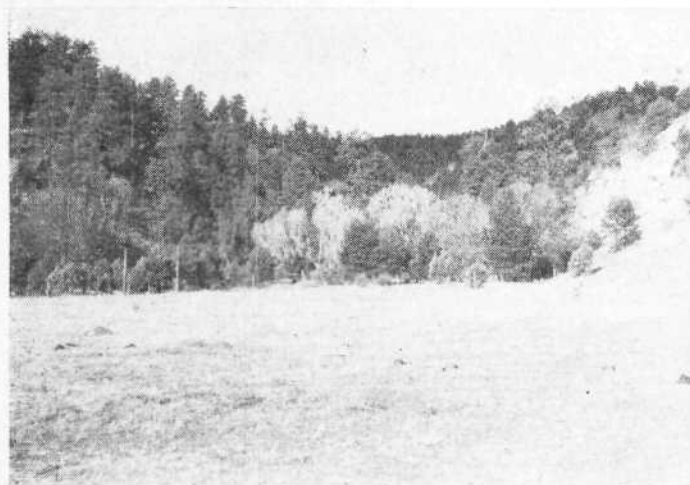
The combination store, filling station and postoffice which is situated at the juncture of Apache Creek and the Tularosa comprises the entire settlement. This enterprise is the domain of Romeo Price, one of the area's leading citizens and brother to Doughbelly Price, a well known New Mexico figure.

It was late afternoon when I arrived at Mr. Price's emporium. During the course of servicing the automobile and purchasing forgotten articles of supply, I chatted with the owner. When asked what I was doing in these parts, I informed the inquisitive gentleman that I was rock hunting.

He made the classic remark, "Well, you don't have to go any farther. There's a 'hull hillside full of rocks." He pointed to drab limestone scree across the road.

I tactfully qualified the purpose of my visit as being a search for agate. The attendant then said, seriously, "Why don't you go up Lea Russell





The entrance to Lea Russell Canyon is well concealed behind a thicket of trees.

Beneath this limestone face the author found the biggest agate he had ever seen.

Canyon? It's got lots of sparklers all over it." This verification of Horace Porter's directions was reassuring.

I parked for the night in the Forest Service campground across from the Price store. As I was cooking supper, Horace Porter drove up in a muddy Jeep. He had come to the store for supplies and had seen my campfire. I asked him to share the grub with me. He accepted a cup of coffee, and settled down for a neighborly chat.

While the cool breeze fanned the ashes to a glow, he and I talked about agate, the canyons of the area and the people.

"Most of the ranchers in this area are Mormon," he informed me. "Their granddaddys were called by the Church to settle these bottoms. A caravan of settlers left Utah in the early '70s, crossed the Colorado at Lee's Ferry, and settled at what was called Milligan Plaza, on the San Francisco River. It is now Reserve. They spread out from there, settling the towns of Alma and Pleasanton. My Granddaddy homesteaded our land in the '80s.

"I recall my father reading to us from the family Bible. There was a passage in Genesis in which is mentioned bdellium and onyx occurring in the Land of Havilah, near the Garden of Eden," he continued.

"Bdellium is what we call opal today," I answered.

"I often wondered if it was something like the agate we have here. As a boy, whenever I rode across Turkey Flat at the head of Lea Russell Canyon and saw all that glittering stone, I called them diamonds," he said.

He went on to tell how the Chiricahua Apaches under Mangas Coloradas had raided this valley in the '80s, and how many of the people in the outlying ranches had been killed. His people

had somehow escaped, to return and commence where they had left off.

Apache Springs, at the head of Apache Creek Canyon, had been headquarters for Victorio and other famous leaders of these fiercest of all southwestern Indians.

"You will find many places in these canyons where the Apaches had lookout stations, usually near springs. I have found arrow heads, axes, and other relics," Horace said.

After being assured that I had my directions straight to Lea Russell Canyon, the friendly rancher departed for home.

The tall singing pines made this a delightful place for a night's camp. Next morning I headed for the "Land of Havilah."

After driving five miles along Apache Creek, I remembered Porter's directions: "The mouth of the canyon is hidden behind some big trees but once you get to the alfalfa field, walk across the creek and you will be standing in front of it. The Canyon boxes fast, then you come to a trickle of water. Follow it to a spring. Keep going until you bench out, then turn to the north. That is where the best rock is found." These directions took me to the right place.

While I walked up the dry wash which was the beginning of Lea Russell Canyon, I noticed a changed geology from Wilson Canyon. There the predominant bedrock had been mica-specked granite; here the regular, hori-

zontal layers of sedimentaries were largely limestone, with thin layers of sandstone imitating the cheese in the sandwich.

After passing a turn in the narrow draw, I came upon a trickle of running water. Beside it, and below a face of limestone there lay the largest single piece of agate I had ever seen. White bands, grading into rose-purple lines, traversed the broken face of the piece, forming swirls, triangles, bird's-eyes, and a potpourri of intricate patterns. Tiny vugs glittered with a myriad of microscopic quartz crystals. I estimated its weight at 20 to 30 pounds. After placing this prize where I could pick it up on my return trip I continued up the easy slope.

I was watching the float which littered the canyon floor. There was plenty of quartz crystal, but I searched for the banded agate.

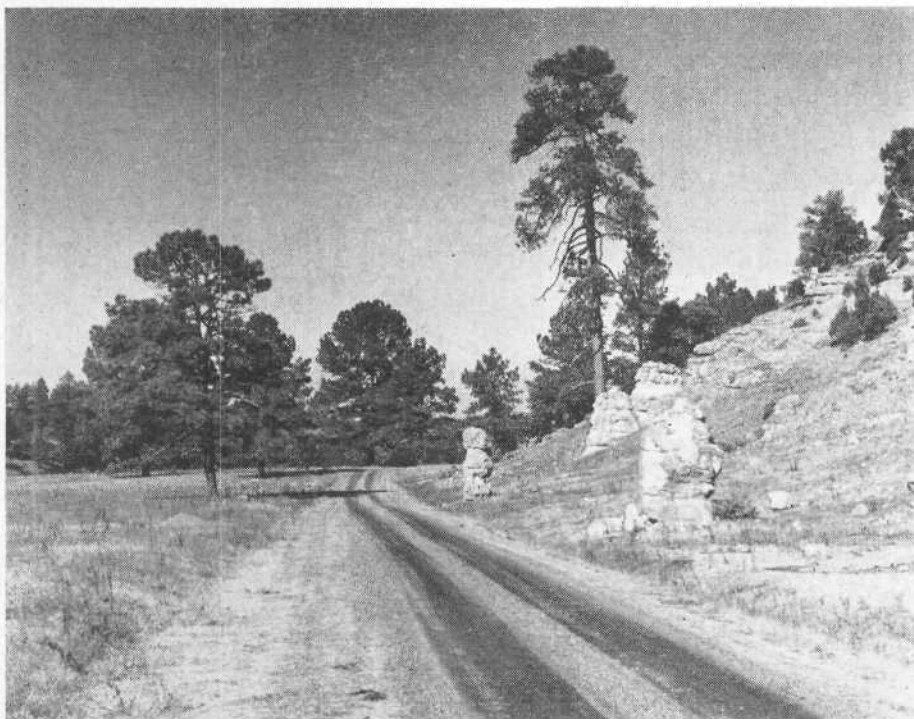
Two little red eyes looked at me from beneath a twig. It was orbicular jasper, as red as blood, with rosy buttons promiscuously inlaid.

I hastened up the trail. If these finds were droppings from the table, what must the mother lode be like?

I passed the spring and, as directed, benched out to the north side of the shallow canyon. I almost fell into a large depression in the earth before I saw it.

Three such sunken pits geometrically delineated the site of ancient Indian buildings. This obviously was the dwelling of some Apache stone artificer. Chips of chalcedony and agate littered the ground. A corner of bluish opal protruded from the slit which filled the holes. It was an axe head, roughly chipped, with the thong-grooves clearly visible. Perhaps impatience, or a foraging and hostile band of neighbors, caused the Indian to abandon his labor.





Entering the Apache Forest at Horse Springs.

A short distance from the Indian ruin, the rock became cracked and seamed. I stopped to examine a large

seam by inserting the point of my GI pick and prying it open. A chunk of the rock fell away, disclosing a mineral-

filled vug. The filling easily chipped out. Soon a small mound of red and blue chalcedony, blue and white agate, and a transition type of bluish opal lay at my feet.

When I topped the last rise of the canyon, I looked over a limited but level mesa—Turkey Flat. Dotting this stubble-grass flat were single pieces, tumbled masses, and even heaped piles of agate, chalcedony, opal of a low quality, and jasper. In the abbreviated washes where the mounds of mineral had accumulated I discovered botryoidal prase of a greenish-blue color.

The problem became not one of search, but rather one of selection. I felt as must Pizarro when he stood amidst the Peruvian gold and lamented the fact that an Indian could carry only a hundred pounds. This "Indian" could carry only half that weight down the three miles of Russell's canyon, and that must include that first big specimen which was down along the trail waiting for my return.

When I reached the car, and had dumped my sagging load, I looked back at the area where I had been. This maze of canyons was a world of agate in an agate-conscious world, spoiling for discovery.

Even though it was out of my homeward way, I resolved to return to the Porter ranch in order to render thanks to the man who had guided me to such a field. And beside me on the seat, I had a dozen cans of milk for a certain lost calf of my recent acquaintance.

Prizes for Photographers . . .

Along with snow in the high desert regions and a cool nip to the air, February brings to the desert sparkling clear skies to delight the photographer. And there will be clouds—great frothy billows, delicate wisps, strange long streamers, and chubby puffs—for interesting backgrounds for black and white, spectacular sunsets for color film. Photographers are invited to enter their best black-and-whites of desert subjects in Desert Magazine's Picture-of-the-Month Contest.

Entries for the February contest must be in the Desert Magazine office, Palm Desert, California, by February 20, and the winning prints will appear in the April 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

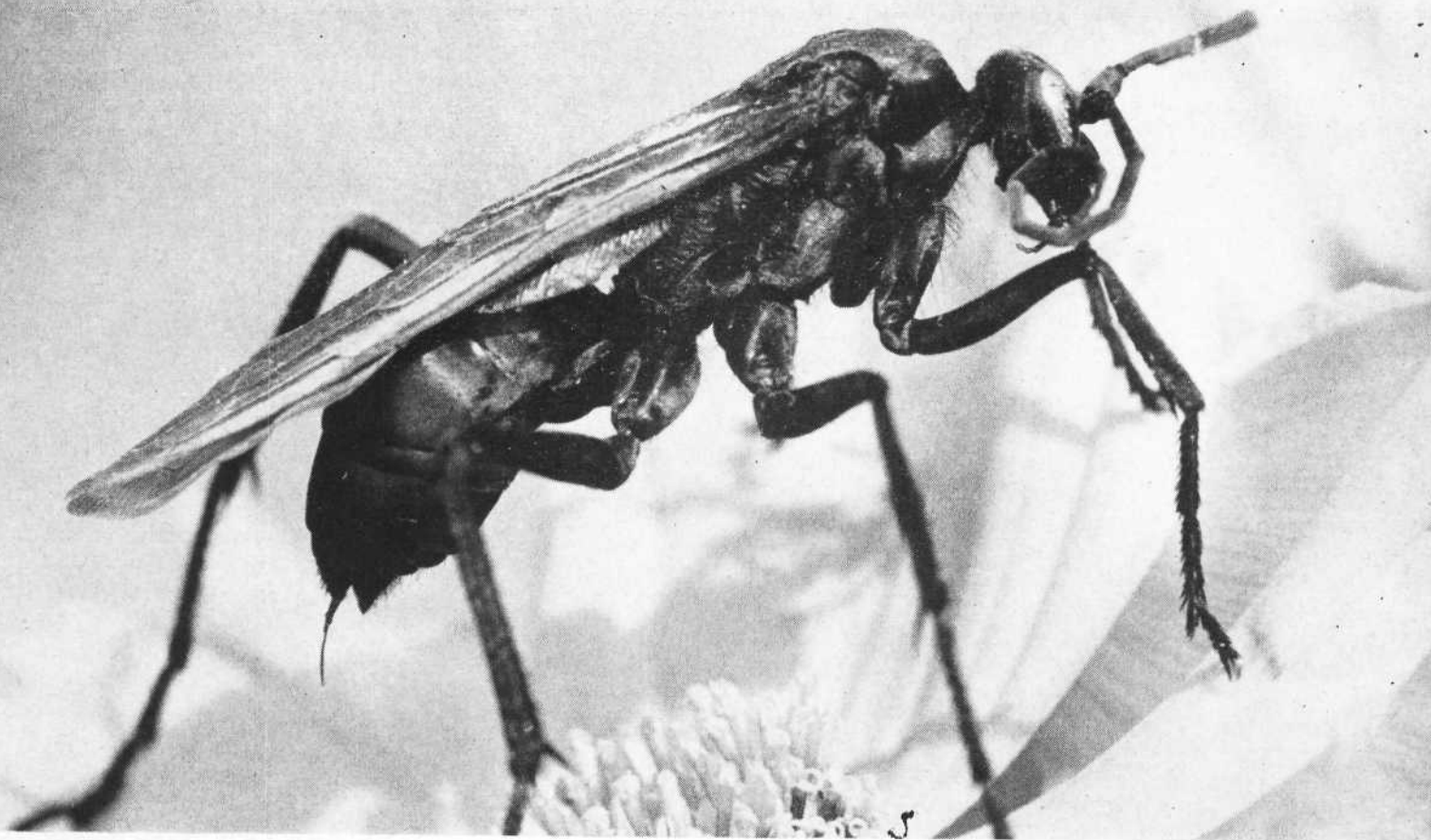
PALM DESERT, CALIFORNIA

THE *Desert* MAGAZINE CLOSE-UPS

Dolores Butterfield Jeffords is well-qualified for the type of travel reporting she offers *Desert Magazine* readers this month in "Dwelling Place of the Ancients." A native of the American Southwest, raised in Mexico, she knows desert country.

After early schooling in Mexico, Mrs. Jeffords returned to California to complete her education and remained to work for several years. On a vacation trip to Chicago, she met her husband and they have made their permanent home in the East.

Travel is part of Mr. Jeffords' job, and Mrs. Jeffords accompanies him and writes about the places they visit for travel and natural history magazines. They presently make their home in Baltimore, Maryland.



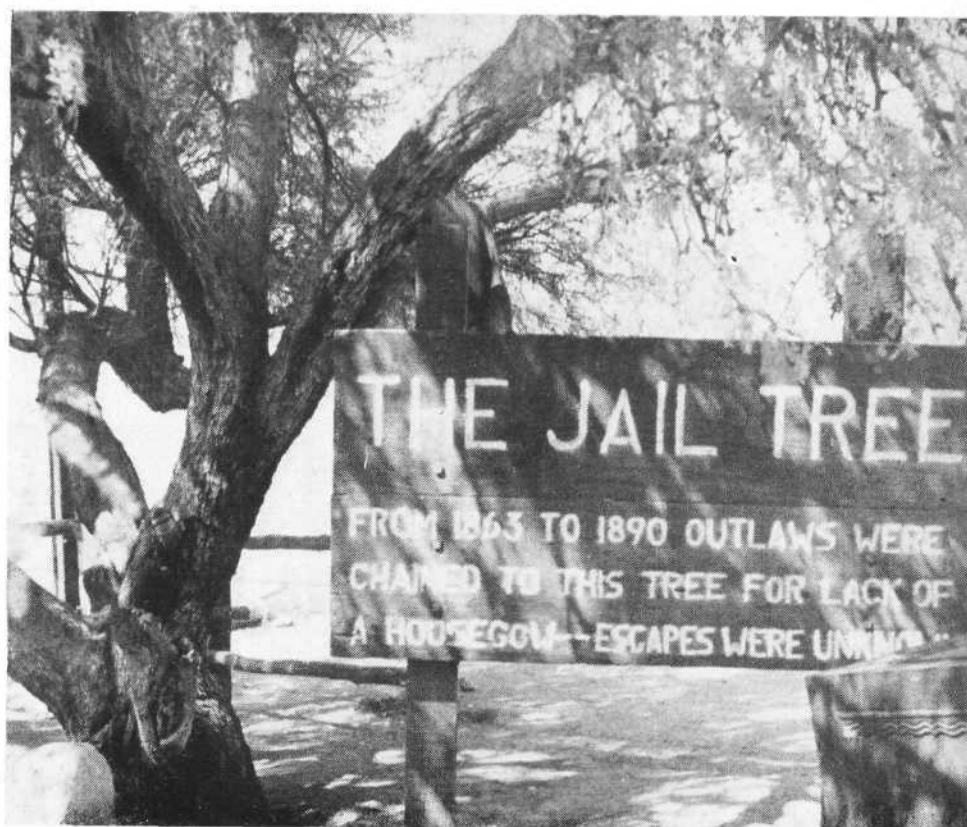
PICTURES OF THE MONTH

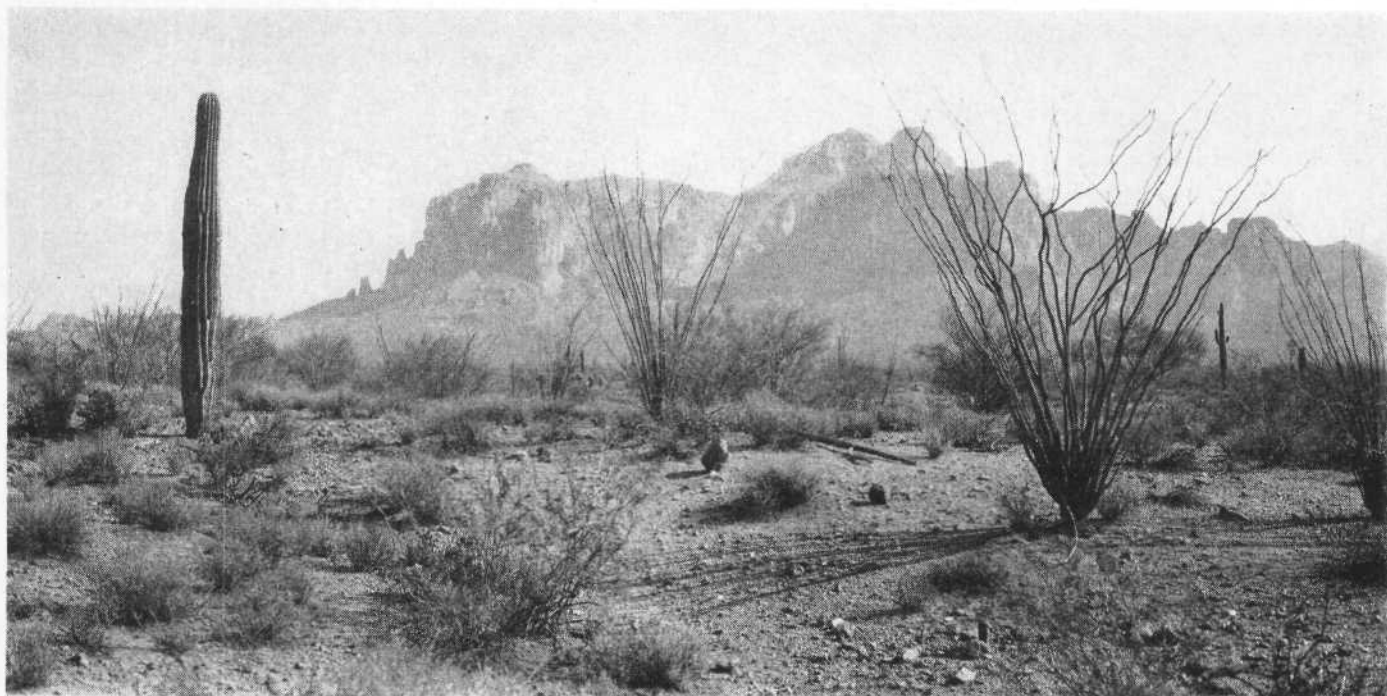
Tarantula Hawk

Clinton L. Hoffman of Arcadia, California, won first prize in Desert's December Picture-of-the-Month contest with this close-up photograph of a tarantula hawk. It was taken with an Eastman View camera, 8¼ Goertz Dagor lens, 1/25 second at f. 22.

The Jail Tree

History and humor of the Western frontier are combined in this second-prize photo taken at Wickenburg, Arizona. Photographer Ruth Malatesta of Sherman Oaks, California, used a Uniflex Universal camera, 1/50 second at f. 16.





Many treasures are said to be hidden in the grim canyons and waterless draws of Arizona's Superstition Mountains.

LIFE ON THE DESERT

By TOM MAY

Tom May had heard too much about prospectors who had lost their lives in the Superstition Mountains to spend any time looking for the lost Spanish mine. But it was an interesting yarn the stranger told him, about the poison lode on Geronimo Head.

SHORTLY PAST seven o'clock one morning last May, I stopped at the roadside park near Coolidge Dam, Arizona, to rest a few minutes before continuing eastward on my vacation trip. Getting out of my car to stretch my legs, I walked over to a man who was eating a lone breakfast at one of the trellis shaded picnic tables.

He ate slowly, taking sardines from a small flat can and hard bread from an old cloth sack and washing them down with long draughts of water poured into his rusty flat-bottomed cup from a dirty waterbag. After finishing the bread and fish, he opened a can of corn and ate its contents without bothering to heat or cook it.

The stranger's clothes were dirty and appeared to have been worn for weeks without changing. He had a month's growth of beard—a thick mat of red—but underneath his face and neck were scrubbed, as though he had bathed and put the same clothes back on. Parked nearby was a late model panel truck covered with desert dust and grime.

He was shy and uncommunicative at first, but my comments on the desert and mountains eventually drew him out. It wasn't long before he was talking freely—and it was an interesting story he had to tell.

He had been prospecting the Superstition Mountains near Phoenix the past four weeks, he said, but with no success. It was his third or fourth trip into the country.

He had hiked up La Barge Canyon to the Reddish Hills, somewhere close to where Boulder Canyon enters La Barge. "Those Reddish Hills have been prospected so much," he said, "they look as though someone was preparing to plant a vegetable garden there. Some of the 'scratchings' I saw were deep tunnels extending from 10 to 100 feet back into the mountain."

He had climbed to the top of Geronimo Head Mountain. "I came up the rough side," he said, "using my walking stick to part the thorny brush and pulling myself up over ledges where the canyon wall went nearly straight up. Often I had to stretch and strain every muscle to reach a projecting shelf and pull myself onto it.

"One such ledge had a frightening surprise on top. I pulled my chin level to its floor to find myself staring a giant rattlesnake right in the eye. He lay coiled in the sun, his black forked tongue shooting out at me. Like a tortoise back into his shell I jerked my head down and held on for dear life while I steadied my precarious position on the face of the mountain wall. I turned my walking stick around

so that the larger end was extended and, raising up as far as I dared, struck the snake what fortunately proved a fatal blow squarely on the head. I continued upward and before long was sitting on the summit, looking far out over the country."

Why had he undertaken such an arduous climb in such desolate country, I asked. He was looking for a narrow hidden canyon, he replied, in which is supposed to be buried a fortune in Spanish gold bullion, cached there by Apache Indians after they had killed the Spaniards who had been mining the hidden canyon for some time.

The stranger had heard about the canyon from a young man he had met in La Barge Canyon who had failed in several attempts to reach the top of the mountain. This young man had a fine aerial photograph of the mountain as a guide, and had attempted plotting a route from it. But the photo was deceptive; promising canyons and arroyos too often led into narrow canyons choked with brush or dead-ended at the base of sheer cliffs.

As the man talked and gestured, I noticed his left hand and forearm were swollen to about three times the size of his right and appeared to be sore and stiff. It looked painfully injured, and I asked him about it.

He rested his elbow on the table and turned his hand from side to side so I could see the injured limb. How it happened proved a long story.

"After the Apaches massacred Pedro Peralta's caravan," he began, "the Indians sent their squaws back into the Superstitions to seal all the old mines which the Spaniards had been working. While I was sitting on the top of Geronimo Head, scanning the country below with binoculars, I spotted what I thought might be one of these mines. I climbed down to it. It proved to be an old cave, apparently man-made—possibly a mine.

"I set to work with chisels and hand drills trying to break through what I thought must be the mortar used by the Indian women to seal the entrance. I worked a day and a half and moved about five tons of rock and dirt.

"The second morning I noticed my hand was beginning to swell and get stiff, and then I noticed these spots." He showed me four bluish red splotches on the back of his hand, each about the circumference of a lead pencil, the four of them forming the corners of a two and one-half inch square.

He obviously was worried about the hand, but when I offered to get the first aid kit from my car, he declined, insisting he had already done all he could for it. I told him where he could probably find a doctor, but he said he planned to wait until he got home to Dallas, Texas, and could see his family physician. He said that the hand and arm, though numb and stiff, were not in the least painful.

He had made camp at Tortilla Camp, on Canyon Lake, but he would not reveal the exact location of the old mine in which he had been working. He said only that it was in the vicinity of Geronimo Head Mountain.

His equipment was far superior to the average prospector's. He had a fine photographic outfit, but had exposed few plates. He had taken no notes. His mining tools were of high quality and carefully selected with efficiency and weight in mind.

The prospector was sure that his hand had been poisoned, and he was inclined to believe that it was from some poison mixed into the mortar by the Indian squaws who had sealed the mine he opened. He was certain that he had not been bitten by either rattlesnake or scorpion, as he surely would have been conscious of the accident if he had.

I hope he made it to Dallas and recovered from the injury. I never heard from him again, and now I don't even remember his name. No, I didn't

look for the lost mine, but continued east on my trip. I had heard too much of the hardships faced by prospectors in the rugged, waterless Superstitions

— and never of any modern gold-seeker striking bonanza there—to follow vague clues to the poison lode on Geronimo Head.

Desert Quiz

This monthly quiz really is a sort of School of the Desert. It covers a wide range of subjects: geography, history, mineralogy, mining, botany, Indians, and the general lore of the desert country. Most of those who take the quiz test every month find their scores gradually improving. A tenderfoot will do well to answer 10 questions correctly, 12 to 14 is a fair score, 15 to 18 is good, over 18 is exceptional. The answers are on page 36.

- 1—The historic feud between the Clanton Gang and the Earps ended in a showdown fight at — Bisbee _____. Tombstone _____. Prescott _____. Ehrenberg _____.
- 2—The Gadsden territory was purchased from the — Mexicans _____. Indians _____. France _____. Spain _____.
- 3—The desert woodpecker, when it drills a hole for its home, prefers— Mesquite trees _____. Ironwood _____. Saguaro cactus _____. Palo Verde _____.
- 4—Driving your car through heavy sand you probably would get best results by—Letting your wife drive while you push _____. Putting chains on the wheels _____. Letting some air out of the tires _____. Turning the car around and backing out _____.
- 5—Tribesmen living in Moenkopi, Arizona, are — Apaches _____. Hopis _____. Navajos _____. Papagos _____.
- 6—The color of juniper berries when mature is—Blue _____. Red _____. Green _____. White _____.
- 7—Hohokam is the name given a prehistoric people who once dwelt in—Death Valley _____. Salt River Valley of Arizona _____. Basin of the Great Salt Lake _____. Grand Canyon _____.
- 8—The wealth of the legendary Seven Cities of Cibola was found by— Coronado _____. Escalante _____. Pegleg Smith _____. Never found _____.
- 9—The Kaibab Forest is located in — New Mexico _____. Utah _____. Nevada _____. Arizona _____.
- 10—Amethyst is quartz which gets its violet coloring from—Iron _____. Copper _____. Zinc _____. Manganese _____.
- 11—Dates in the Coachella Valley of California generally are harvested by—Shaking the fruit off the tree _____. Knocking it down with a long pole _____. Climbing the tree and picking the fruit from its stems _____. Cutting off the stem and dropping them to the ground for picking _____.
- 12—"Stope" is a word used in—Mining _____. Dude wrangling _____. Irrigating desert lands _____. Making cactus furniture _____.
- 13—Largest city visible from Nevada's Charleston Peak is — Las Vegas _____. Reno _____. Carson City _____. Tonopah _____.
- 14—Smoke trees most commonly are found growing in—Sand dunes _____. On rocky hillsides _____. In salty cienegas _____. In sandy arroyos _____.
- 15—Martynia or devil's claw, is used by desert Indians mainly for — Weaving baskets _____. Seasoning meat _____. Making sand paintings _____. Curing fever _____.
- 16—Chief industry of the Yuma Indians is—Farming _____. Mining _____. Weaving blankets _____. Making pottery _____.
- 17—Generally speaking, prehistoric Indian cliff houses were made mainly of — Rocks with mud mortar _____. Adobe _____. Timber _____. Thatch _____.
- 18—*Tinajas* is a Spanish word, the English translation of which is — Courtyard _____. Natural tanks of water _____. Herds of livestock _____. Rolling hills _____.
- 19—Carnotite, the most common source of uranium in the United States is — A black mineral _____. Yellow _____. Blue _____. Variegated hues _____.
- 20—Through Arizona's Glen Canyon flows the — Salt River _____. Verde River _____. Colorado River _____. Gila River _____.



From U. S. Highway 91, Nevada State Route 40 descends into the fantastically colorful wonderland of the Valley of Fire.

Dwelling Place of the Ancients

In Nevada's Valley of Fire tourists today wander among stone monoliths—in the footsteps of aboriginal tribesmen who left their marks on the brilliantly colored rocks. One wonders why the ancients came to this bleak waterless region—but perhaps they were intrigued by the fantastic shapes and shades that Nature created here—just as travelers are today.

By DOLORES BUTTERFIELD JEFFORDS
Photographs by Desert Sea News Bureau
Map by Norton Allen

NOT MANY people knew of Nevada's Valley of Fire before the construction of Hoover Dam—and of those who had heard of its marvelous red cliffs, only the hardiest few had seen them. But with the creation of Lake Mead National Recreational Area, interest in the valley grew, and soon paved highways provided ready access to its wonders.

The roads have brought thousands of visitors to the strange, vivid red canyon high above the northern arm of Lake Mead to inspect its geology, its fantastic formations and prehistoric relics. Most of the tourists enter by U.S. Highway 91, the Arrowhead Trail

from Las Vegas, turning off on State Route 40.

One of the first places they are apt to stop is Gypsum Cave, once the lair of the long extinct giant ground sloth, a curious hairy beast larger than today's giant grizzly bear. Primitive weapons, as well as the remains of sloths and other prehistoric animals, have been found there.

Beyond Gypsum cave the road descends to the floor of the Valley of Fire. At the entrance the walls of the canyon are a soft, warm rose, but as the descent continues the color of the red Jurassic sandstone deepens.

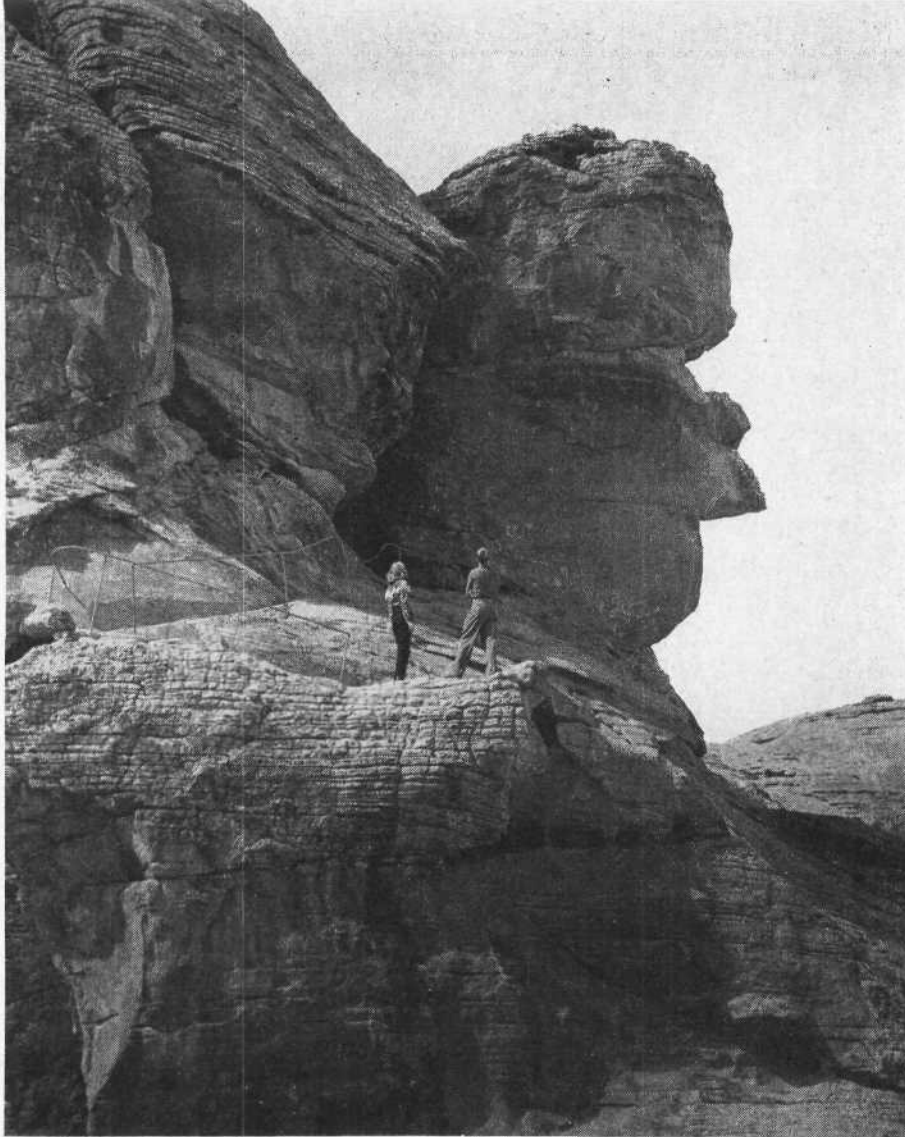
The valley is six miles long with a

four-mile maximum width. At the widest part there is a campsite with a stone shelter and picnic tables, but no water.

Beyond the camp-ground the road ascends, threading among huge masses of rock that appear to have been cast at random by some Paul Bunyon hand, sometimes singly and again in great piles. The canyon walls are eroded here and there, creating caverns, massive columns and grotesque bas-relief effects.

Some of the more popular formations are the Pink Elephant, under whose giant trunk every tourist poses for a picture; red sandstone Atlatl Rock, covered with petroglyphs left there by the aborigines who once dwelt in this colorful valley; and the Beehive, swirled and grooved like a mammoth wasp's nest.

Petroglyphs found on the rocks include the crude forms of lizards and other reptiles, animals and more or less symmetrical circles. While some



Visitors puzzle over the petroglyphs left by the ancients on many of the flat wall surfaces of the Valley of Fire. Above, Sphinx Rock.

of the figures may be identified, the significance of a majority of them is a complete mystery.

Fragments of a petrified forest in this area indicate that, at some far distant period, large trees may have covered a considerable portion of this present land of barren rocks.

In a narrow pass the color intensity reaches saturation, especially when the lowering sun touches the sandstone with fire. Beyond the pass the road turns downward over a rugged slope, and the valley's radiant hues disappear from sight.

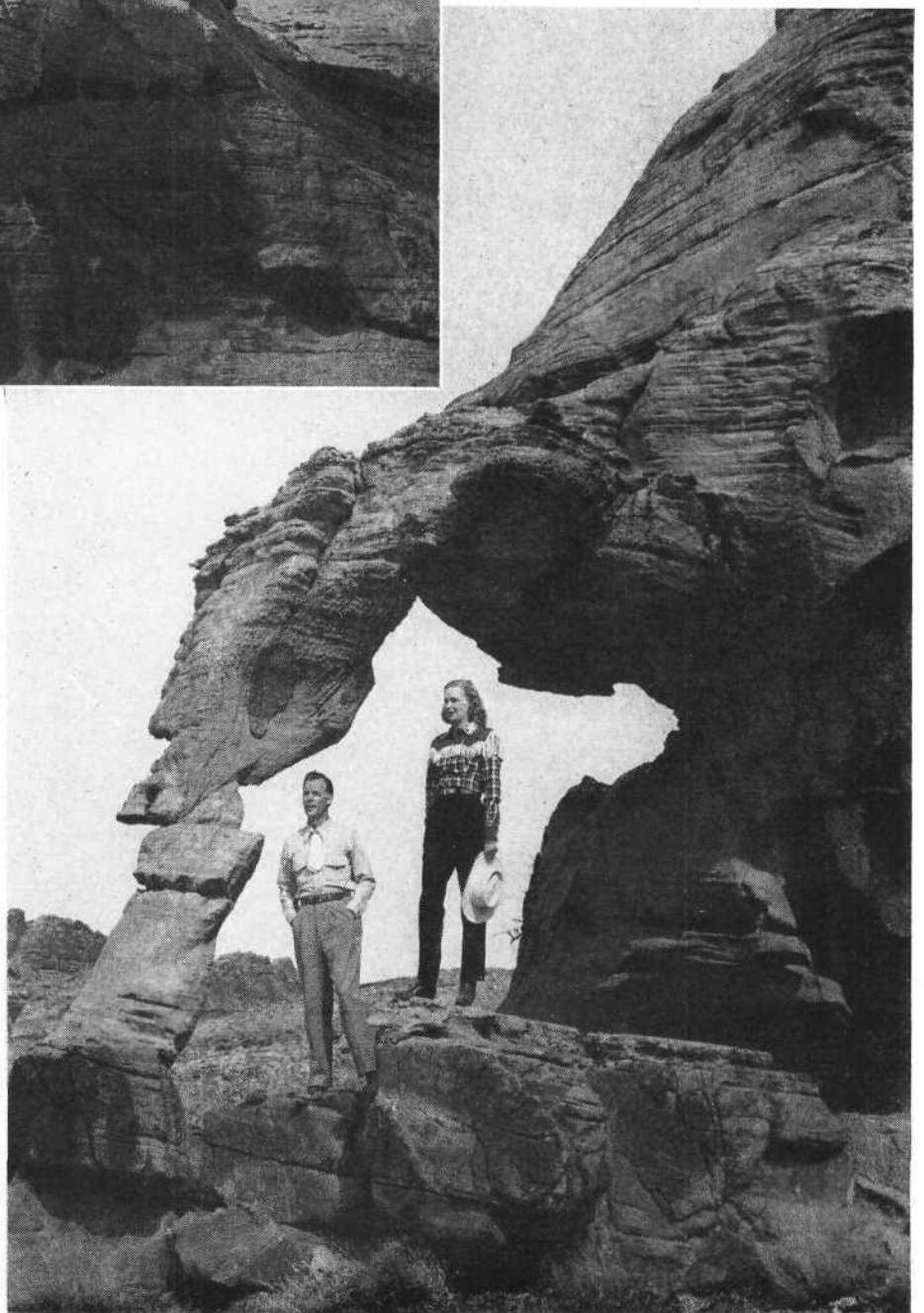
Just beyond the Valley of Fire Route 40 joins Route 12. Northward on Route 12 is Overton Museum, an adobe structure containing an extensive and well arranged collection of early Pueblo Indian artifacts and other relics, many of which were transferred to the museum from the ruins of Lost City, now covered by Lake Mead.

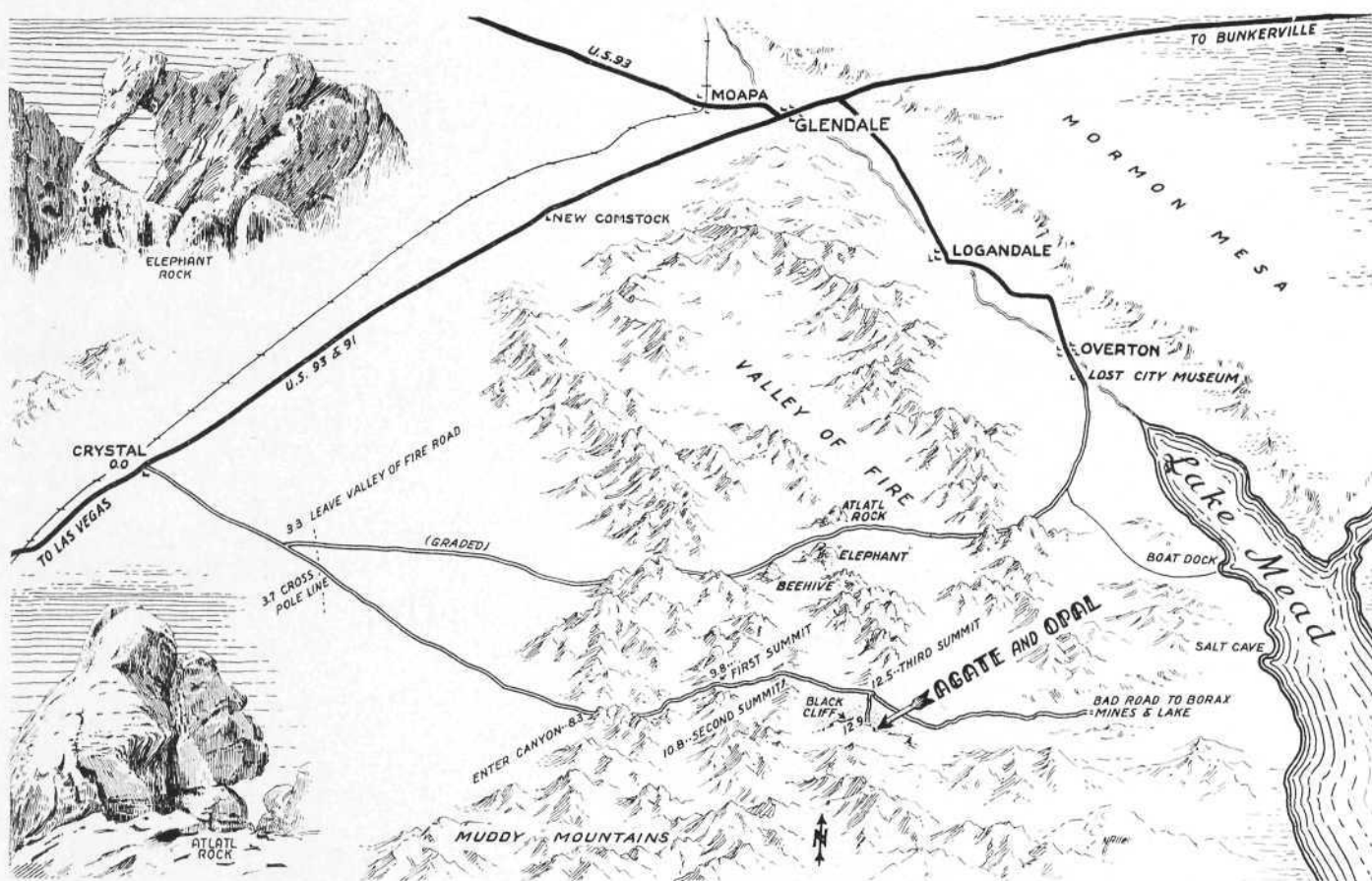
The Valley of Fire was made a State Park in 1935, comprising 8756 acres. There seems to be no evidence that

the valley was formed by a stream. It is considered more probable that a solid mass of sandstone was cracked open by the same upheavals which, outside the valley, dislodged and tilted great blocks of stone. Erosion then carved out the little basin, the blazing color of which is confined to its own limits. Small though it is, its weird stone figures and fossil trees, unreadable petroglyphs which have withstood Nature's sandblasting desert winds for hundreds of years, the warmth and beauty of its colorful walls and turrets make it a fascinating place to explore.

(See map, following page)

Elephant Rock is perhaps the most famous of the rock formations in the Valley of Fire. Bill Carneal and Barbara Jean Nelson stand beneath the giant pink trunk.





At Crystal, Nevada, State Route 40 leaves U. S. 91 for the Valley of Fire. Rock-hounds will find good agate and opal hunting at the end of the dirt road south of gravelled 40.

LETTERS

Placer Mining Information . . .

Nampa, Idaho

Desert:

In *Desert's* November issue, question 18 of the True or False Desert Quiz was: "Uranium is never obtained by placer mining operations." On the answer page it said "True."

I disagree. Uranium or rather primary uranium, bannerite, is or can be obtained by placer mining on Kelly Creek in the Sawtooth Mountains of Central Idaho. John Weidmann who has hunted and trapped in the Sawtooth and also herded sheep in the area, established gold placer claims on Kelly Creek a tributary to Valley Creek which in turn flows into the Salmon River. A government mining report in 1922 mentioned the presence of bannerite in the area, but during those years prospectors were interested only in gold and uranium was just an oddity for scientists.

A mining man flew over the area by plane a few years ago and the scintillator registered unusual radiation

over the Kelly Creek area. Later ground prospecting disclosed that the radiation came from the bannerite on John's claims. A mining company made a deal with Weidmann to recover the zircon, garnet, monazite sands, gold and of course the bannerite.

Idaho is also one of the leading producers of monazite sands which contain radioactive thorium and these sands are obtained by placer mining or dredging. Large dredges are working over the old placer diggings from which the gold or most of it has been recovered. Since I have not been in the Kelly Creek area for the last two years I do not know if the mining company has put the dredge to work as yet recovering the bannerite. I have not read of it in the local papers.

EMIL W. PAPE

Blame the Editor . . .

Danville, California

Desert:

How much I have enjoyed Harold Weight's well-written articles in *Desert!* But it was a jolting surprise to find a grammatical error in his story in your December issue. "Sally had invited Eva Wilson and Lucile and I . . ." the sentence read. Surely, no

one ever invites "I," whether alone or in company — he just has to invite "me"!

It's a small thing to quibble about, but it was a shock to an old-fashioned school teacher.

(MRS.) INES A. FRASER

Harold Weight's December manuscript was grammatically perfect. It was one of Desert's editors who mixed his cases and a sleepy proof-reader who let the subjective "I" slip by where only the objective "me" belonged.—R.H.

Sparrows, Not Swallows . . .

Riverside, California

Desert:

In my article, "Clown of the Wastelands" in the December issue of *Desert Magazine*, is an error which needs correction.

In the last paragraph, the text says that occasionally the roadrunner may eat "eggs of small ground-nest swallows or even the young birds, feathers and all." This should have read "sparrows," not swallows. No swallows are ground-nesting birds. The desert song sparrow, *Melospiza melodia fallax*, and several other desert sparrows may nest on the ground.

EDMUND C. JAEGER

Those Pesky Rabbits! . . .

Friday Harbor, Washington
Desert:

On our yearly shopping and Thanksgiving trip to the mainland we picked up mail at the postoffice and found December *Desert* among it. We were particularly interested in—and sympathetic with!—the problem the editor and his wife have with jackrabbits on their lawn and in their flowers. If San Juan Island has anything, it's rabbits—and rabbits and rabbits and more rabbits!

Turned loose by early day rabbit raisers who went bankrupt, thousands of descendants of tame Belgian hares now populate the island. There is some industry in netting them alive and also in shipping them butchered. One family here ships on order to midwest gun clubs, hundreds of the pesky things, and still they continue to flourish.

Experience has taught the inhabitants of this rabbit-plagued island that they can do one or all of several things: poison, shoot, fence against, ignore—or learn to love them!

We have tried all of the above, and none is really successful. I poison regularly, about once a month, and it does only temporary good. I shoot them. I have fenced my garden with galvanized wire fencing, buried four inches below ground and extending up 32 inches. So far this has protected my flowers and vegetables. I've ignored them until they just sit and stare at me and refuse to get out of the way when I feed the chickens. And, last, I have learned to love a chosen few from the multitudes—the small ones, cute and brave.

You have my sympathy!

MYRTLE A. LOWELL

Another Suggestion . . .

Honesdale, Pennsylvania
Desert:

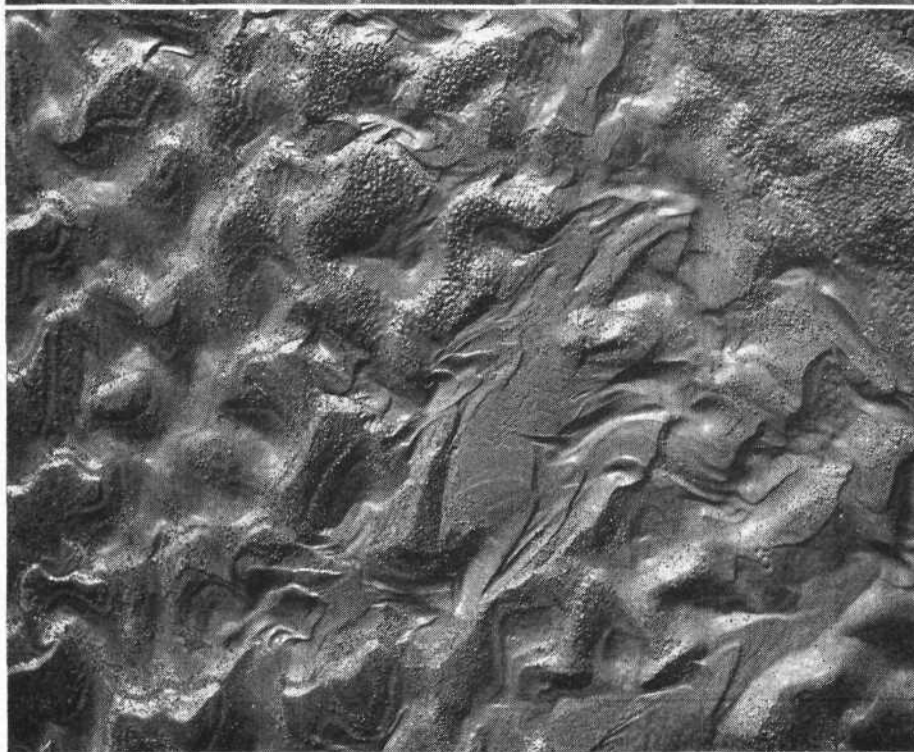
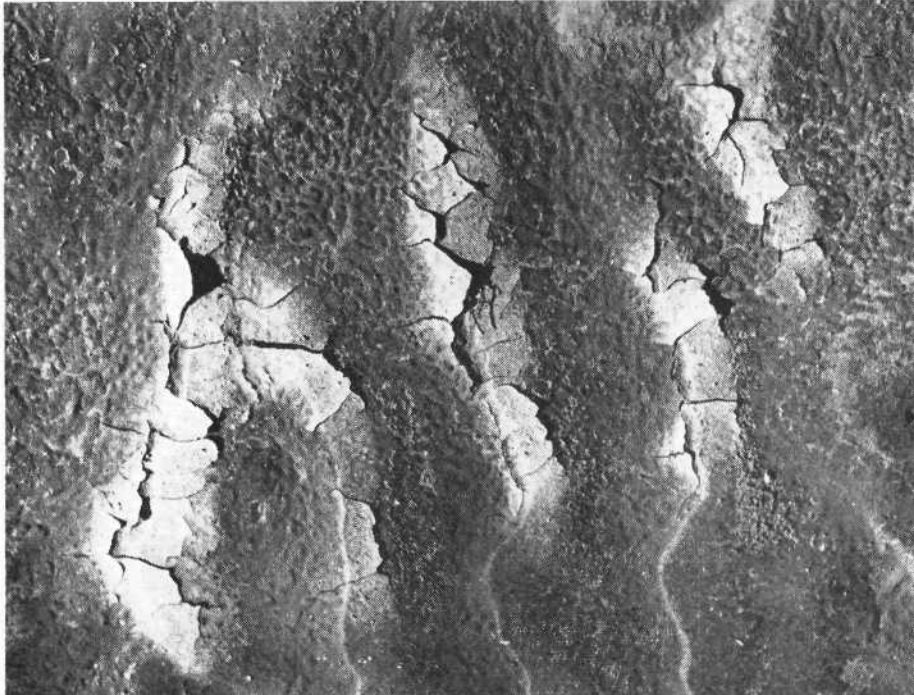
The book, *10,000 Garden Questions*, published by Doubleday Doran, quotes the New Jersey Fish and Game Commission as recommending nine effective rabbit repellents. We tried one, epsom salts, and found it saved our tulips from cottontails. Perhaps it would do as much for petunias against the jacks. Spray or sprinkle with a three-ounce to the gallon solution.

GERALD PRATT, SR.

Or Try This . . .

Cottage Grove, Oregon
Desert:

In Florida I raised all kinds of plants, especially cabbage, and never had any trouble with rabbits, although there were many around. I couldn't figure out why my garden was spared until



Desert Patterns . . .

A study in contrasts photographed in Death Valley by George Ballis of Fresno, California. He first was impressed by "The Thirsty Land" (top), parched cracked alkali earth near Stove Pipe Wells. Later, when a sudden storm came up, he took "Rain Patterns," an abstract composition of droplets and rivulets and swirls of water on sand. Taken through a light green filter, 1/250 second at f. 5.6.

a friend who had lived there all his life explained that it was because I used manure out of the poultry house to fertilize my plants. He said it was the odor that kept them away.

Scatter the fertilizer on the ground, then hoe it under. Don't lay it too thickly, or it will be too strong. I don't know whether it will work for jackrabbits, but anyway it is fine for the plants.

BERT V. HANDS

They Don't Like Creosote . . .

Glendale, Oregon
Desert:

Here is something I hope will keep the rabbits out of your wife's flower garden. It keeps the deer out, I know. Soak cloths in creosote and put them where the rabbits will come in contact with them.

Neither do I believe in guns or poison.

WINIFRED L. CLARKE

January Rains Come to Desert; Bring Hope for Wildflowers

As this report is written January 3, California's Coachella Valley is still wet and fragrant following a heavy New Year's weekend storm. Barring the return of the below-freezing nights of December, the moisture should sprout sleeping wildflower seeds and insure normal flowering this spring. With warm days to speed growth, the sand verbena and geraea, the golden roadside sunflower, should be in blossom by February.

Across the Santa Rosas from Palm Desert, James B. Chaffee, supervisor of Borrego State Park, also viewed the coming season with optimism, following mid-November rains of almost an inch, and the early January precipitation. "Many sand verbena and brown-eyed primrose plants already have sprouted," he wrote, "and the chuperosa and desert lavender are blooming nicely."

Samuel A. King, superintendent of Joshua Tree National Monument, guessed it would be a late spring in the Twentynine Palms, California, area. "The daytime temperature has been so exceedingly warm this month," he wrote in December, "that it probably will be a late winter this year. If the rainfall is sufficient during the months of January and February, we probably will have a late spring and an abundance of wildflowers."

Below the monument area, in Twentynine Palms Valley, there has been less rain, and by the end of December there was no indication of spring bloom. However, along the Twentynine Palms highway from U. S. 99 the burro-fat has been blooming occasionally since summer, from Morongo Canyon almost to Sheephole Pass.

Although good fall rains fell in Antelope Valley, Jane S. Pinheiro of Quartz Hill wonders whether they will be enough, after so many drouth years, to bring a better-than-normal wildflower display. "Several varieties of lupine have sprouted and have several leaves," Mrs. Pinheiro wrote the day after Christmas, "and the ground is green with grass and myriads of tiny seedlings. There are few plants which blossom in this high desert area in February; manzanita and wild currant should be in bloom in the foothills as well as birds-eye or tri-color gilia, our first annuals, but no plants are visible yet."

"Very favorable conditions" were reported by Superintendent Fred W.

Binnewies for Death Valley National Monument. Plants sprouted following a soaking rain early in November and ensuing light showers in December. Binnewies expects early flowering, with verbena, desert gold, fiddleneck, five-spot, apricot mallow, stickweed, phacelia and primrose blooming in February. Early growth of vegetation in the lower areas has coaxed a band of big-horn sheep down to the gravel fans near Badwater, and park naturalists are enjoying a rare opportunity to study the animals at close range.

A normal wildflower season is expected at Casa Grande National Monument near Coolidge, Arizona, according to Superintendent A. T. Bicknell. Flowering generally does not begin in

the area until March, with numerous annuals due then.

Prospects for 1955 wildflowers in the Tucson area are not good, reports Superintendent John G. Lewis of Saguaro National Monument. The area had an unusually rainy summer, but there has been no precipitation since October. Fall was dry and warm. Lewis expects little or no flowering in February, but there may be a few ocotillo blossoms by the end of the month.

Acting Park Naturalist O. L. Wallis of Lake Mead National Recreation Area, Boulder City, Nevada, reports plants began sprouting immediately after December rains. "During February, the brittlebush should begin to bloom at the lower elevations, he writes, "especially along the shores of Lake Mojave. Willow Beach, Eldorado Canyon, Cottonwood Cove and Katherine (near Davis Dam) are good locations for these flowering shrubs. Few other plants can be expected to blossom so early."

Hard Rock Shorty of Death Valley



It was wintertime in Death Valley and two of the old prospectors were hovering around the pot-bellied stove in the Inferno store. Windy Webster and Pigsaw Bill, and when these two got together there was always an argument.

Having exhausted most of the other subjects, they finally got back to an old dispute: What is the fastest creature that lives in Death Valley.

Windy insisted it was the jackrabbit, and Pigsaw was defending the coyote.

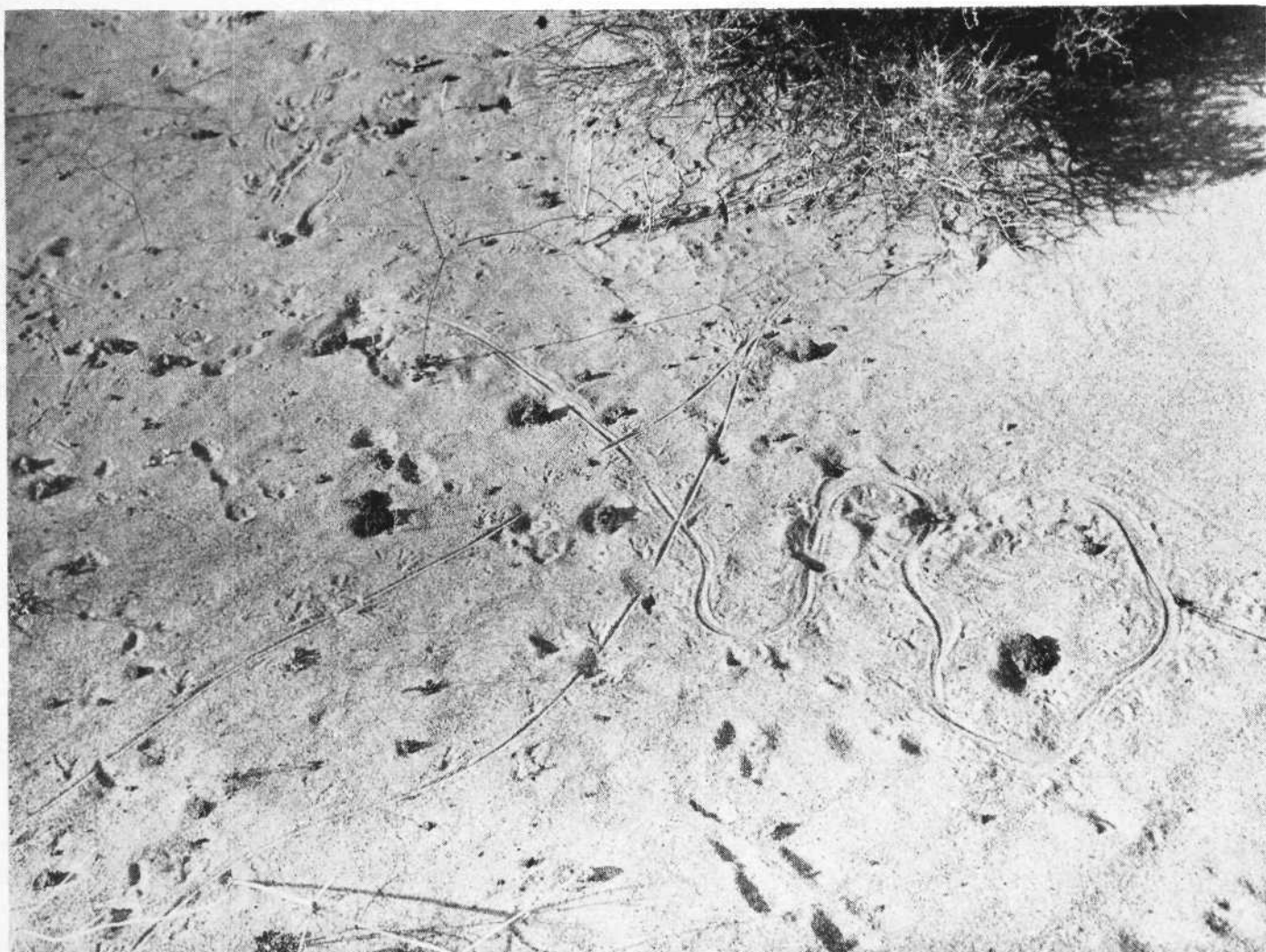
The dispute finally became so noisy that Hard Rock Shorty, half asleep on a pile of burlap bags, was aroused. "You're both wrong," he broke in.

"Fastest thing that ever came to Death Valley was an Injun—a young Shoshone, Badwater Bill we called him. Badwater could outrun a jackrabbit, an' the reason there ain't no coyotes in Death Valley is cause that Injun caught 'em all with his hands."

"But Badwater Bill liked fire-

water, an' he wuz always in trouble. Once in the boom days he got a job in the mines up at Rhyolite. One day he stole a horse an' started home. The constable took after 'im and jest before sundown caught up with him comin' through Daylight Pass. Injun wouldn't stop and so the law got out his Winchester an' started pumpin' slugs at 'im. But that didn't make no difference. The Injun jumped off his horse an' started runnin' — an' them bullets never caught up with him.

"But that constable and his posse finally caught up with 'im. Got dark an' the Injun wuz goin' too fast to see a big sand dune that loomed up right in front o' him. He tried to put on the brakes but it wuz too late. He skidded over that mound so fast an' his moccasins got so hot they melted the silica in that sand, an' fust thing yu know he had great globs of glass clingin' to his feet. When the posse came he wuz sittin' there tryin' to bust that glass off'n his feet."



DRAGONFLIES ON THE DESERT

By ROBERT A. NICHOLS

Mesilla Park, New Mexico
There were dragonflies on the desert
This afternoon in the sun,
Miles and miles from water,
But they seemed to be having fun.

They flitted among the yuccas
As though they were playing tag,
And rested when they were tired
On the ledges of lava slag.

They lent an air of mystery
To the cool, dry desert air,
As though produced by magic
Out of the sunlight there.

Example

By TANYA SOUTH

Thus to have lived, and thus to live,
With every purpose but to give,
And serve and help uplift the fallen,
And put your brain and heart and
soul in
Every phase of mortal life
That is for betterment, though strife
Or joy be its apportioned share,
As on you fare,
Is to have soared indeed the best
And most, on Life's full-chartered
quest,
That is innate, unvarnished goal
For growth of soul.

Desert Tracks

By SAXON WHITE TAYLOR
Grangeville, Idaho

Across the ochre dunes and rills
Small beasts of desert gray
Have passed and left the mark of quills
On warm sand where they lay.
They rest before they reach the hills,
Where greater beasts hold them at bay
Till noon skies blend to night's deep blue,
And grass that whispers their approach by
day
Is hushed at night with softened dew,
That tiny beasts may safely go their way.

SMOKE TREES

By GEORGIA JORDAN
San Diego, California

Pale fairies dance beneath the haunting,
silver moon,
Billowing, smoky phantoms in the desert
noon,
Their feet are firmly planted under drifting
sands,
And butterflies are resting in their wispy
hands.
Always dainty in eerie gowns of greenish
gray,
Slim arms uplifted greet every brilliant day.
Then June dips brush into blue and paints
the flower crowns
With plumes of indigo to top the smoke tree
gowns.
They grace the desert land and nod a
greeting gay,
Intriguing western travelers along that way.

Tracks near Pisgah Crater, California.
Photo by Harold Weight.

SOMEBODY'S HOME

By MRS. ELIZABETH MACDOUGALL
Santa Ana, California

A bleak little house on a western plain—
As seen from a rapidly moving train—
A target for pitiless wind and dust
And the marrow-chill of the blizzard's
thrust.
Defenseless and stark on the rim of the
world,
With never the green of a tree unfurled—
Yet, somebody calls it home.

The clothesline, whose banners salute the
breeze,
Proclaim a small child to be one of these;
While the garbs of a man and a woman
share
In attesting the trio of dwellers there,
Who challenge the desert's forbidding face
And founded a stronghold in its place—
Yes, somebody calls it home.

A refuge from toil when the day is done,
Where a man may delight his soul in the
sun
With the heart-warming love and the light-
some mirth
Of his two best-loved treasures on the earth;
Where the storms of the day—no matter
how wild—
Are calmed by the smiles of his wife and
child—
Yes, somebody calls it home.

MINES and MINING

Marysville, Utah . . .

Arundel Mining Company has doubled to 16 men its underground mining crew exploring the new tunnel into Deer Trail Mountain six miles south of Marysville. General Manager E. R. Jones reports that a 75-ton car of silver lead-copper ore has been shipped to the American Smelter. The company plans extensive work in the ore area during the next three years. — *Pioche Record*

Moab, Utah . . .

North Standard, 38-year-old lead and zinc mining company of Salt Lake City, is completing plans to absorb the San Fernando Valley Uranium Company of Moab. San Fernando Valley holds more than 2000 acres of uranium mining property on the Colorado Plateau, including the Uravan, Moab and Paradox mining districts. John H. Mason, North Standard's president, was confident that the merger would be consummated at the annual stockholders' meeting in December. — *Mining Record*.

Casa Grande, Arizona . . .

Paul Hinshaw, who has prospected this area for more than 20 years, finally hit bonanza in a group of rich copper deposits 43 miles southwest of Casa Grande. He is reported to have sold 54 claims to the Pinal Copper and Uranium Corporation, which incorporated in November with an authorized capitalization of \$30,000,000. Edward Hopkins, president of the new corporation, announced that the ore body is believed to contain 1,800,000 tons of copper. It has been described as the biggest strike in the state since the New Cornelia Mine at Ajo. — *Casa Grande Dispatch*.

Washington, D. C. . . .

A \$9,000,000,000 stockpile goal has been set by the government—\$2,000,000,000 more than planned by the defense department and other federal agencies. The additional \$2,000,000,000 is to be spent for a variety of minerals and metals, both domestic and foreign. The purchase will be part of the long-term stockpiling program announced by President Eisenhower last March, which calls for stockpiling critical commodities in sufficient quantities to meet military and atomic energy needs, industrial requirements, civilian needs and essential exports over a period of three years. — *Pioche Record*

Tonopah, Nevada . . .

Uranium bearing ore has been discovered on the dump of an old and profitable gold mine 35 miles east of Tonopah. The vein, opened to a depth of 520 feet and exposed for more than 3000 feet by open cut and exploration shaft, is over four feet wide its exposed length and depth. There are indications of at least two parallel veins of comparable size. Promising uranium strikes also have been made on other old gold mining properties in the district. — *Pioche Record*.

Silver City, Nevada . . .

Favorable assay reports were returned on the first major uranium strike on the slopes of the foothills north of Mound House and have started a minor rush in the area. The strike was made by veteran prospector Clyde Garrett of Silver City. His claims are located just outside of Storey County in the northwest corner of Lyon County, southwest of Silver City. Exploration work is continuing, and all samples appear to be of good commercial quality. — *Territorial Enterprise*.

Reno, Nevada . . .

An expansion program which will add more than 100 men to a present crew of 40 is reported planned by Tri-State Metals, Inc., of Mesquite, Nevada. Tri-State recently opened a tungsten vein simultaneously at the 90- and 600-foot levels and is said to have blocked out almost \$5,000,000 worth of ore ranging from one to 85 percent scheelite. The property, discovered 25 years ago by Ernest Walker, is located in a remote mountain pass 15 miles west of Mesquite. — *Territorial Enterprise*.

Grand Junction, Colorado . . .

The Grand Junction operations office of the Atomic Energy Commission whose job it is to procure raw basic ingredients of the A-bomb, reports its problem is to find sufficient mills to process the phenomenal amounts of vital uranium ore now pouring out of America's mines. Mining of uranium has far exceeded expectations, the spokesman said, with the result that the first step in preparing it for its ultimate use, the milling process, has not been able to keep pace with the production. — *Salt Lake Tribune*

Panaca, Nevada . . .

Office of the Lincoln County recorder was flooded with filings after Lester Lee reported his high grade uranium strike in the hills east of Panaca. Lee's claims are located just north of State Highway 25, the Panaca-Modena road, near the Panaca cemetery. The deposits are said to be in the form of veins in sandstone formation. Unofficial reports indicate that ore samples tested two percent uranium. — *Caliente Herald*.

San Francisco, California . . .

A new reprinting of a prospectors' and miners' guide to California mining laws has been released by the California State Division of Mines. The pamphlet, *Legal Guide for California Prospectors and Miners*, was compiled by the Bureau's L. A. Norman, Jr. It contains information of a general nature for those wishing to establish rights to a new mineral discovery or to maintain rights on an already established claim, discussing the manner of locating and holding mineral claims, mineral patents, state and federal lands, water rights and water pollution regulations, safety regulations and gold-buying rules. The book, first issued as a supplement to the July, 1952 issue of *Mineral Information Service*, contains 78 pages and 3 figures. Copies may be had at 25 cents each (26 cents in California) from The California Division of Mines, Ferry Building, San Francisco 11, California.

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ARIZONA

Apache Junction Homesteads . . .

PHOENIX — The Bureau of Land Management has opened 1200 acres near Apache Junction for public filing for two and one-half acre homesites. E. T. Rowland, supervisor for the bureau in Arizona, said the 480 individual homesites are located near the junction, about 35 miles east of Phoenix. It is the first time the government has opened lands for filing for such small homesites; most openings are for five-acre parcels. Rowland said the action might mean the beginning of a new policy for land settlement.

Desalting Unit Ready . . .

PHOENIX — Equipment to be used in water desalting experiments near Buckeye is being installed at the test site, one-half mile south of U. S. Highway 80 and 20 miles west of Phoenix. The equipment separates salt from brackish waters by electronic membranes. Orme Lewis, assistant secretary of the Interior, explained that this method has a definite advantage over an evaporative system already developed by which a certain amount of energy must be expended to evaporate all the water. The Buckeye project, he said, would require just enough energy to remove salt until the water is usable. The unit is capable of desalting 1500 to 2000 gallons an hour.—*Phoenix Gazette*.

Green Dye for Desert Grass . . .

CHANDLER — Bermuda grass lawns in Arizona may be the greenest in the country if a suggestion to members of the Arizona Association of Nurserymen is followed. Art Snyder of Phoenix, president of the Arizona Association of Golf Course Superintendents, said green dye would be an answer to the problem of year-round grass in Arizona. It could be sprayed on lawns and golf courses after the Bermuda grass dies.—*Yuma Morning Sun*.

Museum Takes Recess . . .

FLAGSTAFF — Ending one of its most successful years, the Museum of Northern Arizona closed doors December 1 for its annual winter recess. The museum will reopen March 5. Malcolm F. Farmer, who last year came to the museum as assistant director, plans extensive rearrangements of gallery exhibitions during the winter months. Revision of panels and cases in the anthropology and geology galleries and a completely new natural history gallery will tell a more complete story of northern Arizona when

finished. A new seminar hall will be built next spring, Farmer said, to meet the needs of larger groups at the many scientific conferences held during the summer session at the Research Center.

"Many visitors to the museum are surprised to learn that the institution receives no federal or state aid," Farmer said. He pointed out that it is owned and operated by the Northern Arizona Society of Science and Art, and the funds for its continued growth and activity come from members of the society and the many friends of the institution.—*Coconino Sun*

CALIFORNIA

Plan for Emergency . . .

CALEXICO — Eighty thousand residents of the San Diego area would be routed to and through the Imperial Valley in the event an enemy attack on the coast city made evacuation of the population necessary, Colonel Lara P. Good of the National Guard Reserve told members of the Imperial Valley guard unit. In an emergency, the reserve would assist local civilian defense and peace officer groups, Col. Good explained.—*Calexico Chronicle*

Trips to Indian Canyons . . .

PALM SPRINGS — Organized groups wishing to visit the Agua Caliente Indians' Palm and Andreas canyons must make advance arrangements with the Indian Agency in Palm Springs

PRIZE ANNOUNCEMENT For True Desert Experiences

To bring to *Desert Magazine* readers more stories in the popular Life-on-the-Desert series, *Desert's* editors announce a new writing contest for 1955.

You do not have to be a professional writer to enter this contest. The only requirement is that the story submitted be a true desert experience, either of your own or one with which you are personally familiar.

For the best story of from 1200 to 1500 words submitted by March 20, an award of \$25.00 will be made. Each other contestant whose manuscript is accepted for publication will receive a \$15.00 award. Entries will be judged on the basis of story content and writing style.

The story must relate a true experience, preferably of the writer—no yarns or tall tales or heresay will qualify. The experience may involve danger while lost on the desert, an adventure while living or traveling on the desert or in Indian country, while homesteading, rockhunting or prospecting. It may be the meeting of an unusual character, revealing a phase of human nature or a distinct way of life. It may recall "good old days" in the mining camps or frontier towns. Perhaps it will contain a lesson on desert wildlife or plants or desert living.

The contest is open to amateur and professional writers alike, but those who plan to submit manuscripts should carefully observe the following rules:

All manuscripts must be typewritten, double-spaced, on one side of the page only.

Entries should be addressed to Editor, *Desert Magazine*, Palm Desert, California, and must reach this office by March 20, 1955, to qualify for the awards.

If good sharp 5x7 or larger pictures are available, an extra \$3.00 will be paid for each photograph accepted. Pictures are not essential, however.

Writers must be prepared to supply confirmation as to the authenticity of their stories. Only true experiences are wanted.

All stories must be essentially of the desert, and the scene is limited to Arizona, Nevada, Utah, New Mexico and the desert area of California.

True names of those involved must be given, although with the knowledge of the judges, fictitious names may be substituted in special cases where there is reflection on personal character.

If the story has appeared previously in print, this fact and the time and name of the medium in which it appeared should be given.

All readers of *Desert Magazine* are invited to submit manuscripts. Unaccepted manuscripts will be returned if accompanied by return postage.

THE DESERT TRADING POST

Classified Advertising in This Section Costs 10c a Word, \$1.50 Minimum Per Issue

INDIAN GOODS

6 PERFECT ANCIENT FLINT arrowheads \$2.00. Fine double bladed tomahawk \$3.00. Grooved granite war club \$2.00. Perfect peace pipe \$5.00. 6 fine bird arrows \$2.00. 2 flint knives \$1.00. 6" to 7" perfect spearhead \$7.00. All offers \$20.00. List Free. Lear's, Glenwood, Arkansas.

EARRINGS—Made from beautiful obsidian and agate gem arrowpoints—\$5.00 a pair; Cuff links cast in bronze from original Indian Maskets—\$3.00 a pair; Arrowhead tie clasps—\$2.50; Bronze pipe tomahawk with carved wood handle—\$12.00. C. E. Wray, West Rush, New York.

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CAFE, SERVICE STATION and five rentals for sale. Fully equipped (living quarters). Going business. Also want partner to promote new town. Real opportunity. Come and stop with us. Ocotillo Wells Inn, Highway 78, San Diego County; or write Box 86, Del Mar, California.

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WANTED: Desert Week-end cabin or house on 1 to 5 acres, anywhere in Coachella Valley. Must be a bargain. Write Mr. A. Bishop, 227 E. Valley Blvd., Alhambra, California.

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(1) BEAUTIFUL, YOUNG, producing 3 acre date garden located in center of Coachella Valley on main road. Owner will maintain for 5 years in return for crop. Ideal for non-resident desert lover who desires to build home on small ranch but avoid responsibilities. (2) 20 acre Horse Ranch with nice improvements, \$35,000. (3) Level, 3 acres—piped, all utilities, \$2000 cash. Write Ronald L. Johnson, Thermal, California.

NEAR STATE PARK—10 miles Southeast—on edge of Dos Palms area. 80 acres fertile, unimproved just \$20 per acre. Little as \$75 down, \$26 per month. Act at once! Pon & Co., Box 546-DM, Azusa, California.

BUSINESS OPPORTUNITIES

A RED HOT DEAL for somebody! Well known rock collector hobbyist about to retire on a pension is looking for a connection. If you have a going business in the rock hobby somewhere in the winter resort area, and want something to really stop the traffic this is it. Have about \$4000 worth of large sawing and polishing equipment; enough finished specimens to fill a small museum. Very little money involved here. What am I offered? George Smith, Box 125, Fresno, California.

CLOSING OUT: Yes, someone with a little capital can buy a fine going business very reasonably. Customers in nearly every State. Meanwhile will sell retail at discount. Great opportunity for someone who likes Indian merchandising business. Daniels Indian Trading Post, 16299 Foothill (Highway 66), Fontana, Calif.

IMPORT-EXPORT! Opportunity profitable, world-wide, mail-order business from home, without capital, or travel abroad. Established World Trader ships instructions for no-risk examination. Experience unnecessary. Free details. Mellinger, E981, Los Angeles, 24, California.

MISCELLANEOUS

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

WILDERNESS TRAIL TRIPS, hiking and riding. Havasu Canyon, "Gem of Grand Canyon"—3 and 6 days, March into May, from \$50. John Muir Trail, California Sierra Nevada, July into September, from \$8 per day. Write Wampler Trail Trips, 1511 Shattuck Ave., Berkeley 9, Calif.

WANT TO ECONOMIZE? Send \$1 for big wholesale catalog, nationally advertised merchandise, to J. Fogle, Box 1004D, Kermit, Texas. Dollar refunded first order.

NAVAJO RUG REPAIRING — Re-woven with Navajo yarn. For information write, Arizona Weavers, 1702 West Earll Drive, Phoenix, Arizona.

URANIUM CLAIMS with merit, wanted for development. Will give liberal override. Can furnish bank reference. Give detailed description of property in first letter. Rex R. Moore, 2904 Liberty Bank Bldg., Oklahoma City, Oklahoma.

STEREO 3D SLIDES—Gorgeous Colorado mountain and Utah desert scenes. Realist size original Kodachromes. Sample selection four of my best stereo slides \$2.00. List free. Will C. Minor, Fruita, Colo.

SILVERY DESERT HOLLY PLANTS: One dollars each postpaid. Greasewood Greenhouses, Lenwood, Barstow, Calif.

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

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NEW CALIFORNIA State Topographic Map 64 x 90" \$2.50. Lost mines of 10 Southwestern states, with map \$1.75. Sectionized County maps: San Bernardino, Riverside \$1.00 each, Inyo, Mono, Kern, Los Angeles 75c each, Imperial, San Diego 50c each. New series of Nevada County maps \$1.00 each. Joshua Tree-Twenty-nine Palms area \$1.56. Township blanks, all sizes. Lode or Placer location notice forms 5c each. Topographical maps in California, Nevada, Utah, Arizona and all other Western states. Atomic Energy Commission Airborne Anomaly, Uranium Location maps. Westwide Maps Co., 114½ W. Third St., Los Angeles, California.

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FOR SALE—Five civilian Jeep wheels. Will replace any 16 inch military "Battle Wheel" type, \$15.00. Shell Station, 227 Marine Ave., Balboa Island, California.

or they will be required to pay individually at the toll gate. "The canyons are one of the major sources of income to cover administrative expenses of the tribe," Agent Ned Mitchell explained. "Rates are reasonable, compared to those charged for admission to other scenic wonders—50 cents for adults, 25 cents for teenagers and no charge for children under 12 years of age." No exceptions will be made to the ruling which prohibits overnight camping and fires in canyon areas, he added. —*Desert Sun*

Indians Want Freedom . . .

BISHOP — Indians of California's Owens Valley favor termination of federal control over lands being held in trusteeship for them by the government. But they approve with reservations. The Indians want a government lien against their lands to be cancelled. The exact amount of the lien has not been established, figures ranging from \$116,000 to \$200,000. It was placed after the government paid for construction and improvement of Indian lands in the mid-Thirties. The tribesmen also want their reservation roads and domestic and irrigation lines extended and repaired before the withdrawal of the Indian Bureau from California and termination of federal supervision over their lands. —*Inyo Independent*

"Living Fossils" Found . . .

DEATH VALLEY — "Living insect fossils" from the Ice Age have been found in a remote pond in Death Valley by entomologists from the University of California at Los Angeles. Two types of prehistoric insects have been discovered. One is of a group believed to be midway in the evolution between gnats and true mosquitoes. The other is a true mosquito which feeds on frogs. Both populations of insects apparently have been isolated in the desert area since the end of the last glacial period, 11,000 years ago. —*Los Angeles Times*

Caverns to Become Park . . .

ESSEX — Authorization to purchase Mitchell's Caverns and adjoining property near Essex has been granted by the California Park Commission. Eighty acres of the property, owned by the late J. E. Mitchell, are to be bought for \$50,000, with \$25,000 coming from the state and \$25,000 from San Bernardino County. —*Desert Star*

Urge Entry at Jacumba . . .

JACUMBA — An international point of entry at Jacumba would facilitate mining of mineral deposits, especially tungsten and uranium, the International Borders Cities Commission be-

lieves. According to Franklin Holland, commission representative and Pine Valley mining consultant, the proposed gateway would allow mining and processing of minerals at Jacumba, increase population on the Mexican side of the border and lessen the requirements for immigration patrol officers, as Mexicans presently crossing illegally would be encouraged to cross at the point of entry. The new port can only be established on presidential order. —*Imperial Valley Weekly*

NEVADA

Recreation at Lahontan . . .

FALLON — A long range Churchill Chamber of Commerce plan for recreational improvements at Lahontan Dam has been favorably received by the Churchill Board of County Commissioners. The program would include installation of sanitary facilities, picnic tables and refuse boxes, cabling off of swimming areas to protect bathers from boats, construction of bath houses and installation of electric lights at picnic areas. The Lahontan Boat Club has done considerable dredging and is installing a new steel dock. — *Fallon Standard*

Range Condition Serious . . .

GOLDFIELD — Nevada's range lands have been in such poor condition for so long that it is difficult for appreciable improvement to occur from month to month, a U. S. Department of Agriculture bulletin reports. Much supplemental feeding of hay, cake and other feeds is being done on the open range, and in some winter range areas, stock water must be hauled. Cattle condition the first of December was 70 percent, the lowest ever reported for any month in any year on record since monthly estimates of cattle conditions were started in 1926. Many ranchers have cut herds drastically. Condition of Nevada sheep was 75 percent, also the lowest on record since 1926, and supplemental feeding of hay and concentrates is necessary to keep them on the range. —*Goldfield News*

Luxury Car Retired . . .

VIRGINIA CITY — One more chapter in the story of the railroads of the Old West ended when the last of the rococo private cars, which in bonanza years rolled over Nevada's Virginia & Truckee Railroad, was retired by its owners from active service. An ornate souvenir of an age of opulent luxury, the *Gold Coast*, property of Charles Clegg and Lucius Beebe of Virginia City, will become part of the collection of the West Coast Chapter of the Railway and Locomotive Historical Society



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of Boston. The *Gold Coast* was built in 1906 and later redecorated to duplicate the private car *Stanford*, Governor Leland Stanford's car destroyed by fire many years ago. In addition to master staterooms with shower baths and all modern conveniences, the car seats eight at table, has servant's quarters for two, and in its drawing-observation salon has a green marble fireplace, crystal chandeliers, Turkish carpets and furniture of Victorian design.—*Territorial Enterprise*

"Save the Parks" Plan . . .

CARSON CITY—Citing instances of looting and destruction of Nevada's historical and archeological sites, State Park Chairman Thomas W. Miller urged approval of a \$50,000 two-year plan to rejuvenate the state park program. "It is an A-1 business investment," he said, maintaining that a properly operated state park system would make it attractive for visitors to remain longer in Nevada. The proposed appropriation would include maintenance of Overton State Park Museum near the Valley of Fire. —*Pioche Record*

NEW MEXICO

Dinosaur Mine . . .

GRANTS — Merle Burns and the Farris Brothers are engaged in an unusual mining operation on the Andrews ranch north of Prewitt. They are mining uranium ore from the inside of a huge dinosaur skeleton, the second one found in the mining operations. —*Grants Beacon*

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More Drouth Predicted . . .

SANTA FE—Although hoping for the best, New Mexico's water experts fear that another year of drouth may face the state. Snow has not fallen in anything like normal amounts, and when it does, most of its moisture will be soaked up by the dry earth. Water stored in state reservoirs is even less than at the end of dry 1953, and lack of rain and snow is causing increased wind damage to dry fields. "Drouth is a cumulative thing," explained George von Eschen, state climatologist for the U. S. Weather Bureau. "One or two dry years can be made up by one or two wet years. But New Mexico has had only one year of normal precipitation since 1944. Even if this year miraculously became normal, ten years of drouth and a year of normal rainfall just won't balance the books." —*New Mexican*

"Red Hats" Honored . . .

ALAMOGORDO — The Apache "Red Hats" of Mescalero have been presented the Interior Department's highest honor for their valor as a forest fire fighting unit. Ward Head, area supervisor of Indian Affairs from Gallup, made the presentation of the Meritorious Service Award on behalf of the Secretary of Interior. Red Hat units were called off the reservation nine times during the 1954 fire season to meet major emergencies in the West. A specially picked crew of Red Hats was on a six-weeks continuous tour of stand-by duty in California national forests during the worst part of the fire season. In addition, the Indians performed fire suppression and control work on their own reservation.—*Alamogordo News*

Whose Water for Indians? . . .

SANTA FE—Should Indians using Rio Grande water take it from New Mexico's or Texas' share? Texas argues that rights of Indians are protected by law and by contract and cannot be affected by additional release of water for use in Texas. New Mexico maintains that if Indian water must come from its share, there would be little left for other residents. In fact, the state claims, Texas owes New Mexico water for the past 11 years. The U.S. Supreme Court is hearing the suit.—*New Mexican*

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Archeologist Honored . . .

WASHINGTON—The Department of Interior's Distinguished Service award was bestowed upon Dr. Jesse L. Nusbaum, Santa Fe archeologist, at a recent presentation ceremony. Dr. Nusbaum's service with the National Park Service has been uninterrupted since 1921, except for a five-year leave of absence during which he organized the Laboratory of Anthropology at Santa Fe.—*New Mexican*

Urges Water Project . . .

ELEPHANT BUTTE DAM — Lt. Colonel M. A. Palen, retired, advocates bringing water from the Missouri River to Elephant Butte Dam by way of pipe lines and pumping stations via Raton Pass and then into three flood control dams, the Republic, Delaware and Blue River or Tuttle Creek dams in Kansas. Congress authorized further construction on these dams but did not appropriate funds for the work. The water would have to be piped 425 miles to an elevation of 4800 feet above sea level to get over Raton pass. Elephant Butte dam is 4700 feet above sea level or 3900 feet above the intake on the Missouri River. The aqueduct west of the Great Divide can no doubt be engineered so that water would flow by gravity into Elephant Butte dam, a distance of 225 miles and the flow used as power.—*Las Cruces Citizen*

UTAH

Largest Chinle Dinosaurs . . .

KANAB — Largest dinosaur tracks ever found in the Chinle formation were inspected recently by Arthur F. Bruhn and Donald C. Cameron, geologists on the Dixie College faculty.

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PALM DESERT, CALIFORNIA

Numerous clear tracks enabled the scientists to measure the size of the prehistoric reptile's foot, 16-17 inches, and to determine the length of its stride, about five and one-half feet. Claw marks indicate the beast was a carnivore. According to Bruhn and Cameron, the discovery of tracks this size in Chinle formation completely disrupts former concepts of Triassic dinosaurs. Animals this large previously were considered part of the earlier Jurassic age. — *Washington County News*.

To Educate Solons . . .

SALT LAKE CITY — Officials of four states gathered here in December to study a new Upper Colorado River Storage bill and to make plans for a \$100,000 "education" program intended to help it pass the 84th Congress. The officials—from Utah, Colorado, Wyoming and New Mexico—comprise the Upper Colorado River Commission, which wants to see Congress authorize the proposed billion-dollar Upper Colorado project. A bill to authorize the project failed to make it through the last congress, although committees of both houses recommended its passage.—*Salt Lake Tribune*



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PALM DESERT, CALIFORNIA

Utah, Government Swap . . .

WASHINGTON — Exchange of a large tract of land owned by the state of Utah for comparable federal lands has been approved by the U.S. Department of Interior. Edward Woosley, director of the Bureau of Land Management, announced the transfer of 46,417 acres of school section lands on the Navajo Indian reservation near Monument Valley for 45,822 acres of federal lands lying in an almost solid block east of Green River and on both sides of U.S. Highway 6-50. The transfer is expected to facilitate the orderly use of Utah's school sections and result in revenue for the state which now is impossible because existing state lands are scattered throughout the reservation and not available for leasing. The lands being relinquished by Utah are in what is known as the Piute Strip and Aneth Extension. As far back as 1933 the state offered to exchange the land for a more consolidated tract elsewhere in the state. — *Salt Lake Tribune*.

• • •

States Compromise on River . . .

SALT LAKE CITY — Tentative compromise on water storage on the upper Bear River has been reached by Utah, Idaho and Wyoming. The suggested compromise for storage above Bear Lake is 35,500 acre feet for Utah and Wyoming, 1000 acre feet for the Thomas Fork section of Idaho. For more than five years the upper (Wyoming and Utah's Rich County) and the lower (Idaho and Utah's Cache and Box Elder counties) have bargained the point, gradually drawing nearer from a starting point almost 80,000 acre feet apart. — *Salt Lake Tribune*.

ANSWERS TO DESERT QUIZ

Questions are on page 23

- 1—Tombstone.
- 2—Mexico.
- 3—Saguaro cactus.
- 4—Let some air out of the tires.
- 5—Hopis.
- 6—Blue.
- 7—Salt River Valley of Arizona.
- 8—Never found.
- 9—Arizona.
- 10—Manganese.
- 11—Climbing the tree and picking the fruit from its stems.
- 12—Mining.
- 13—Las Vegas.
- 14—In sandy arroyos.
- 15—Weaving baskets.
- 16—Farming.
- 17—Rocks with mud mortar.
- 18—Natural tanks of water.
- 19—Yellow.
- 20—Colorado River.

GEMS and MINERALS

FEBRUARY SHOW IN MONTEREY

Monterey Bay Mineral Society will hold its annual gem and mineral show February 26 and 27 in the Y.M.C.A. building on San Luis Street in Salinas, California. Hours will be from noon until 10 p.m. Saturday, noon to 6 p.m. Sunday.

A return trip to the Trilby Wash area of Arizona was made by the Mineralogical Society of Arizona in November. Within a radius of one-half to three-quarters of a mile from where the road up Trilby Wash leaves the wash, around the headwaters of the Trilby and San Domingo washes and over into the Buckhorn drainage there are old prospects of gold veins and lead-silver deposits which members found to yield occasional discoveries of unusual secondary lead minerals and copper.

Fifteen tables of mineral specimens and cutting material were displayed at the November auction of Chicago Rocks and Minerals Society. Offerings ranged from tomahawks to opal. The sale netted \$250 for the club treasury.

November program of Delters Gem and Mineral Society, Downey, California, featured James Underwood's illustrated travelogue on Mexico. Underwood visited several large Mexican mines, showing colored slides of mining activities and displaying sample specimens of silver, apatite and other minerals. November field trips were to Tick Canyon for howlite and to Stonewall Pass for petrified wood.

Reverend Lawrence E. Murphy of Glenwood, Iowa, presented the December program of Nebraska Mineral and Gem Club, Omaha. He discussed alabaster carvings, illustrating his remarks with examples of his own work. Rev. Mr. Murphy's carvings generally are of religious subjects which are beautifully depicted in the translucent stone.

SOUTHWEST FEDERATION PLANS MAY CONVENTION

Gulf Coast Gem and Mineral Society will be host this year for the annual convention and show of the Southwest Federation of Mineral Societies. Dates are May 6 to 8. The meeting will be held in the Exposition Building on Shoreline Drive in Corpus Christi, Texas. The federation includes societies from Texas, Arkansas, Oklahoma and New Mexico.

June Riley uncovered many interesting facts about birthstones and shared them with other members of Fresno Gem and Mineral Society at a meeting in Fresno, California. She named and described each month's gem or gems and told something of the history and superstitions connected with them.

Thirty-four members of the Los Angeles Mineralogical Society visited Tick Canyon on a fall field trip. They found howlite, natrolite, ulexite, agate and drusy quartz.

Petrified wood and rhyolite were gathered on a Humboldt Gem and Mineral Society field trip to Nevada from Eureka, California.

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CLEARANCE SALE — My entire collection of genuine, rough faceted stones and opals. Everything must go at Bargain Prices! J. C. Bosley, 5761 Zelzah St., Phone DI 2-2523, Encino, California.

Nebraska Mineral and Gem Club of Omaha rented colored slides for its monthly "photo quizzes" until Art Henry, a former photographer himself, suggested that the club make its own slides, using members' specimens as subjects.

Henry described the project in a recent issue of *Nebraska Rockhounds' Rear Trunk*, the club's bulletin.

Henry and Leon White first made a test run of 20 pictures. Although a few exposures were too dark, the group as a whole was good. They were shown to the program committee, and it was decided to try another set, at club expense. The second 20 exposures were excellent.

"We used standard good quality cameras of the 828 and 35 mm. size," Henry explained to *Rear Trunk* readers. "A close-up attachment was necessary to get a full projection of the specimen on the screen. Two lenses were used for this purpose, a No. 2 close-up attachment and a No. 3, the latter making the larger picture. These lenses can be purchased, together with an adapter ring, for a little over \$4.00. The adapter can also be used to hold light filters for black and white photography.

"Two No. 1 photo flood bulbs were used as the light source, one on each side and at a distance of about 20 inches. Common incandescent light bulbs cannot be used with color film, as the light contains too much red.

"Colored construction paper was used for backgrounds. One package contains many hues of heavy, dull-finished sheets. The gem and mineral specimens show up better if displayed against their color complements.

"Exposure was determined with a photo electric meter. In general, the photos were taken at 1/10 second at f. 11; darker specimens demanded 1/5 second. One specimen of amethyst needed 1/2 second. We used three different meters and checked one against the other before setting the camera."

GERMAN GEMOLOGISTS MAKE IMITATION LAPIS LAZULI

A type of synthetic spinel, made by a new process, is being manufactured in Idar-Oberstein, Germany, to imitate lapis lazuli. Ed Bohe reports in the December issue of San Diego Lapidary Society's bulletin, *Shop Notes and News*. Since one of the simple tests for genuine lapis is the brassy looking little pyrite specks scattered in it, small specks of pure gold are added to the imitation. Where "fools gold" (pyrite) is a sign of the genuine stone, real gold betrays the imitation.

Imitation lapis lazuli is an easy stone for the gemologist to identify. Nearly all properties of the real and the imitation are different. The new synthetic has a hardness of 8; true lapis lazuli is from 5 to 5½. Specific gravity of the synthetic stone is from 3.5 to 3.52, of the real lapis from 2.4 to 2.95. The refractive index of the synthetic is much higher. Under a Chelsea filter, synthetic lapis will assume a brilliant red appearance, which alone is a true simple test. The texture is also granular on a broken surface.

AGATE AFTER BARITE Nodules, \$1.00 per lb. in 5 lb. lots. Ask for list. Jack the Rock Hound, Carbondale, Colorado.

Societies Elect New Officers

New officers were elected by the San Fernando Valley, California, Mineral and Gem Society at the November meeting. They are Charles McCollough, president; Henry Hasbach, vice-president; Evelyn Nelson, secretary, and Sumner Smith, Sr., treasurer.

Newly-elected president of Los Angeles Mineralogical Society, Claude Cherry, took office at the January meeting. Also seated were Edith Donner, first vice-president; Wade Barker, 2nd vice-president; Virginia Davis, secretary, and Helen Mathiesen, treasurer. Fehrn Schwartz will edit the bulletin and Rilla Barker will serve as business manager.

After voting to affiliate with the Georgia Academy of Science, members of the Georgia Mineral Society elected the following officers for 1955: Dr. Frank A. Daniel, president; J. Roy Chapman, vice-president and recording secretary; Erna Mason, corresponding secretary; S. P. Cronheim, treasurer; Dr. Daniel, historian, and Professor Lane Mitchell, curator.

Charles C. Parsons will direct activities of Glendale Lapidary and Gem Society, California, in 1955. Elected to assist President Parsons were Leo Molitor, first vice-president; E. G. Rath, second vice-president; Muriel Rath, secretary; Ellis Roth, treasurer, and Walter Kohn, publicity. Their efforts already are directed to the club's annual show which will be held May 14 and 15 at the Glendale Civic Auditorium.

Final meeting of 1954 was election day for Tucson Gem and Mineral Society. Members named Robert Fordham, president; Joseph Normart, vice-president; Mrs. Lena Marvin, secretary, and Mrs. Irene Barber, treasurer.

Kirby Olds is new president of the Cheyenne, Wyoming, Mineral and Gem Society. Other officers for 1955 are Edward Kopsa, vice-president; Mrs. Adam Wensky, recording secretary-treasurer; Mrs. R. J. Laughlin, corresponding secretary.

Results of recent elections held by San Diego Lapidary Society showed Edward J. Soukup was new president; Edward Roper, first vice-president; Richard Jeffers, second vice-president; Mrs. Blanche Wright, secretary; Henry Weir, treasurer, and Mrs. Elsie Tucker, historian.

New officers of Clark County Gem Collectors, Las Vegas, Nevada, were installed at the Christmas meeting. They are Harry Fleharty, president; Lon Foster, vice-president; Charles Labbe, re-elected treasurer; Mrs. Paul Richards, secretary; J. H. Nicolaides, trustee, and Paul Mercer, publicity chairman.

Election and installation of officers was held at the December meeting of Humboldt Gem and Mineral Society, Eureka, California. Herbert Glines is new president; Mattie Ross, vice-president; Phyllis Benner, secretary-treasurer, and Olive Davis, historian.

After the December meeting, the American Prospectors Club, Los Angeles, called a club recess until spring. Too many members were taking advantage of cool weather to prospect desert areas to permit normal club activity.

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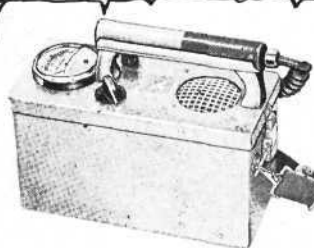
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"Unusual Properties of Gems and Gem Material" was Bob Deidrick's topic when he appeared as speaker on an evening program of Contra Costa Mineral and Gem Society, California. Roy Hawley displayed his gem collection to illustrate Deidrick's talk.

"If you're looking for agates and jaspers in Arizona," H. N. Wolsott of the U. S. Geological Survey told members of the Mineralogical Society of Arizona, "you will find them in the Tertiary lavas and not in those of later origin." He gave a geological history of the state at the November meeting. Afterward, Everett Berry of Massachusetts showed colored slides of eastern mines.

Jasper of blue, black and pink was found by members of San Francisco Gem and Mineral Society on a field trip to Stone Canyon.

Ham dinner was enjoyed by members of Tacoma Agate Club, Tacoma, Washington, at its annual Christmas party.

Good weather, an active group and specimens of orange and sagenite opal made for a successful Compton Gem and Mineral Club outing to Hinkley, California.

Junior rockhounds of Chicago Rocks and Minerals Society became journalists in November as they worked with Editor Al Bernsohn to put out the December issue of the club bulletin, *Pick and Dop Stick*.

A field trip to Orogrande was enjoyed by members of Dona Ana County Rockhound Club, Mesilla Park, New Mexico. They dug for orthoclase crystals, found good garnet specimens and some chrysocolla and malachite in the mine dumps. Before returning home, they visited the Orogrande turquoise mines and picked up some good cutting material.

Not only lapidary material but white elephants of all types were invited in the December auction of Evansville Lapidary Society, Evansville, Indiana. "Any useful or decorative article that you no longer need and that someone else might want," explained the club's *Newsletter*. Cutting material, slabs, duplicate cabochons or faceted stones, finished jewelry, dop sticks, sandpaper, polishing laps, antique glass, picture frames, bottles, books, cakes, pies, cigars and cookies were promised. Grab bags were assembled for sale at 25 cents each.

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Contra Costa Mineral and Gem Society, California, joined Konocti Rock Club on a field trip to Lake County, California. They visited a fossil collecting area and found good hunting. Some members even found small crystals of Lake County diamonds in matrix in the stream bed.

Quarry Quips was the name suggestion submitted by Diane Marino, junior member of the Wichita Gem and Mineral Society, for the society's monthly bulletin. It has been adopted by the club and won for Diane top prize in the "Name the Bulletin" contest. She received a copy of the book, *Rocks and Their Stories*.

"Meteorites are the only objects coming to us from outer space. Samples of the universe outside the earth, they tell some of the story of the solar system. They apparently are related to the asteroids, those fragments of a former planet or planets." Dr. Ben Hur Wilson discussed meteorites at length in his speech "Messengers From Space" delivered before the Earth Science Club of Northern Illinois at its November meeting. Meteorites vary in size from one of 60 tons to very small pebbles, Dr. Wilson said. He suggested that all ESCONI members become familiar with the appearance and properties of meteorites and watch for them on field trips.

Earth Science Club of Northern Illinois now has two junior sections, one meeting in Downers Grove and the other in Riverside, Illinois. At the former group's November meeting, the *Life Magazine* film, "The Earth is Born" was shown. The Riverside juniors met for the first time in November and heard Senior Jay Farr discuss coral and Carl Hoffman outline the aims of the organization.

"Rockhunting 100 Years Ago" was John Hufford's title for the review of Dr. David G. Owen's 1852 geological survey of Wisconsin, Iowa and Minnesota, which appeared in the Nebraska Mineral and Gem Club bulletin, *Rear Trunk*. The document summarizes results of explorations made in the years 1848-50, primarily of the upper Mississippi and Lake Superior regions. It is interesting geologically as well as packed with tales of adventure. Engravings illustrate fossils collected on the expedition and maps chart the routes. The book is the property of Art Henry, society president.

Sound and color movies of the eruption of Mauna Loa and other Hawaiian volcanoes were shown at the November meeting of San Fernando Valley, California, Mineral and Gem Society.

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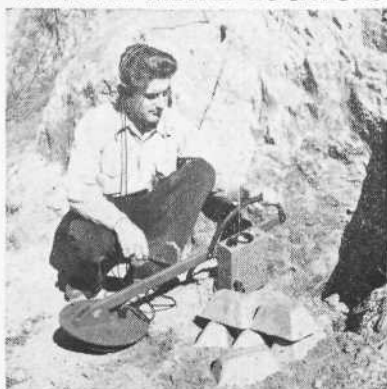
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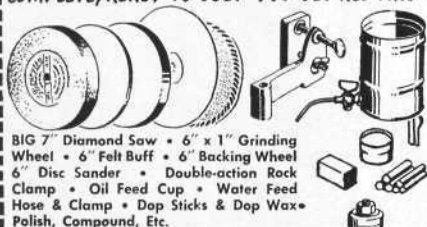
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An illustrated map monopolized editorial space in the December *Stone Age*, bulletin of Santa Fe Gem and Mineral Club, to guide members to the annual Christmas party.

Fourteenth annual Christmas party of Clark County, Nevada, Gem Collectors was held early in December at the Parks Museum. After turkey dinner, gifts of rough and polished gemstones were exchanged.

According to *The Braggin' Rock*, bulletin of Montebello Mineral and Lapidary Society, Montebello, California, the Thanksgiving field trip to Quartzsite, Arizona, was a successful one. Members returned with specimens of quartz crystals, limonite pseudomorphs after pyrite, hematite crystals, talc crystals, chalcophyrite, malachite, limonite, geodes, pastelite, barite, fluorite, galena, chalcedony roses and fire agate. "Each of the field trippers came home with at least one exceptional specimen," bulletin editors reported.

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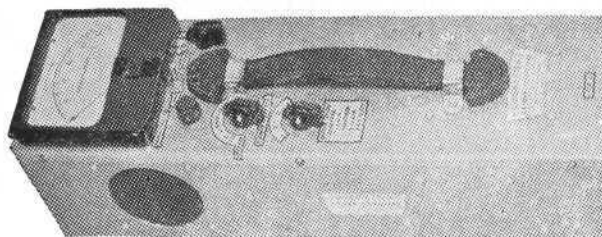
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In a letter addressed to rockhounds, Superintendent Fred Binnewies of Death Valley National Monument explained why they cannot collect specimens in the park area. "The mining laws have been extended to include Death Valley National Monument," he wrote, "so that legitimate mining is permitted, but under the provisions of the general rules and regulations, the collecting of relatively rare rock specimens cannot be allowed. This includes geodes, aragonite, crystals, and any form of fossil and archeological material."

Dona Ana County rockhound Marjorie Smith heard about an ancient Indian ground south and east of Escondido, New Mexico, and led a group of fellow members on an informal field trip there. The camp grounds clustered around an old lake bed 10 or 11 miles east of the highway. The group found broken pottery and a few arrowheads. Prize discovery was a turquoise pendant spotted by Miss Smith.

Hollywood Lapidary and Mineral Society's bulletin, *The Sphere*, is carrying a series of articles recalling the history of the group. Written by Club Historian Ruth Lie Van, the first story told of the society's inception in 1946.

Dr. George Green, professor at San Francisco City College, spent a sabbatical year traveling the full length of the Rocky Mountain range, from Mexico to Alaska. He told about his trip and showed colored photographs "taken with the cooperation of a pilot who enjoyed flying low" at the November meeting of the Gem and Mineral Society of San Mateo County, California. December meeting was the annual Christmas dinner.



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A gift exchange of mineral specimens and cutting material was one feature of the Christmas program and pot luck supper of Long Beach Mineral and Gem Society.

Bragging with a time limit was scheduled by the Indiana Geology and Gem Society for a recent meeting. Members brought their prize specimens and could talk about them for one minute each.

Mr. and Mrs. U. S. Blankenship conducted fellow members of Oklahoma Mineral and Gem Society on a field trip to Homestead, Oklahoma, where they visited a private location and found good specimens of pink selenite crystals. Doubly terminated, many were twinned and a few formed perfect crosses. Junior field trip was to a well-known gypsum site where the youngsters uncovered a surprise deposit of aragonite crystals.

December field trip itinerary for Wichita Gem and Mineral Society included stops at Santa Fe Lake for fossils, at Douglass for geodes and a search in the gravel pit and at Rock, Kansas, in Cowley County for quartz crystals. That month's program featured an illustrated talk by Brake Helfrich entitled "North of the Arctic Circle."

So popular a speaker was York T. Mandra last year when he appeared on a program of East Bay Mineral Society, Oakland, California, that he was invited back again. "Things Were Different in the Good Old Days" was Mandra's topic for the December meeting.

Dr. Frederick H. Pough, author of *Field Guide to Rocks and Minerals*, lectured on minerals and gems at the November general meeting of San Diego Mineral and Gem Society. The octahedron system was discussed by junior members at their section meeting.

An early Christmas came to Fallon Rock and Gem Club at the November meeting. Gifts of Hauser bed geodes, a variety of fossils, petrified woods and minerals from Washington, fluorescent autunite specimens, silver ores and specimen cards were distributed among members.

A new committee for "Sale, Trade and Exchange" has been established by the East Bay Mineral Society, Oakland, California. Cochairmen Mr. and Mrs. Dennis Patterson will handle equipment offered for sale or trade by members. Advertisements will be placed in the club bulletin and on the meeting bulletin board.

Dr. Joseph Murdoch, professor of geology at the University of California at Los Angeles, spoke on "Minerals from Far-off Lands" at the December meeting of the Mineralogical Society of Southern California, Pasadena. He illustrated his talk with colored slides. Members were asked to bring foreign specimens to display at the meeting.

"This is Minnesota," a color movie travelogue of the state, was shown at the November meeting of Minnesota Mineral Club.

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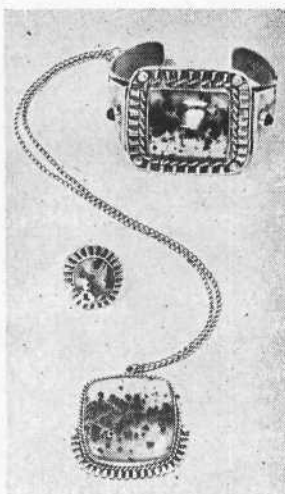
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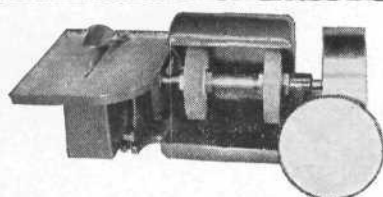
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El Paso rockhounds had a night to brag when they were invited to talk about their favorite specimens at a meeting of the El Paso, Texas, Mineral and Gem Society. Prize finds included arrowheads, jasper and agate slabs, Emil Frie's Minnesota pipe stone, R. B. Minton, Jr.'s meteorite fragment, Jess Unsell's Arizona thundereggs, Hugh Derham's perfect orthoclase Karlsbad twin crystal, Ford Wilson's fossilized pseudomorph of quartz after halite and Eleanor Gordon's "interesting slab of strange rock."

Elections were slated at the December dinner meeting of Wasatch Gem Society, Salt Lake City, Utah.

Three winter field trips have already been enjoyed by the Fresno, California, Gem and Mineral Society. Ocie Randall led one group to Jacalitas Canyon, another to the Nipomo bean fields for sagenite agate, and a third to the Vincent Ranch near the White River for rose quartz.



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**LEGAL, SCIENTIFIC
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At a meeting of Tacoma Agate Club, members were stumped by a question by Tom Morgan: "What is the definition of the word 'mineral'?" During the ensuing discussion, it was suggested that perhaps the word had two meanings, one technical or scientific, one legal.

Research by the editors of the club bulletin, *The Puget Sounder*, proved this to be the case. "Scientifically, the definition of a mineral is just as Tom Morgan gave it," wrote Elsie Merdian in the November 29 issue. "It is any natural inorganic substance forming a part of the earth's crust. As Tom pointed out, water is technically a mineral; but oil, being of organic origin, is not. A mineral can be a gas or a liquid as well as a solid, and many things not commonly thought of in that sense are minerals nevertheless."

"In the eyes of the law, the substance must be valuable before it can become a mineral. The legal definition of mineral is: any substance occurring in the crust of the earth which has sufficient inherent value or value where located to warrant its removal or attempts to remove it."

"To be a legal mineral, the substance must be valuable and if it is, it makes no difference whether it is inorganic or not. Such organic substances as oil and gas, coal and peat, fossil bones and guano have been held by the courts to be minerals and subject to reservation and claim as such, while certain inorganic substances such as sand, gravel and clay have failed to make the grade."

"Some substances may be minerals in one place but not in another, because value is sometimes dependent upon location. Sand and gravel is sufficiently common in western Washington that the State Supreme Court has held it is not subject to reservation as a mineral; but in other places a good gravel pit is hard to come by, and other courts have held that land containing commercial sand and gravel is mineral land. Water is common enough that no mineral-minded lawyer will ordinarily drink it, but mineral claims have been upheld with respect to water which is charged with enough natural effervescence to give it an explosive effect and thereby render it valuable."

**CASTRO VALLEY SHOW
MARCH 5, 6 IN HAYWARD**

Seventh annual show of the Mineral and Gem Society of Castro Valley will be held March 5 and 6 at Hayward Union High School, 22300 Foothill Boulevard, Hayward, California. One of the show's feature exhibits will be a working display of the 38 different species of animal fossils which Wesley Gordon's Boy Paleontologists have taken from the Irving deposits. Methods of casting fossils will be demonstrated and lectures given on the significance of these fossils in geologically dating the west coast. Hours are from 10 a.m. to 10 p.m. Saturday, from 10 a.m. to 6 p.m. Sunday.

"Animal Tracks in Ordovician Rocks of Northwest Georgia" was the title of an interesting feature story written for the fall issue of the *Georgia Mineral Newsletter*. Co-authors were A. T. Allen and J. G. Lester. The tracks are located north of Ringgold, Georgia, off the Chattanooga-Atlanta highway. Photographs accompanied the article, showing tracks of eurypterids, trilobites and prehistoric snails.

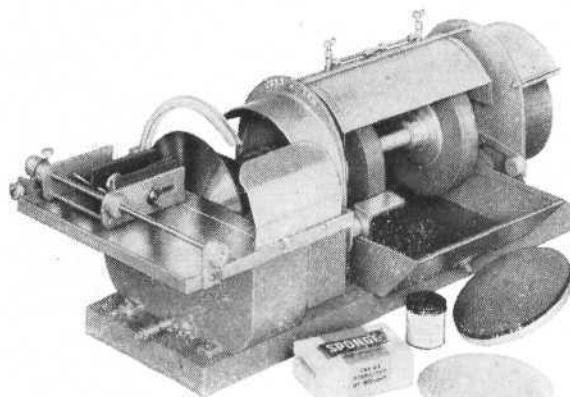
Colored slides taken at the October show of San Francisco Gem and Mineral Society were shown at the Christmas meeting. Rock gifts were exchanged between members, and each brought a toy for Christmas giving to needy children.

Rare ores were displayed by O. P. McMican at a meeting of Yavapai Gem and Mineral Society, Prescott, Arizona. Included were four recently acquired specimens from Johannesburg, South Africa: barbertonite and stichtite, both magnesium chrome ores from Kaapsche Hoop, East Transvaal; a beryl crystal from Gravelotte, East Transvaal, and a rare davidite, containing about 8 percent of rare earths and 5 percent uranium oxide from Tete, Mozambique. Banded malachite from the Belgian Congo, morganite from Gerais, Brazil, fluorite from Kentucky and Illinois and cryolite from Ivigtut, Greenland, also were shown.

E. L. Winn, geology teacher at Coachella Valley Adult Evening High School, spoke on "Origins of the Earth" at a meeting of Shadow Mountain Gem and Mineral Society, Palm Desert, California.

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AMATEUR GEM CUTTER

By LELANDE QUICK, Editor of The Lapidary Journal

Last month we discussed the polishing of Petoskey stones and told about the fine specimen we received from Floyd Irwin of Gould City, Michigan, who sent it as a sample of his work on this difficult stone. Since then we have received another unusual polished gemstone; one which we have never seen in a collection. It is a teardrop of polished prehnite about as big as an average sized strawberry and it is a beautiful yellow-green, but quite filled with feathers.

It is very doubtful if many lapidaries will ever cut prehnite, for even in good quality mineral specimens it is difficult to procure and it is expensive. Our own mineral collection contains a very fine hand-size crystal specimen which would probably cut into many good cabochons but we would not think of cutting it up and we believe that most collectors would rather keep such a piece as a crystal specimen. However a search among the dealers' stocks might reveal some small pieces of cabochon material. Certainly any exhibit at a gem and mineral show that included a good prehnite cabochon would cause wide interest and comment from discerning and informed viewers.

Prehnite is six to six and a half in hardness so that it is harder gem material than turquoise but not quite as hard as quartz. It is composed of calcium and aluminum silicate while turquoise is hydrous aluminum with copper phosphate. The mineral occurs as orthorhombic tabular crystals in granular and drusy (grape-like) masses and while it is uncommon it does occur in very limited quantities at many locations associated with other minerals; a few of them in California.

The known California locations are: Colusa County—found in veins with calcite and pectolite in serpentine deposits near Wilbur Springs. El Dorado County—it is found in veinlets with diopside at Traverse Creek, two and one-half miles west of Georgetown. Inyo County — it occurs in veinlets with epidote at the Pine Creek tungsten mine. Los Angeles County—it is found in botryoidal crusts on the basalt at the Pacific Electric quarry in Brush Canyon. Marin County—it occurs in crystals with crystallized axinite in the hills around Stinson Beach. Plumas County—it occurs as a hydrothermal product at the Engels mine. Riverside County—green drusy and light brown prehnite occur in cavities of white feldspar in the pegmatite veins of the limestone at Crestmore. Dr. Foshag of the United States National Museum also reports that he has seen orange crystals from this location associated with wollastonite and datolite in pegmatite. San Diego County—some fair prehnite has been reported from Smith's Mountain near Oak Grove. San Luis Obispo County—it occurs in the analcite diabase of the Cuyamas Valley.

If you live in a mining state you should write to your state department handling mining matters and inquire for reported locations.

G. F. Herbert Smith reports that prehnite was named after Colonel von Prehn, who first discovered it. For a time some stones of prehnite from South Africa were marketed as "Cape emeralds." The only illus-

tration we have ever seen in color is the excellent one on plate 32 of Chambers' *Mineralogical Dictionary*.

During our correspondence Kenneth Steele, who is head of the Department of Physics at Tri-State College, Angola, Indiana, and who sent us our fine specimen, wrote: "the possibilities of the use of prehnite as a gem material were first called to my attention a year ago by a friend in Scotland with whom I had frequently traded mineral specimens. He sent me a number of intergrown botryoidal masses and suggested that it should lend itself to cutting and polishing. A number of attempts were made at polishing with varying degrees of success. Finally a polishing procedure was found which produced a very satisfactory finish to the surface of the material. A sample of the finished product was mailed to my Scottish friend and he was so pleased with the results that he immediately sent me another supply of the rough. Several more shipments followed so that during the past year I have had opportunity to examine and cut quite a few different varieties of the material. Some of the specimens have inclusions of copper compounds and sometimes flecks of native copper. The copper compounds are blue or dark green in color and add a great deal of beauty to the finished cabochon when they occur below the surface of the gem. But when they appear on the surface they present the problem of undercutting.

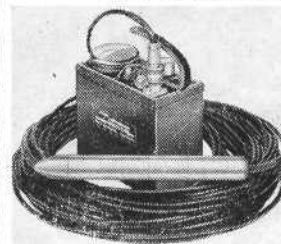
"A lapidary procedure was found which greatly reduced the undercutting. The flecks of copper, when they appeared on the surface of the gem, presented a much more difficult problem since sanding removed the small copper particle, leaving an ugly hole on the surface. No method of treatment to overcome this effect could be found. However, when the native copper appeared below the surface of the stone there was no sanding problem and the red copper added much to the beauty of the gem.

"No new or unique method was used in cutting the material. Dry sanding was attempted but the results were far from satisfactory. After trying many procedures, a very efficient wet sanding method was found. The saw marks and wheel scratches were removed with No. 220 paper and just enough water to keep the stone from overheating. A second sanding was given with No. 400 paper. The final polish was achieved with zirconium oxide on a leather buff. It was the only agent employed however, since it gave satisfactory results. It seems probable that any of the agate polishing methods should give satisfactory results."

The sample that Mr. Steele sent us however was not top notch lapidary work and we suggested that he try the method discussed last month for polishing Petoskey stones. He tried that method with no better result and replied that "I agree with the article on polishing in the December *Lapidary Journal* that says sanding is more important than polishing; that nothing will produce a good polish on a poor sanding job. There are usually two things wrong with my sanding—my old bi-focals need replacing and I am lazy." Perhaps in this concluding sentence there is the answer to most lapidary "problems."

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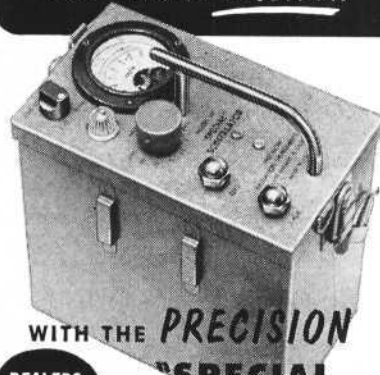
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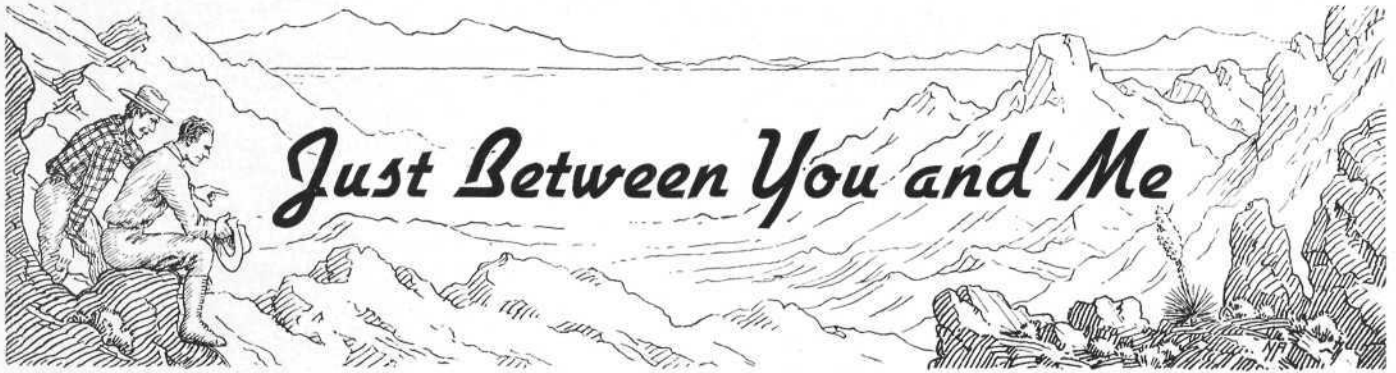
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By RANDALL HENDERSON

IT IS GRATIFYING to note that Col. Thomas W. Miller, chairman of the Nevada State park commission, is urging legislation that will restore and protect some of the natural and historical landmarks in his state. It seems that Nevada has become so involved in its gambling and divorce industries it has been neglecting the attractions which would lure visitors who neither play roulette nor seek divorces.

Nevada can well afford to maintain its state parks and historical landmarks—and those places, if properly safeguarded, will probably remain an asset to the state long after gambling and the divorce mills have been abolished by federal legislation.

* * *

My belated congratulations to Jones Osborn and the staff of the Yuma Daily Sun for the fine centennial edition they published on the occasion of Yuma's 100th birthday. The 136-page edition is crammed with historical information that goes back to the day in 1540 when Hernando de Alarcon arrived by boat at the Yuma crossing with supplies for the Coronado expedition. There were no maps in those days and the Spaniards were badly confused in their geography.

However, Yuma has been on the map ever since that historic incident, and provided the stage for many of the most exciting episodes in southwestern history. It was there that Chief Palma of the Yuma Indians gave friendly aid to Juan Bautista de Anza and his California-bound colonists. And there that Father Garces died a martyr's death.

Yuma has played a major role in the development of the arid Southwest—and today it is the prosperous center of one of the richest agricultural communities in the West.

In the early days, the Indians crossed the Colorado in rafts of woven tules, or waded when the river was low. Now the plans have been complete for a fine new bridge to replace the old narrow-gauge affair which has served literally millions of motorists in recent years. Yuma has both an exciting past and a promising future.

* * *

I have been especially interested in Hulbert Burroughs' story, "Tomorrow's Desert," in this issue. It is good for one's humility to be reminded occasionally that we humans really play a very insignificant role in the vast scheme of the universe.

When left to her own devices, Nature does a very good job of keeping her world in balance. We humans in our man-made society strive for the same things by a sort of trial and error process which is very costly at times, as

evidenced by the wars and famines recorded in our history books.

A recent article in *Fortune* magazine suggests that a four-day work week is not many years in the future. A writer in the *Sierra Club Bulletin* points out the dilemma that is facing us:

As the productivity of the worker increases, due to the perfection of tools and processes, he will have more and more time for recreation.

However, our production of many basic commodities already is so great we are constantly plagued with surpluses. Yet more land is being reclaimed to produce these surpluses—and both of our major political parties are committed to the proposition of encouraging the producers with subsidies.

And there you have the dilemma: The worker on the one hand needing more space for the beneficial use of his increasing leisure time—and on the other side, the commercial interest of those who seek greater wealth by exploiting the natural resources of the land.

Therein lies the background for the controversy which goes on both locally and nationally between the conservationist on the one side and commercialist on the other.

* * *

As this is written, early in January, the mountains that surround the Palm Desert cove are white with snow down to the 4000-foot level, and showers which have fallen intermittently for a week bring the promise of the most colorful wildflower display since 1949.

The timing of the winter rains has been just right this season—gentle showers that soak deep into the ground. And now that Nature has done her irrigating it will require only a few days of sunshine to bring a carpet of tiny green plants to the floor of the desert. To the untrained eye they will all look alike—just a covering of little green sprouts. But each has its own mission to fulfill—to perpetuate its own species.

It is one of the privileges of desert living, to watch the miracle which takes place as each little plantlet grows and gains strength for ultimate achievement of its short span of life—the sending forth of the blossoms which play an essential part in the production of more seeds—to the end that its cycle of life will not be broken.

Barring abnormally low temperatures, or hot dry winds, the wildflower display of 1955 will begin to appear in February and will continue through March on the lower levels, and through April and May at the higher elevations. To those who will come to the desert to witness this year's flower spectacle we only ask—enjoy, but do not destroy.

BOOKS of the SOUTHWEST

WONDER WORLD OF DESERT BLOSSOM

For those who seek the beauty in the arid lands of the Southwest, Raymond Carlson, editor of *Arizona Highways* magazine has compiled a colorful and informative guide in *The Flowering Cactus*.

The book is illustrated with 81 full color photographs by R. C. and Claire Meyer Proctor, collectors and photographers who have spent 15 years acquiring exquisite pictures of practically all the cactus species found in the Southwest.

It has been estimated that there are 1600 species of cacti of which 300 are found in the United States. Many of these are pictured in this fascinating book—from the strange Giant Saguaro, which often reaches a height of 50 feet and an age of a quarter century to the tiny pincushion cactus which makes up for its size by the vivid coloring of its bloom.

How to cultivate the desert cacti in home gardens with suggestions for planting, watering and grafting is included. The amateur photographer is given instruction as to how to capture the dazzling color and exquisite design of the flowering cactus, with special techniques for close-up photography. Finally a map of the Southwest area showing where to find the different species of cacti makes a complete and well-rounded study for any botanist, photographer or just plain desert lover.

Published by McGraw-Hill Book Company, Inc., 96 pages, 81 full-color photographs, line drawings by George Avey, \$7.50.

STORY OF THE DUTCHMAN AND HIS FAMOUS MINE IS TOLD

Three score years have slipped by since Jacob Walzer, better known as The Dutchman, died and his promise that "no miner will ever find my mine" is still as good as the gold he took from his mysterious ore deposit.

Jacob Walzer died in 1891, not penniless as many stories tell, but with a sack of ore in his Phoenix, Arizona, cabin that brought a friend \$4800.

Walzer revealed many clues to the location of his mine and even drew a rough map just before he died, but the fabulously rich Lost Dutchman gold mine is just as Walzer left it somewhere in the Superstition Mountains, 20 miles east of Mesa, Arizona.

"Someday some wanderer will accidentally stumble upon the richest gold mine in all the Southwest," Barney

Barnard and Charles Frederick Higham predict in their new edition of *True Story of Jacob Walzer and his Famous Hidden Gold Mine*.

Walzer's discovery of the old Spanish diggings, his secretive operation of it and the murders, mystery and adventure that surround the Lost Dutchman tale are woven into Barnard and Higham's book.

A brief historical chapter on the Apaches is included as well as chapters on the evidence of minerals in Arizona and early Spanish miners in the Superstitions.

Published by Rancho Del Superstition, 66 pages, Chronology of Contents and a Lost Dutchman map, paper bound. \$3.00.

PROSPECTING INFORMATION AMATEURS SHOULD KNOW

Amateur prospectors are often handicapped by lack of knowledge of minerals, rocks, geologic formations and prospecting methods. Prospecting neophytes may not know how to stake out a claim if they find a likely-looking deposit or where to market it if it is in producing quantities.

These questions and many more that often frustrate week-end mineral seekers are comprehensively covered in Edward Arthur's *Let's Go Prospecting*.

Slanted for the Southern California amateur, the crisply composed booklet is a compilation of basic information on prospecting in this region.

Edward Arthur, has in a literary capsule, placed information at the fingertips on principal minerals and their characteristics, rocks, occurrences and association of minerals, mechanics of prospecting, how to stake a claim, panning and placering for gold and more.

In two lengthy chapters he describes principal Southern California industrial minerals and metallic ores, giving their characteristics, sources, uses and listing possible buyers.

Also valuable for the new prospector is information on desert campsites in Southern California and tips on preparing for a camping trip. Agencies and organizations that supply information on request to prospectors and miners are listed as well as assay and testing laboratories, mills and smelters and mineral and lapidary supply dealers.

Mineral maps of 10 Southern California counties in the back of the

booklet give invaluable aid to the amateur, graphically showing the multitude of Southern California areas where minerals are found.

Published by Edward Arthur, 60 pages. Mineral maps of 10 Southern California counties. \$3.50.

PROSPECTING FOR ATOMIC MINERALS

The growth of prospecting for uranium, its encouragement by the government and the use of the minerals for peacetime purposes, coupled with the finding of the minerals in unexpected places, has made a book like *Minerals for Atomic Energy* a necessity. Written by Dr. Robert D. Nininger, deputy assistant director of exploration, U. S. Atomic Energy Commission, it is an authoritative guide for layman or expert to successful prospecting for atomic minerals.

Divided into three parts, with 16 appendices, maps, photos and charts, *Minerals for Atomic Energy* covers the field completely. Part one deals with "what to look for": uranium, thorium, beryllium, with colored photographs to aid in identification. Part two covers "where to look" throughout the world. Favorable areas for prospecting in the U.S. are given and evaluation of less favorable areas. The Atomic Energy Commission further helps by publicly posting the location of areas of unusual radioactivity discovered through their research. Part three explains "how to look," dividing the preparation and equipment into that needed to maintain the prospector in the field and that required to do the job once there. How to operate a Geiger counter is told.

Probably the most interesting section for present-day prospectors is that on marketing of uranium, beryllium and associated ores. The prospector will find it is easy to get help for examinations and assays from the U. S. Bureau of Mines. The book also explains where to get financial aid, privately or through the government which guarantees a minimum price for raw ore as well as the refined product.

The 16 appendices include extensive identification tables of the radioactive minerals; the laws and regulations applying to prospecting; the location of mining claims in the nine western states; information on Canada and Australia and prices and markets in the U. S.

Published by D. Van Nostrand Co., Inc. Illustrated in color and black and white. 367 pages. \$7.50.

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

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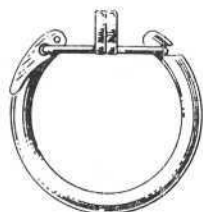
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MINERALS FOR "ATOMIC ENERGY"

By Robert D. Nininger
of U.S. Atomic Energy Commission

Published late September, 1954
\$7.50 per copy

This is a complete handbook to prospecting for atomic energy minerals written by the Deputy Asst. Director for Exploration of the Atomic Energy Commission.



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