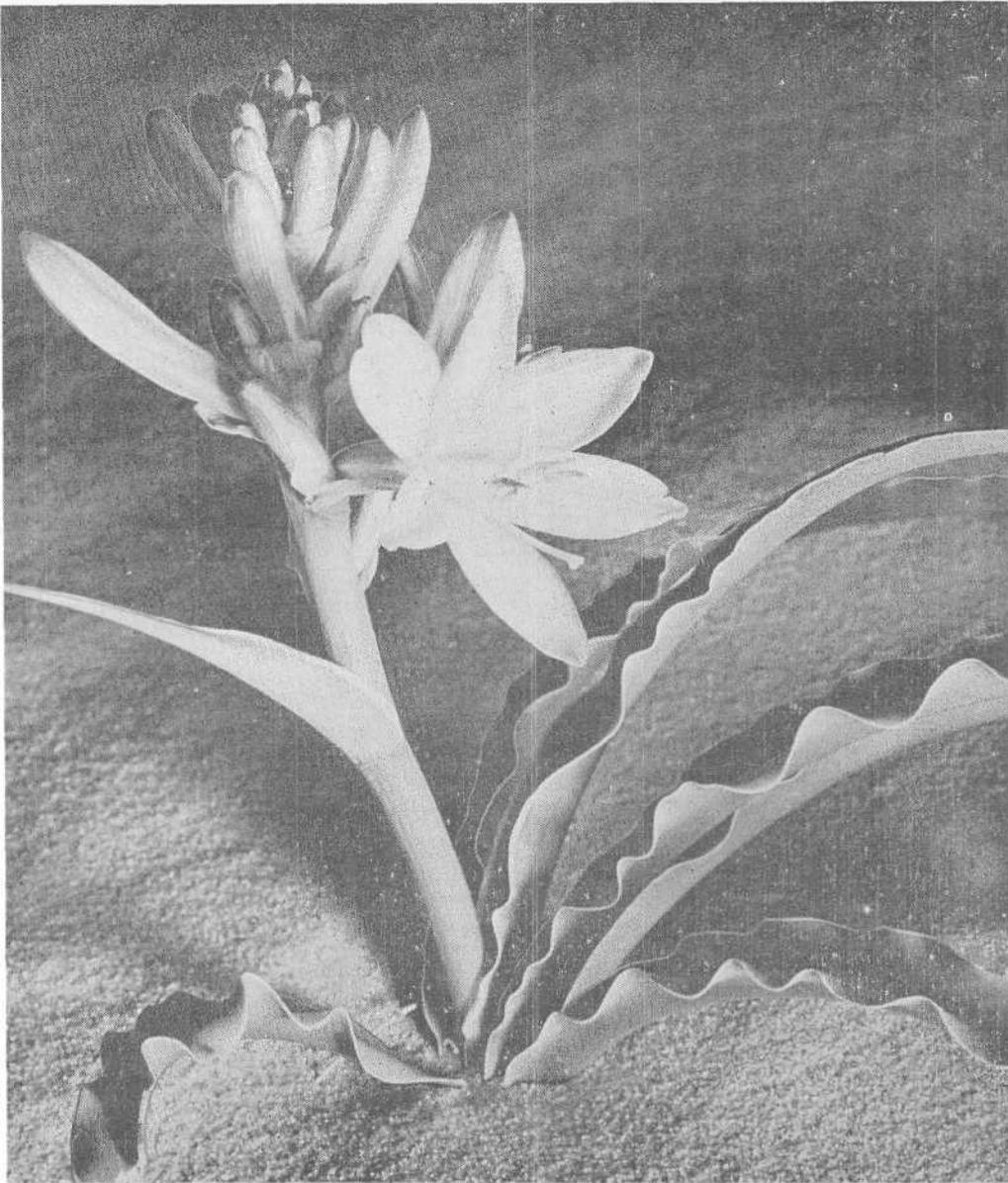


# *Desert*

FEBRUARY, 1957 . . . 35 Cents





### THE DESERT EVENING CALLS

By GEORGIA JORDAN  
Ocean Beach, California

The Desert Evening calls, with siren's charm,  
And draws me to her drifting sand,  
Forgetful of the furnaced day's alarm  
When Death was hidden in her hand.

The Desert Evening, casting shadows, calls  
To welcome night. I catch her pleasant  
mood,  
And breathe the pure, cool air as twilight  
falls  
And stars appear to share my solitude.

### Comparative

By TANYA SOUTH

Vague is the purpose of our faring,  
Dim our vision, small our scope,  
And puny is our highest daring.  
The problems with which we must  
cope  
Are so minute: And yet the ant,  
Scarce seeing us as on it trods,  
Will unto us high powers grant,  
And think us gods.

### GOLDEN EAGLE

By JULIA BROGAN  
Kansas City, Missouri

Up he soars to breathless blue,  
Craggs and rocks beneath him spread,  
Clouds that dazzle overhead,  
He dips and turns, then lifts anew.

In the boundlessness of space,  
With sun-bronze wings he hovers near.  
Nothing in depth or height to fear,  
He floats, with ageless, silent grace.

Soon two more join him in the fun.  
O'er peaks too steep for man to climb,  
Infinitesimal, sublime,  
They disappear into the sun.

### I'D RATHER

By EDNA M. NEWMAN  
San Bernardino, California

I'd rather sleep on the ground 'neath a  
tamarisk  
Than lodge in the finest hotel.  
Bask in the sun on the desert,  
Than live where the city folks dwell.  
I'd rather see stars up in heaven,  
Than lights on the great white way.  
Or listen to the night bird call his mate,  
Than to hear the finest band play.

### Lily of the Wasteland

By IRENE WELCH GRISSOM  
San Gabriel, California

A lily true to type and fair  
As if it grew with hothouse care,  
If lifts above the burning sand  
And lava rock of arid land  
To bloom where little else will grow,  
Beset by bitter winds that blow.  
A lovely flower that lends its grace  
To light a barren, lonely place.

In every landscape something fair  
For beauty breaks in everywhere.

### BACK TO THE DESERT

By RENA OAKLEY LEWIS  
Roseburg, Oregon

I want to go back to the desert;  
I feel lonesome and weary and old,  
I am lost in the maze of the city,  
I am sick of the rain and the cold.

I want to see distant horizons,  
Feel the urge of their beckoning hands;  
Hear again the voice of the desert  
And the tales of the whispering sands.

I want to hear coyotes yapping,  
Watch bright desert blossoms unfold,  
Climb to a hilltop at sunset  
To gather a heartfelt of gold.

I want to sleep out in the open,  
Gaze up at the fathomless stars;  
The walls of this room in the city  
Enclose me like cold prison bars.

There, day is a sermon in living,  
And night is a hymn and a prayer;  
I want to go back to the desert,  
God seems closer to people out there.

### MY LOVE FOR ROCKS

By MILDRED A. COWAN  
North Bend, Oregon

I love the rocks, their colors and their  
forms—  
Gifts of warm, high deserts — of ocean's  
storms;  
The polished offerings of glacial flow;  
The prints of fronds that swayed—cons ago.

I love these rocks — to search for them  
among  
The hills, or on the beach, with knapsack  
slung  
Ready to receive each cherished stone . . .  
I love to work with them—content, alone.

I love the rocks—but may I never be  
So held by them that I no longer see  
The white crests on the waves, the wheeling  
gulls—  
The desert's vastness—a woodland's miracles.

These charming rocks I will not love the  
less  
For taking time to watch clouds opalesce,  
Or to cultivate old friends, who may not  
find  
A message in a geode, crystal-lined.

My wealth in rocks I do not count in weight,  
But in the joy they give me—which is great.

### PRIVATE DOMAIN

By ADELAIDE COKER  
Ojai, California

Beneath the desert willow, the pool  
Beckoned to me, limpid and cool.  
Thirsty, I bent my head to drink  
Never really stopping to think  
Until I met the golden eyes  
Of two indignant dragonflies.

## DESERT CALENDAR

- Feb. 1-3—Parada Del Sol, Scottsdale, Arizona.
- Feb. 1-3—17th Annual Imperial Valley Tomato Festival, Niland, Calif.
- Feb. 2—Candlemas Day Dances at San Felipe, Cochiti and San Ildefonso Indian Pueblos, N. M.
- Feb. 2-3—17th Annual Palm Springs, California, Rodeo.
- Feb. 3—Dons Club Tour of Jerome and Montezuma Castle National Monument, from Phoenix, Ariz.
- Feb. 3-5—New Mexico Wool Growers Association Convention, Albuquerque.
- Feb. 3-27—Exhibition of Oil Paintings by Milford Zornes, Addington Gallery, Desert Hot Springs, California.
- Feb. 4—State Pancake Race, Clayton, New Mexico.
- Feb. 7-10—Tucson, Arizona, Open Golf Tournament.
- Feb. 8-10—10th Annual Imperial Valley Carrot Carnival, Holtville, California.
- Feb. 8-10—Dons Club Tour of Zion National Park and Hoover Dam, from Phoenix, Arizona.
- Feb. 9—University of Nevada Winter Ski Carnival, Reno.
- Feb. 9-10—Jaycee Silver Spur Rodeo, Yuma, Arizona.
- Feb. 9-10—Western Saddle Club 1957 Stampede, Phoenix, Arizona.
- Feb. 10—Desert Sun Ranchers Rodeo, Wickenburg, Arizona.
- Feb. 12-13—Tri-State Hereford Breeders Show, Clayton, N. M.
- Feb. 12-17—Arizona Sports, Vacation, Boat and Trailer Show, Phoenix.
- Feb. 15—San Juan Pueblo, New Mexico, Dances.
- Feb. 16-17—Sheriff's Posse Championship Rodeo, Chandler, Ariz.
- Feb. 16-19—Air Force Pacific Coast Conference Ski Championship Meet, Reno, Nevada.
- Feb. 16-24—Riverside County Fair and National Date Festival, Indio, California.
- Feb. 17—Bandollero Tour to Kofa Palm Canyon, sponsored by Chamber of Commerce and Parks Department, Yuma, Arizona.
- Feb. 17-24—10th Annual Cactus Show, Desert Botanical Garden, Phoenix, Arizona.
- Feb. 21-24—La Fiesta de los Vaqueros, Parade and Rodeo, Tucson, Arizona.
- Feb. 22-23—10th Annual Square Dance Festival, Phoenix, Arizona.
- Feb. 23-24—Arizona Ski Cup Races, Flagstaff.
- Feb. 23-24—Arabian Horse Show, Scottsdale, Arizona.
- Feb. 27—Desert Sun Ranchers Rodeo, Wickenburg, Arizona.
- Feb. 28—Annual Thunderbird Tennis Championship Tournament, Phoenix, Arizona.
- Feb. 28—Indian School Open House, Phoenix, Arizona.
- Mid-February—Mid-Winter Ski Carnivals at Santa Fe, Taos, and Albuquerque, New Mexico.



Volume 20

FEBRUARY, 1957

Number 2

<b>COVER</b>	Strawberry Hedgehog Cactus Blossoms By JOSEF MUENCH	
<b>POETRY</b>	Lily of the Wasteland, and other poems . . . . .	2
<b>CALENDAR</b>	February events on the desert . . . . .	3
<b>HISTORY</b>	The Great Diamond Hoax of 1872 By H. N. FERGUSON . . . . .	4
<b>TRUE OR FALSE</b>	A test of your desert knowledge . . . . .	6
<b>PERSONALITY</b>	Jim Mahone, Hualpai Scout, by MAY E. YOUNG	8
<b>MEMORIAL</b>	He Would Preserve the Primitive Wilderness By WELDON HEALD and RANDALL HENDERSON . . . . .	9
<b>WILDFLOWERS</b>	Flowering Predictions for February . . . . .	10
<b>FICTION</b>	Hard Rock Shorty of Death Valley . . . . .	10
<b>FIELD TRIP</b>	Green Garden Stone Above Old Ravenna By JAY ELLIS RANSOM . . . . .	11
<b>NATURE</b>	Beetle that Stands on Its Head By EDMUND C. JAEGER . . . . .	15
<b>GHOST TOWN</b>	Only the Sidewalk Remains at Gold Creek By NELL MURBARGER . . . . .	17
<b>CLOSE-UPS</b>	About those who write for Desert . . . . .	22
<b>CONTEST</b>	Picture-of-the-Month Contest announcement . . . . .	22
<b>PHOTOGRAPHY</b>	Pictures of the Month . . . . .	23
<b>GARDENING</b>	When Desert Dweller Plants a Tree By RUTH REYNOLDS . . . . .	24
<b>LETTERS</b>	Comment from Desert's Readers . . . . .	26
<b>RECREATION</b>	On Desert Slopes with the Sierrans By LOUISE TOP WERNER . . . . .	27
<b>EXPERIENCE</b>	Arizona Homestead in 1913 By CARRIE S. FRAIZER . . . . .	28
<b>NEWS</b>	From here and there on the desert . . . . .	30
<b>MINING</b>	Current news of desert mines . . . . .	34
<b>URANIUM</b>	Latest developments in the Industry . . . . .	35
<b>HOBBY</b>	Gems and Minerals . . . . .	37
<b>LAPIDARY</b>	Amateur Gem Cutter, by DR. H. C. DAKE . . . . .	41
<b>COMMENT</b>	Just Between You and Me, by the Editor . . . . .	42
<b>BOOKS</b>	Reviews of Southwestern Literature . . . . .	43

The Desert Magazine is published monthly by the Desert Press, Inc., Palm Desert, California. Re-entered as second class matter July 17, 1948, at the postoffice at Palm Desert, California, under the Act of March 3, 1879. Title registered No. 358865 in U. S. Patent Office, and contents copyrighted 1957 by the Desert Press, Inc. Permission to reproduce contents must be secured from the editor in writing.

RANDALL HENDERSON, Editor  
BESS STACY, Business Manager

EUGENE L. CONROTTO, Associate Editor  
EVONNE RIDDELL, Circulation Manager

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### SUBSCRIPTION RATES

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

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

Address Correspondence to Desert Magazine, Palm Desert, California

# The Great Diamond Hoax of 1872 . . .

The great jewel fraud was brief, explosive and tragic in its consequences. It was a remarkable demonstration of what can happen when shrewd, sensible men allow avarice to distort their natural judgment. It stands as a monument to the eternal gullibility of man.

By H. N. FERGUSON  
Drawing by Don Phillips  
Map by Norton Allen

**W**ILLIAM C. RALSTON, head of the powerful Bank of California and financial autocrat of the Pacific Coast, stood at the window of his office on a morning in early February, 1872. He glanced carelessly at two roughly dressed miners who were crossing Montgomery Street carrying a heavy canvas bag. They entered the bank and Ralston turned back to his desk, little realizing the fantastic influence these two men were to have on his life.

Philip Arnold and John Slack approached the cashier. "We'd like to deposit this bag in your vault," announced Arnold.

"Yes sir," replied the cashier. "I'll give you a receipt for it, but first I'll have to know what it contains."

For answer Arnold tilted the sack allowing the contents to spill out on the table—a bewildering cascade of uncut diamonds, raw rubies, sapphires and emeralds.

The cashier suppressed a whistle. Behind him, bug-eyed clerks exchanged surreptitious glances. Within minutes Ralston had been informed of the bizarre deposit.

"Bring them in!" he demanded quickly. "I want to talk to them." But the miners had already disappeared.

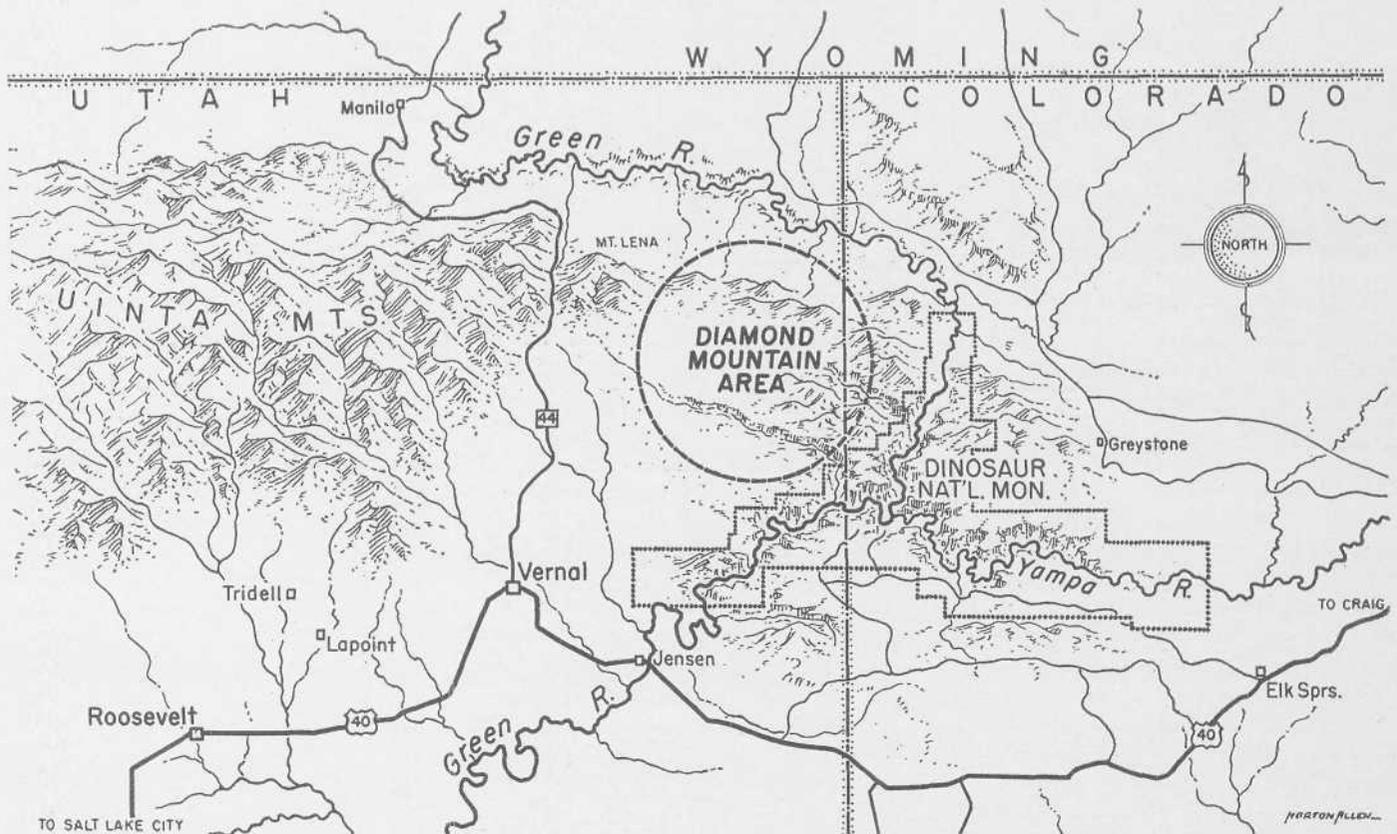
Shortly thereafter, George D. Roberts, a former Army general, learned of the pouch full of gems and recalled that Arnold had once been an employee of his. The general lost no time in renewing his acquaintance. Arnold appeared happy that he had found someone whom he could trust and poured out the whole story. He and Slack, he said, had stumbled upon a mountain filled with precious stones of every description. Vague about the exact location, he hinted that the mine might be in Arizona.

Roberts, who was a friend of Ralston, induced the two men to go with

him to see the banker. At first they were exceedingly cautious, with all the manner of a couple of simple-minded fellows who had stumbled on something good and, bewildered with their great fortune, were afraid to trust anyone with the secret. But Ralston, suave and persuasive, soon set the men at ease. He dangled before them the promise of lavish offices with solid walnut desks, rich homes with servants and great power. The miners began to understand the advantages of a partnership. After a period of cautious negotiation the two men agreed to sell a part of the claim to Ralston.

"Of course," warned the banker, "before we go through with this, it will be necessary for us to inspect the claim."

The men, obviously pleased that their troubles were over, agreed. They did insist upon one stipulation, however. Whoever inspected the mine must be blindfolded upon approaching and leaving the area. Since this was a reasonable request, Ralston acquiesced. Two agents, one of whom was General David Colton, were selected to make the journey. The emissaries returned with rose-colored reports of the genuineness of the properties and with another bag of diamonds to bear out their fabulous richness. One of



the diamonds Colton brought back was shown to a respectable jeweler. It weighed 103 carats and was valued at \$96,000. Ralston was almost beside himself. He confided to friends that at a low estimate the field was a \$50,000,000 proposition.

The banker began dreaming of creating a West Coast empire. He plotted the removal of the whole diamond industry to San Francisco, planning to import miners from South Africa and lapidaries from Holland. He envisioned himself as controlling the world's gem market, and immediately swung into action.

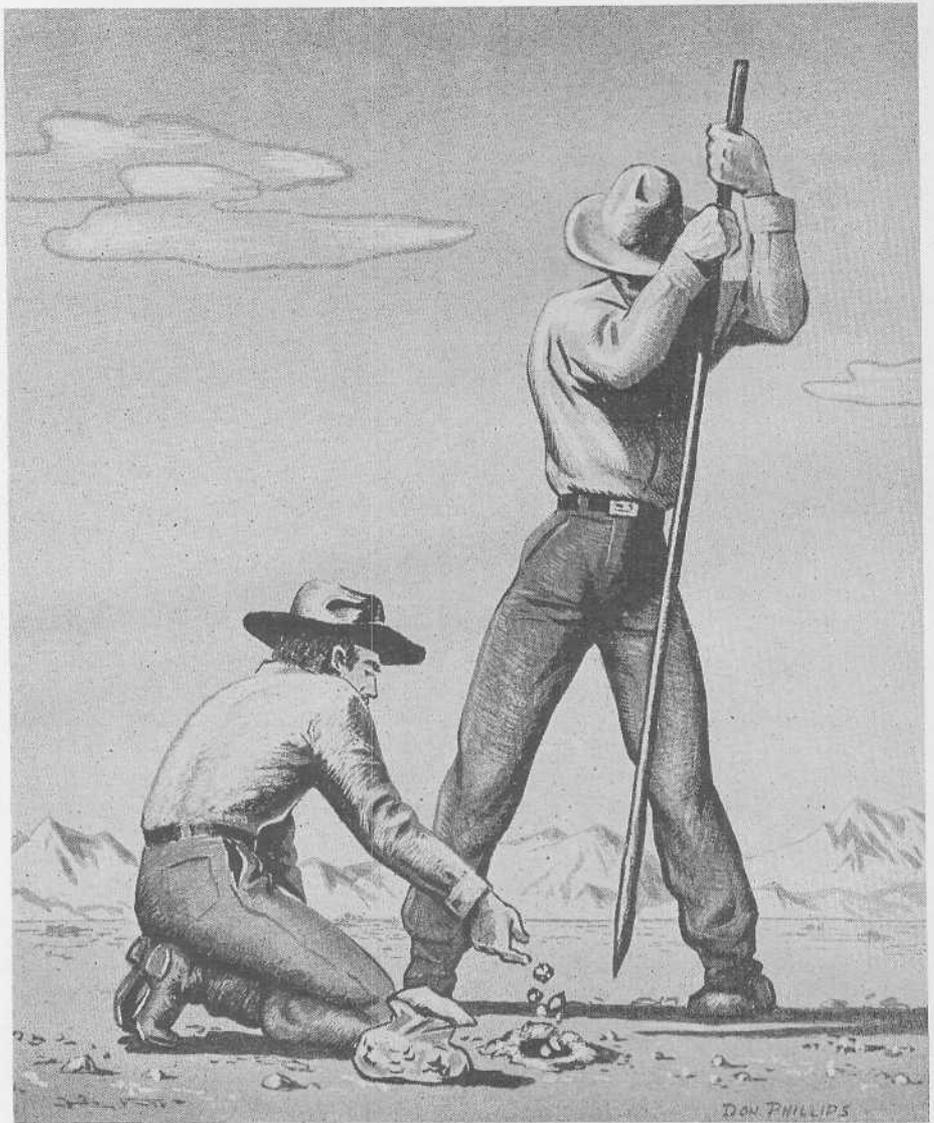
As the opening shot he sent a cable, costing \$1100, to his friend and partner, Asbury Harpending, who was in London. The cable set forth in minute detail the great diamond find and requested Harpending to hurry home to act as general manager of the project. Harpending was reluctant, however, and a brisk exchange of cablegrams followed. Then rumors of the discovery began to float into London. Baron Rothschild became interested and visited Harpending for further information. Harpending was dubious, and said so. "Do not be too sure," replied the Baron. "America is a large country and has furnished the world with many surprises already. It may have others in store."

This remark, from the keenest financial wizard in the world, made up Harpending's mind. Ignoring a tiny bell that seemed to be ringing an intuitional forewarning of disaster, Harpending sailed for home—whether to take his place in a new financial hierarchy or to act as ringmaster for a \$50,000,000 circus, he didn't know.

In the meantime, Slack and Arnold had made Ralston a proposition that seemed to reveal their good faith beyond a doubt. They offered to go to the diamond fields and bring to San Francisco a couple of million dollars worth of stones and place them in the possession of the financiers as a guaranty of good faith. The offer was accepted.

Some weeks later Ralston received a telegram from Arnold at Reno, stating that he and Slack were on the way home and urging that someone meet them at Lathrop, California. Harpending, who had arrived in the meantime, was assigned this mission. He arranged with his associates to meet him at his home on Rincon Hill after he had kept the Lathrop rendezvous with Arnold and Slack.

Harpending met the train and found the two men, both of whom were exceedingly travel-stained and weary. Slack was sound asleep but Arnold sat grimly erect, rifle in hand and a bulky package by his side. They told



*Philip Arnold and John Slack salted the "diamond field" by thrusting an iron rod into the ground, dropping a few near-worthless stones into the holes and then filling them over. Rain eliminated all evidence of the chicanery.*

a lurid story. After gathering what they considered two million dollars worth of gems they had started home. On the way it had been necessary to cross a swollen river on a hastily constructed raft. When it had nearly capsized they had lost one package containing half the stones. The other packet had been saved. The two men left Harpending in Oakland and he hastened home where his friends anxiously awaited him. A sheet was spread on a billiard table, the sack slashed open and the contents dumped. "It seemed like a dazzling, many-colored cataract of light," Harpending wrote later.

But the cautious backers of the venture were still not entirely satisfied. They suggested that a portion of the diamonds be sent to Tiffany's of New York for expert appraisal. If this company, of world repute, placed their

stamp of approval on the value of the gems, well and good. The next step would be the choosing of a mining expert to examine the field and give a full report. Nothing was to be left to chance. To all this Arnold and Slack readily consented.

William Lent, Arnold, Slack and Harpending left for New York taking with them a liberal sample of the gems. An arrangement was made to meet Tiffany at a private residence for the showing. A number of distinguished persons were present that evening, including Horace Greeley and General McClellan. The bag of gems was opened. Tiffany made a careful examination. "Gentlemen," he said at last, "these are beyond question precious stones of enormous value. I must, however, have my lapidary give an exact appraisement. I will report to you further in two days."

The report, when made, gave a valuation of \$150,000 on the sample lot. On this basis, the gems in the company's possession were worth \$1,500,000. There now was no element of risk involved.

Then came the selection of a mining expert to examine the property. Only one name was considered — Henry Janin. His knowledge of mining and his skill as a consulting engineer had long marked him as the top man in his field. He had the reputation of having examined over 600 mines without once making a mistake or having caused the loss of a cent on any of them.

At this point Arnold became restive. He demanded a further guarantee in cold cash. He asked for \$100,000 but agreed to let it remain in escrow,

pending Janin's report. This detail taken care of, the group set out for the diamond fields.

The party left the Union Pacific Railroad at Rawlings Springs, near what is now Green River, Wyoming. They outfitted and struck out through the wilderness. Arnold and Slack led them on an erratic four day trek through wild and inhospitable country. The men, unaccustomed to hardship, grew quarrelsome. Finally, however, they pitched camp in the middle of the famous diamond area. It embraced a small mesa of about 30 or 40 acres at an elevation of 7000 feet. A small stream of water ran through it.

Fatigue was quickly forgotten as everyone grabbed pick and shovel and set to work. Diamonds were turned up at will, together with occasional

rubies, emeralds and sapphires. Janin was exultant that his name should be associated with the most momentous discovery of the age; the others experienced the intoxication that comes with sudden accession of boundless wealth.

Two days work satisfied Janin of the genuineness of the diamond fields. Wildly enthusiastic, he felt it useless to spend more time on the property. "Twenty laborers could wash out a million dollars worth of gems per month indefinitely," he declared.

Now that its value had been determined, the party was reluctant to leave the field without someone watching it. Slack and Harpending's friend Alfred Rubery were assigned the guard detail and the rest of the party departed. Later, Rubery returned to San Francisco, but Slack was never seen again.

When the men reached San Francisco and Janin's report had been digested, a company was immediately organized called the San Francisco and New York Mining and Commercial Company with a capital stock of \$10,000,000. Twenty-five men, representing the cream of the financial interests in San Francisco, were permitted to subscribe for stock to the amount of \$80,000 each. The House of Rothschild was to act as foreign agents.

Slack and Arnold were paid a total of \$660,000 by which their interests were completely wiped out. The money was turned over to Arnold personally since he had a properly executed power of attorney to act for Slack.

The public was keyed up to the point of a speculative craze such as even the Comstock never saw. If the stock had been placed on the market millions upon millions would have been invested.

Handsome offices were engaged and a large map of the property was displayed on the wall. It showed the position of the various locations which had been given such suggestive names as Discovery Claim, Ruby Gulch, Diamond Flat, Sapphire Hollow, etc.

Then, on November 11, the blow fell. The president of the diamond company received a wire sent from a small station in Wyoming. It read:

**THE ALLEGED DIAMOND MINES ARE FRAUDULENT. THEY ARE PLAINLY SALTED. THE DISCOVERY IS A GIGANTIC FRAUD AND THE COMPANY HAS BEEN PITIFULLY DUPED.**

The telegram was signed by Clarence King, a name commanding high respect in engineering circles. King, who was later to establish the U. S. Geological Survey, had surveyed the 40th Parallel and reported to Washington that no gems existed in this

## TRUE OR FALSE:

Here's another of those brain-twisters for the desert fans. If you know all the history, geography, botany, mineralogy and general lore of the desert country you will score 100 percent. But no one knows that much, so give yourself a pat on the back if you even come close to it. The law of averages should give you 10 correct answers even if you have never seen the desert. Fifteen correct answers indicates better than an average knowledge of the desert. If you get 18 you can attach an S.D.S. to your name—Sand Dune Sage. The answers are on page 36.

- 1—The Chuckawalla lizard has four legs. True..... False.....
- 2—Scotty's Castle in Death Valley is a reconstructed prehistoric Indian pueblo. True..... False.....
- 3—A line drawn east and west through Reno, Nevada, would pass south of Salt Lake City. True..... False.....
- 4—Wild burros now roam many parts of the Great American desert. True..... False.....
- 5—The date palm is a native of the American desert. True..... False.....
- 6—One of the desert lizards is called a vinegaroon. True..... False.....
- 7—An arrastra was used by prehistoric Indians to kill buffalo. True..... False.....
- 8—Ferns are found in many desert canyons. True..... False.....
- 9—California's Salton Sea now covers a much smaller area than in 1900. True..... False.....
- 10—Chief industry of Ajo, Arizona, is cattle raising. True..... False.....
- 11—A calcite crystal will scratch a quartz crystal. True..... False.....
- 12—The Hassayampa River in Arizona is a tributary of the Gila River. True..... False.....
- 13—Joseph Smith led the original Mormon Trek to Utah. True..... False.....
- 14—The door of a Navajo hogan always faces east. True..... False.....
- 15—Chimayo, home of the handspun weaving industry is in California. True..... False.....
- 16—Bright Angel Creek flows into the Colorado River. True..... False.....
- 17—Both Stalactites and Stalagmites are found in the Carlsbad Caverns of New Mexico. True..... False.....
- 18—Clyde Forsyth is an artist who often paints the desert landscapes. True..... False.....
- 19—Breyfogle is a name associated with a lost gold mine in California or Nevada. True..... False.....
- 20—Coyotes are vegetarians. True..... False.....

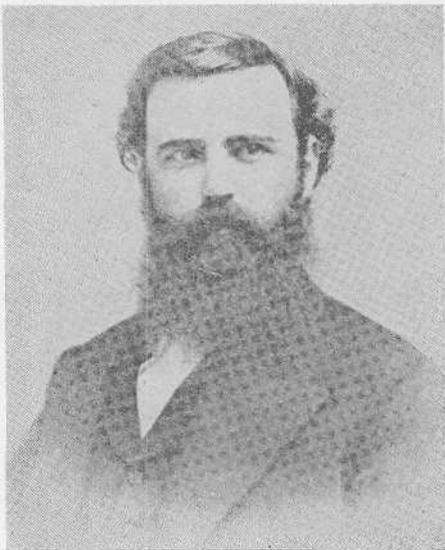
region. He was chagrined to learn of the great diamond find and determined to make a personal investigation.

From information picked up he had a fair idea of the mine site and finally located it in Utah, just over the territorial border of Wyoming. He set to work and soon uncovered vast quantities of gems; he also brought to light things that had hitherto been overlooked. On several stones he found the plain marks of lapidary tools. Several of the gems were found wedged in the crevices of flat rocks. Evidence indicated that an iron rod had been thrust into the ground in hundreds of places then pulled out and diamonds dropped into the holes. The openings had been sealed by tramping on them with a boot heel. Rains had washed away all surface evidence of the chicanery but beyond a doubt the entire region had been meticulously salted.

In San Francisco the company officers were completely stunned. A hurried conference was called and the grim-faced men rushed Henry Janin back to the field to verify King's statement. It was all too true.

The details of the adroit swindle now began to unfold. It had succeeded not because of the cleverness of the principals involved but because of their ineptness. Their casual cooperation with every suggestion made by the company officials tended to disarm rather than arouse suspicion. The audacity and nerve of the two miners accomplished the rest. Throughout all the negotiations they were always serene, ready, confident—made not one break. They had been almost exultant when Tiffany agreed to value the dia-

*Asbury Harpending, Ralston's partner. His published account is one of the few authentic records of the hoax.*



monds. "That will settle everything," Arnold had exclaimed.

The fact that diamonds, rubies, emeralds and sapphires were found in common association should have given an inkling from the beginning that all was not well, but this was entirely overlooked by Tiffany, Janin, the House of Rothschild and the best business and mining brains of the west. The only excuse for Tiffany making such an appalling error in appraising the gems was undoubtedly due to his unfamiliarity with rough stones—he was used to dealing with the finished product. As for Henry Janin, he had considered that Tiffany's valuation definitely established the genuine character of the stones; his mission was mainly to estimate the extent and probable value of the field.

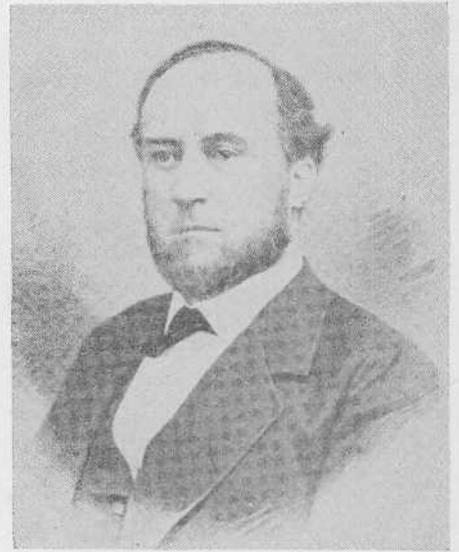
But how did a couple of ordinary



*Baron Rothschild, world's leading financier who acted as foreign agent for the diamond mining company.*

prospectors secure the necessary finances to pull off such a glittering fraud? It came out later that they had previously sold a pair of mines for some \$50,000. Arnold had made two trips to Europe to purchase stones. He visited the various gem-cutting establishments, buying many coarse stones known as "niggerheads." They were handsome enough but of little commercial value. In all, Arnold spent about \$35,000 to secure the proper stage props for salting the mine. He and Slack thus realized a neat profit of more than \$600,000.

Unhappy days settled upon the directors of the company when the giant swindle was confirmed. Jeers and cat-calls accompanied them whenever they appeared in public. Ralston started a nationwide search for Arnold and Slack. He located Arnold in Hardin County, Kentucky. The state refused



*Wm. C. Ralston, president of the Bank of California and first dupe in the diamond fraud.*

to extradite the prospector and its courts stood solidly behind the man who had outwitted the Yankees at their own game. However, in return for immunity from further litigation, Arnold surrendered \$150,000 of the money. But he was to have only a short while to enjoy the fruits of his labors. He opened a bank in Hardin County and was killed the next year in a gunfight with one of his competitors.

Slack, who had received only a small fraction of the original money, was never heard from again. It is likely that he died somewhere in the west without participating further in the profits of the diamond fraud.

As for the investors who had put \$80,000 each into the venture, Ralston and Harpending paid them off in full.

Henry Janin, his professional standing ruined through his one error in judgment, went abroad to rehabilitate himself.

Harpending, disgusted with life in general and with business in particular, liquidated at great sacrifice all his vast holdings in San Francisco and left for Kentucky where he invested in land and settled down to play the part of an obscure country gentleman.

Three years later the great Bank of California, of which Ralston was the head, suddenly closed its doors, faced with insolvency. Ralston promised that all his resources would be used to make up the bank's deficit. Two days later his body was found floating face downward in the Bay just off North Beach. As he bowed out, his vast financial empire was disintegrating into ruin. The unlucky venture had brought disaster to all connected with it.

# Jim Mahone, Hualpai Scout...

*You have read about the Indians,  
Their cruel and scalping ways;  
I will tell you of an Indian  
Who guarded my childhood days.*

By MAY E. YOUNG

**H**IS HUALPAI Indian name was Mahoynavie. The army changed it to Jim Mahone when he enlisted as an Indian Scout in 1873, as a young man of 23. I do not remember his parents. His father died at an early age from a rattlesnake bite.

In those days food was scarce and they used every means of getting it. According to the story told by the tribesmen, the father was reaching into a hollow stump for a rabbit when he was struck in the face by a rattler, and died a few hours later. Jim's mother lived to old age, and he had two sisters and a brother. His youngest sister married Jeff, the man who led the whites to the rich White Hills mine.

After Mahone's discharge from the army in 1878, he bought his wife, Betsie, from her parents in Mineral Park. He had to pay a Navajo blanket and a pony for Betsie, who was just a young girl at the time. Jim had quite a time keeping her. She kept running back home to her parents and each time she did he had to buy her back again. She finally became reconciled and made him a faithful wife. They had two sons, Frank Mahone and Jim Mahone, Jr. Frank passed away when he was 15 and young Jim died in 1937, the same year Betsie passed away. Mahone married again in later life.

In 1876 my father, Edwin Imus and his brother, Charley, drove a herd of cattle from California to Arizona. They crossed the Colorado River at Eldorado Canyon and settled in what is now Mohave County. They bought Camp Willows, a former army encampment. After locating their cattle, my father returned to California and married his sweetheart, Rose Hunt. He and his young bride came to Camp Willows to make their home and here I was born on January 7, 1878, the eldest of a family of eight children.

One of my earliest memories is of Jim Mahone. He was hired by my father and my uncle to guard their families when they were away from home. Jim made regular trips back and forth between the two places to see that we had plenty of wood and water and were not molested by anyone.



Jim Mahone

In those days, women and children were taught to be afraid of men walking the roads. We called them tramps. I afterward learned that many a good man was forced to walk because he had no other means of transportation.

One day, a strange man came to our house. Mother gave him a meal in the early morning and after eating he walked out and lay down to rest behind the corral. There was a huge pile of rocks about a mile from the house and after lying down an hour or so, he walked over to it. Mahone's camp was on the hill in front of our house and he had been watching all the while. He came down and said to my mother, "I don't like that man."

"I don't like the way he acts, either," mother answered.

"You say so, I kill him," he said.

"No," replied mother. "Don't kill him—just watch him."

When evening came, the man moved on.

Jim was the only Hualpai who owned a mule. The animal was so old it had

begun to get gray-haired. One of the cowboys asked him one day, "Mahone, how old is your mule?"

"Oh," he said, "I don't know. But General Crook come here, me little boy, mule little boy, too."

He rode this mule on hunting trips. A mule has a keen sense of smell and this one always gave warning when they were close to deer. Jim understood his signals and would get down and slip up on the deer.

On one of his hunting trips, he killed an antelope illegally. Someone reported him and when the game warden came to investigate, he found the hide on Mahone's mule. Mahone pretended to be so blind that he could not distinguish an antelope from a deer hide. So convincing was his story that the warden could not understand how he had been able to see well enough to kill the animal in the first place.

Mahone's declining years were spent in Seligman. He was now too old to work and had retired on a government pension. He was quite a favorite with the people there. With their help and his small pension, he existed. He owned his home, a dirt-floored shanty built of a hodgepodge of corrugated iron. It was home to him and he preferred it to the Hualpai Reservation. He also owned an ancient car but had to trust some of the younger generation to drive as he was completely blind for nearly 10 years. Before his death, he regained his sight which gave him a great deal of pleasure.

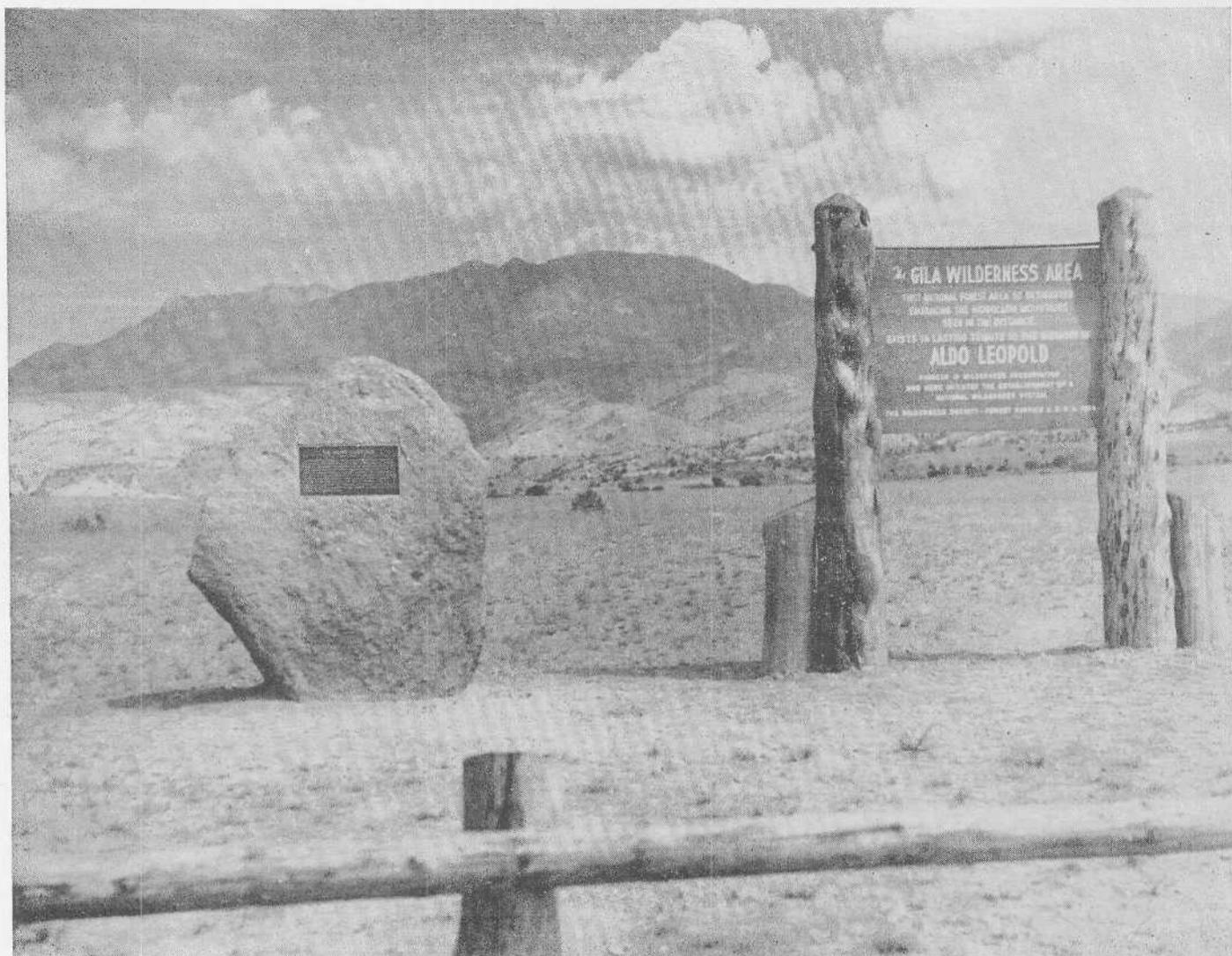
While in the army, Mahone had served under General Crook. One of his most prized possessions was a written recommendation signed by "M. George Elliott, 2 Brig. Infantry, U. S. Army." He carried it until it was badly worn but still legible. It read as follows:

Prescott Junction, A. T.  
10 June, 1889

To whom it may concern:

*This . . . Jim Mahone of the Hualpai Indian Tribe is a trustworthy and intelligent man. He is an old scout, having served under General Crook in the years gone by. Of him, the General says, "no braver man ever trod shoe leather."*

Jim Mahone passed away on August 6, 1949, and the citizens of Seligman gave him a fitting burial. Thus another colorful character of the early pioneer days of Arizona has gone, leaving only his vanishing footprints on the shifting sands of time.



## *He Would Preserve the Primitive Wilderness*

Wrote Aldo Leopold: "In human history we have learned (I hope) that the conqueror role is eventually self-defeating. Why? Because it is implicit in such a role that the conqueror knows just what makes the community clock tick, and just what and who is valuable, and what and who is worthless, in community life. It always turns out that he knows neither, and this is why his conquests eventually defeat themselves."

By WELDON HEALD and RANDALL HENDERSON

ON A HIGH grassy mesa along Highway 260, 12 miles south of Glenwood, New Mexico, stands a monument erected in 1954 to the memory of a man whose work and writings gave Americans a new concept of recreation and conservation.

The man was Aldo Leopold, who for many years was associated with the

U. S. Forest Service, and later became the head of a department for wildlife management at the University of Wisconsin.

Leopold's career as a naturalist and leader in the conservation movement ended tragically in 1948 when he died fighting a grass fire near his home in Wisconsin.

He left two books, published after

his death, which have had a profound influence on the thinking of all conservation-inclined Americans in this decade. *A Sand County Almanac* and *Round River* reveal the philosophy of a man who had a deep love for everything that grows and lives on this earth.

He was an advocate of the development of recreational areas—but even more important, in his opinion, is the development of the perceptive quality in human beings. Men and women, he taught, must recognize that the human species merely is one element in the life of the planet, and that all plants and animals were put here by the Creator for a purpose—and not merely to supply food and clothing and the economic purposes of mankind.

Leopold felt that the "balance of nature" figure of speech commonly used by conservationists who would preserve the integrity of the natural landscape, is inadequate. Rather, he preferred to use an image employed in the study of ecology—the biotic pyramid, clarified as follows:

"Plants absorb energy from the sun.

*The GILA WILDERNESS AREA*

*First National Forest Area So Designated, embracing the Mogollon Mountains seen in the distance, exists in lasting tribute to the memory of*

*ALDO LEOPOLD*

*pioneer in wilderness preservation  
who here initiated the establishment of a*

*National Wilderness System*

*The Wilderness Society—Forest Service, U.S.D.A., 1954*

*Inscription on large sign*

This energy flows through a circuit called the biota, which may be presented by a pyramid consisting of layers. The bottom layer is the soil. A plant layer rests on the soil, an insect layer on the plants, a bird and rodent layer on the insects, and so on up through various animal groups to the apex of the layers, which consists of the large carnivores. . . . Man shares an intermediate layer with the bears, raccoons and squirrels which eat both meat and vegetables."

Leopold wanted Americans who go to the outdoors for recreation to be

something more than mere trophy-hunters, and he defined the term in the following paragraphs quoted from *A Sand County Almanac*:

"The disquieting thing in the modern picture is the trophy-hunter who never grows up, in whom the capacity for isolation, perception, and husbandry is undeveloped or perhaps lost. The trophy-hunter is the caveman reborn. He is the motorized ant who swarms the continents before learning to see his own back yard, who consumes but never creates outdoor satisfaction . . .

## Hard Rock Shorty of Death Valley



"Must have taken those trees a long time to grow," remarked the tourist by way of opening the conversation. He nodded toward the grove of tamarisks on the flat below Inferno store.

Hard Rock Shorty got up from the bench under the lean-to porch and sauntered into the store as if he had not heard the remark. A few minutes later he returned with a broom straw and started poking it through the stem of his corn cob. "Thing kinda gets stopped up sometimes," he explained.

The cleaning job finished, he turned to the newcomer. "You're all wrong about them trees, stranger. They're the fastest growin' things in the world. Somebody brought a few cuttin's over here from Africa a few years ago, an' now they're growin' all over the desert jest like cactus.

"You outta ask Pisgah Bill about them trees," Shorty chuck-

led. "Pisgah went down to Barstow one summer an' bought a lot o' tamarisk fence posts. That was the year he got the notion o' breakin' wild burros fer pack animals. Burros brought good money in them days, an Pisgah offered the Injuns two dollars a head fer all the animals they'd bring in.

"The Shoshones would drive 'em up dead-end canyons and then lasso 'em an' soon Pisgah had more donkeys than his old corral'd hold. So he brought in them fence posts an' strung 'em with barbed wire, an' had room enough in his pasture fer all the burros in Death Valley. 'Fore long he had the lot full of 'em.

"Then one night we had one o' them August showers. Rained six inches in three hours. Next mornin' when Pisgah went out to count his burros them fence posts wuz all full-grown trees. The barbed wire fence wuz eight feet in the air—an' there wuzn't a jackass in sight."

"The trophy-recreationist has peculiarities that contribute in subtle ways to his own undoing. To enjoy he must possess, invade, appropriate. Hence the wilderness that he cannot personally see has no value to him. Hence the universal assumption that an unused hinterland is rendering no service to society. To those devoid of imagination, a blank place on the map is a useless waste; to others the most valuable part.

"It would appear, in short, that the rudimentary grades of outdoor recreation consume their resource-base; the higher grades, at least to a degree, create their own satisfactions with little or no attrition of land or life. It is the expansion of transport without a corresponding growth of perception that threatens us with qualitative bankruptcy of the recreational process. Recreational development is a job not of building roads into lovely country, but of building receptivity into the still unlovely human mind."

The New Mexico plaque dedicated to the memory of Aldo Leopold in 1954, was placed there by the American Wilderness Society and this spot was selected because it is just inside the boundary of the Gila National Forest. In this region, through Leopold's interest, was established the first of the 78 Forest Service primitive areas in the United States.

As one of the fruits of Leopold's life-long endeavors, there were introduced in the last session of Congress measures designed to extend the primitive wilderness areas throughout the system of National Forests, and these measures are scheduled to be re-introduced again in 1957.

### FEBRUARY WILDFLOWER OUTLOOK DISCOURAGING

The prospects for a lavish wildflower display in February are almost nil, report *Desert Magazine's* Southwest correspondents. The area's prolonged drouth has extended into the new year and unless generous rains are received in late January and February, this will be a poor year for wildflowers.

Only from Joshua Tree National Monument on California's high desert comes encouragement. Bruce Black, park naturalist, reports that his area received light rains in October and December and at the very least, visitors should find bladder-pod, desert lavender, desert alyssum, chuperosa, rock-pea and thamnosma blooming in February.

M. B. Ingham, Jr., park naturalist at Death Valley National Monument, said that during February any flowers visitors can expect to see there would be at elevations below 1500 feet.

# Green Garden Stone Above Old Ravenna

Collecting stones for the home rock garden and for path and drive borders is one of the most enjoyable and rewarding phases of the gem and mineral hobby. Recently Jay Ransom made a trip to Soledad Canyon on the edge of Southern California's Mojave Desert—not for garden stone, but for moss agate also found in this area. So beautiful and accessible, however, was the emerald green waxy quartz vein of rock garden material he discovered, the quest for the much-prized agate became secondary.

By JAY ELLIS RANSOM  
Photographs by the author  
Map by Norton Allen

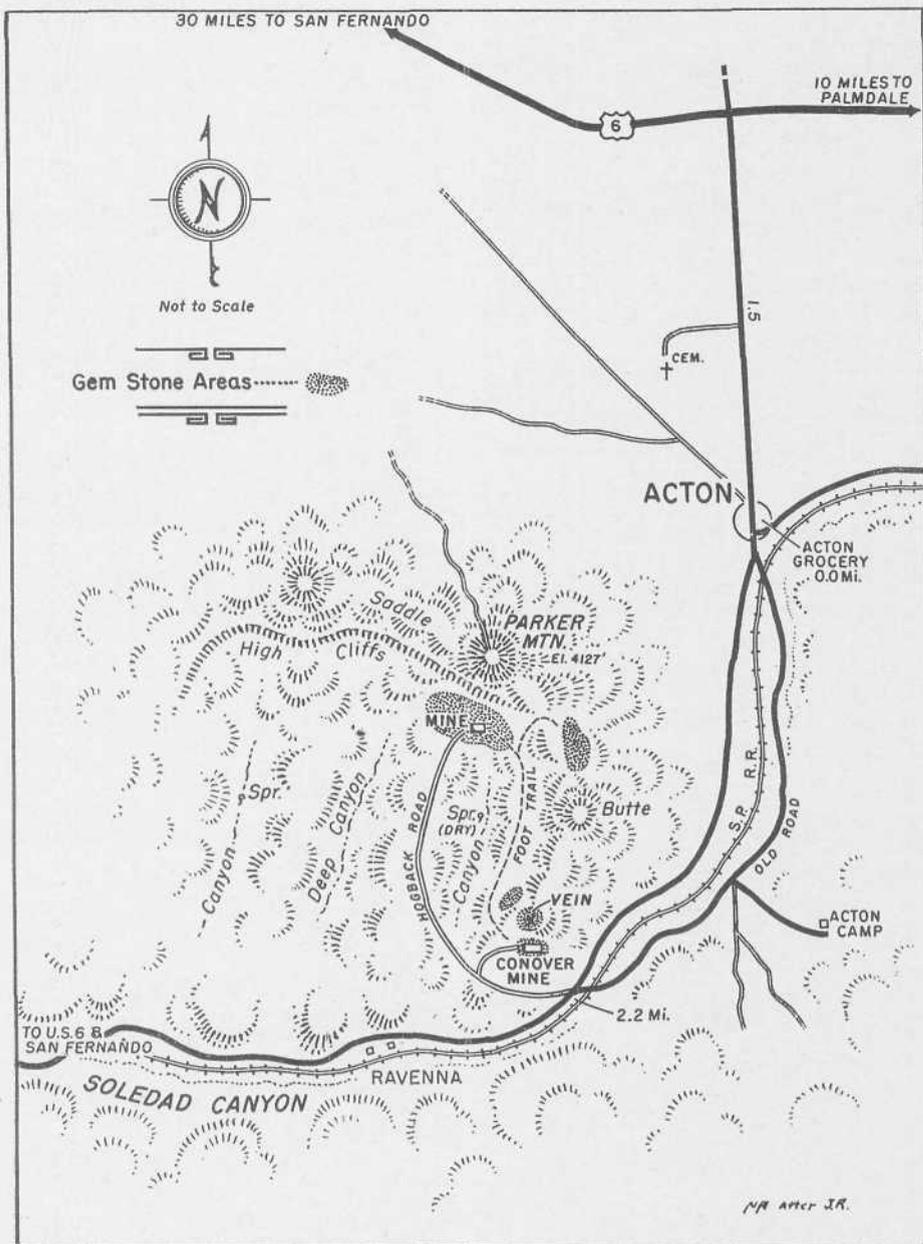
GOING THROUGH an old California guide book recently, I came across a description of the community of Ravenna in Soledad Canyon four miles southwest of Acton: "Ravenna: population 32, an old settlement, quaint and hospitable, famous for its moss agates and grizzly bears!"

Recalling the mountainous country around Mint and Soledad Canyons, almost devoid of vegetation, I could not imagine what a hungry grizzly would feed on. More likely, in the days of the Spanish land grants, the creatures were predators feasting on the herds of long-horn cattle. Today, if even a ghost of a grizzly bear remains in the neighborhood, it must be holed up in the rugged mine-gouged mountains that rise so steeply from both sides of Soledad Canyon.

But moss agates are bears of another breed! I've tramped along the

*Conover Mine loading chute overlooking Soledad Canyon. Detritus pile is rich in green quartz gem quality material, and green waxy quartz vein is on the steep slope above the chute. Canyon stream bed is source of moss agate.*





Yellowstone in Montana looking for the beautiful black-moss agates, and have garnered a fair share of red-plume agates from south-central Utah. Ransom Senior has picked up just about every other kind of agate there is in the nation from most of the known sources as well as from a lot of other fascinating places kept secret by their jealous claimants.

We decided to visit Ravenna and see for ourselves what kinds of rocks there might be there. We located the moss agates, all right, along the bottom of Soledad Canyon where old stream gravels carry water during the rainy season. But we found more than that to interest us—rock garden material of unusual beauty!

It was my neighbor across the street who unwittingly changed the course of this rock trip. He has a garden, one he proudly refers to as “the rock

garden.” He doesn’t know an agate from a horned toad, but he recognizes a pretty rock when he sees one. And like him, there is a vigorous fraternity of folks who collect pretty rocks as rock garden decor. If a stone has color who cares what its technical name is? Consequently, when we discovered a four-foot vein of beautiful green silica, we lost interest in grubbing around for mere gem stones. There, above the abandoned workings of the Conover Mine, this vein, like an enormous banded emerald scintillating in the bright sunshine, had not been excavated by miners, but quite obviously by rock collectors.

Frank Frauenberger, 57, helped us become oriented in the Ravenna-Acton area. Frank used to sell us gasoline in Hermosa Beach, but tiring of big city life he took his attractive wife Fannie and emigrated up Mint Can-

yon to Acton where they took over the combination grocery, postoffice and service station.

Frank greeted us enthusiastically—tall, big-boned, as genial a host as we could find anywhere. His wife was busy behind the grocery-laden counter talking with customers. Seeing our puzzled expressions, Frank explained: “Fannie has been enjoying herself more since she took over the store than I ever thought she could a year ago. She didn’t have enough to do back in the city to occupy her time.” He looked fondly over at his wife putting groceries into a bag. “Of course, she didn’t like it here at first. Too raw a desert, and so dry! She didn’t know anybody and she wasn’t at all happy. But not for long. Before I knew it she was acquainted with most everybody in this whole trading area—must be a thousand folks or more—and was calling ‘em all by their first names. It made a change in her, too.”

What brought Frank Frauenberger back to the Mojave was what takes a lot of older folks back to childhood scenes—a nostalgia for old remembered things, people and places. Frank’s father, William, took up a homestead here in 1919 known as the Monte Grande Ranch. It lies along the railroad about three miles down Soledad Canyon from the postoffice. There for some years the elder Frauenberger raised chickens and turkeys. “The ranch is near the old Fort Tejon stage road built through these mountains,” Frank said. “Today, of course, most of the old road is gone and the Southern Pacific Railroad comes through in its stead.”

The family later settled in Hermosa Beach where Frank’s father still resides in good health. But each year, father, brother, sister and Frank, whenever he could get away from his service station, returned to the old desert homestead for their vacations. “I should have moved back here long ago,” Frank said, ruefully. “It’s healthy for both of us out here; hot as blazes in summer, sometimes pretty cold and snowy in winter on account of the elevation but fine country to live in.”

Frank has not had time to learn a great deal about gem stones although he has accumulated quite a store of information. Whenever a rockhound drops into his store for a cooling drink, he’s ready with all the local gossip about where to look for gem stone materials. It seems that the mining-minded residents confide in Frank. His own interest lies more in rock garden material, and he keeps the grounds around his store and adjacent home as neat as he ever did his city property.



*Frank and Fannie Frauenberger in front of their Acton store and postoffice.*

It was he who told us about the Conover Copper mine up the steep slant of the mountain from Ravenna. We drove south and west 2.2 miles—about two-thirds of the way to Ravenna—over the new Soledad Canyon road. This is a very fine new paved highway that replaces the old winding Soledad asphalt. The old road crosses the railroad tracks just south of Acton and, circling past a county honor farm, recrosses the track onto the new highway at mile 2.2, almost in front of the entry road through the fence onto Conover Mine property. At the entrance, from which any gate that might have hung at one time had long vanished, we turned in and drove up the dim tracks one-tenth of a mile.

Parking is easy along the lower portion of the road. From there, the hike along the old deeply eroded tracks to the Conover Mine was not difficult.

Mines in the Soledad area were best known for their production of gold, copper and silver found in bull quartz veins. The basal rocks exposed in the region appear to be andesite of late Mesozoic age associated with Miocene sandstones and quartz monzonite. It's true rock hunting country.

All up and down the precipitous slopes we found chunks of green silica float—massive quartz deeply stained with an emerald translucence, waxy like jade and cool to the touch. As we hiked upward, Ransom, Sr., continually picked up specimens and

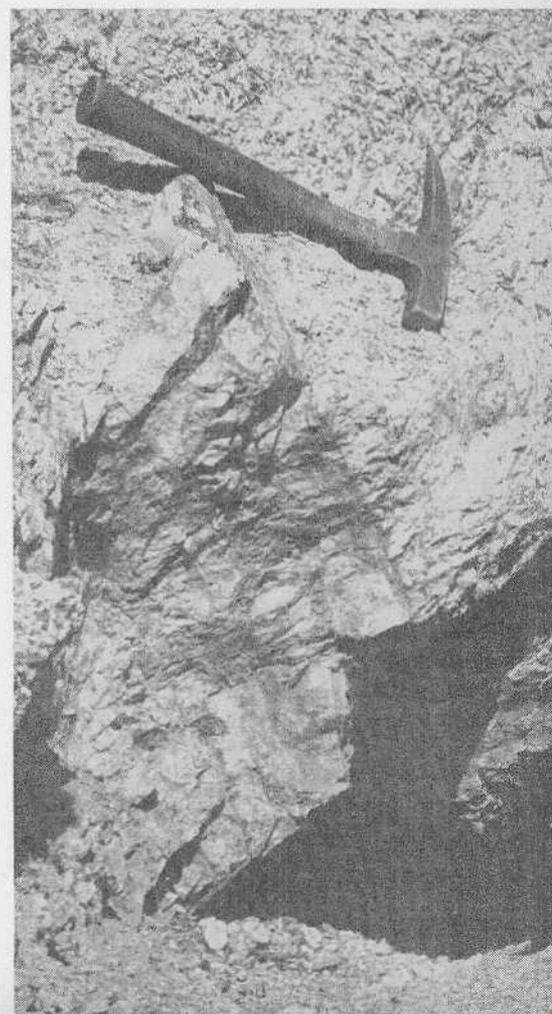
tested them with his prospector's hammer, sometimes exclaiming over the color and texture. Pausing frequently to take a breather gave me an opportunity to look over the country.

Below us Soledad Canyon wound in a tremendous gorge through the mountains, hardly more than a quarter mile wide. We looked almost straight down upon the county farm and the community of Ravenna strung out green with shade trees along the railroad tracks and the highway. In the bright morning sunlight the valley scene was peaceful. Beyond, the ragged bulk of the mountains lifted along the ancient San Andreas fault. They stood etched in soft pastel blue haze that pervaded the morning air from railroad engines which had chuffed through the canyon spewing their smoke and exhaust into the crisp dawn.

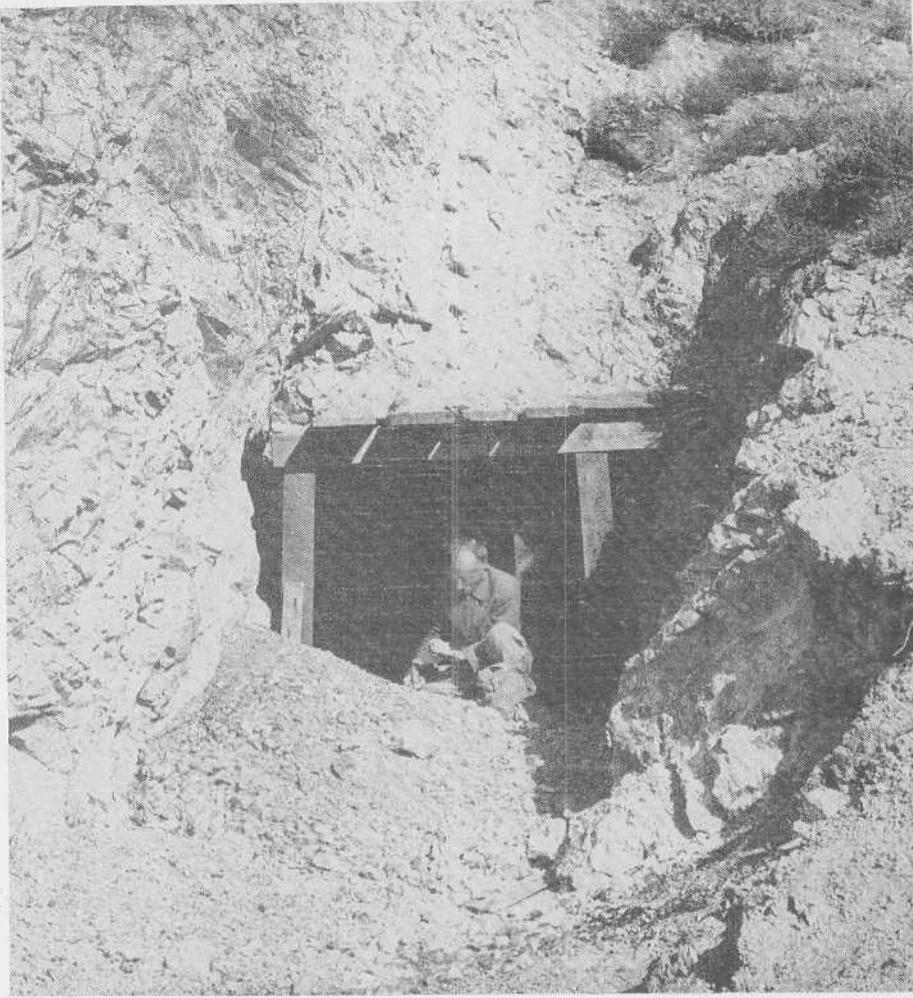
On all sides the mountains whirred with the quick darting movements of quail. Some scuttled deeper into the creosote bushes at our approach while others, mottled in gray and brown and startled by our sudden appearance took wing and circled out over the canyon depths with wildly beating ruffed wings. An occasional jackrabbit lifted

in erratic flight, only to crouch behind a distant bush where he surveyed us with beady, suspicious eyes.

The Conover Mine was nothing



*Four foot wide Conover copper vein. All of the material below the hammer is beautiful deep green waxy quartz, ideal for the home rock garden.*



*Jay Ransom, Sr., examines copper-silver specimens in main tunnel of Conover Mine. Vein strike is visible above framing.*

much to look at. In production for several years, it was a patented mine which belonged to the Tonopah Milling and Mining Company in 1927-28. Later, two men, Crawford and Gage, secured the right to reopen it and they took out ore at various times, the last mining being done in 1949. Now there is nothing left but the loading chute, a few horizontal tunnels that wander off into the depths of the mountain, and the narrow railroad bed leading to the slag dump. Even the tracks have been taken up and sold. Remaining, however, is an abundance of beautiful green copper quartz scattered everywhere. And, to our pleasant surprise and delight, on the almost vertical declivity immediately above the lower tunnel we stumbled across a massive outcrop, as deep green emerald in color as the farms veiled in the canyon haze.

This outcrop does not appear to have been mined, although the small excavations about it seem the sort ambitious but ill-equipped rockhounds make. The four-foot vein strikes steeply into the mountain flank. It is

a mineral vein which would interest all gem stone collectors, but because of the mass of rock present, it is of even greater interest to rock garden enthusiasts.

We scrambled up the rugged slope hand over foot, slipping and sliding. A misstep could have sent us tumbling hundreds of feet down the smooth slope. Although the nearby mountains are ringed with high basalt cliffs topped by Parker Peak, we found outcrops of massive green quartz beyond the Conover. Weathered and fractured granite surfaced here and there. The cul-de-sac valley that rises steeply by sharp narrow canyons and ragged hogbacks to the forbidding cliffs was characterized by the deep red lava coloration.

Exploring along a well-defined foot trail from the Conover Mine up the slant of the mountain by easy stages toward Parker Peak, we searched for float. We found plenty of green silica but little else. A road, scarcely more than the weathered remnants of a wheeled track, climbed below us, slanting up a hogback toward the

bluffs where additional mine workings exist. Below the cirque of cliffs to our west lay the rusty, broken segments of a water line reaching for the cottonwoods and willows that disclosed a spring.

There are gem stone minerals in the upper reaches of the cul-de-sac; not only green quartz from the mines, but agate, chalcedony, chalcopryrite, spar and possibly a little serpentine. Indian Tom of the Oasis Ranch in Lawndale, an old time prospector who has explored every foot of this canyon, showed us some head-size rock garden chunks he had picked up at the base of the Parker Mountain cliffs. He said the Conover vein was as nothing compared to the emerald quartz at the head of the canyon.

Parker Peak and its sister knob, connected by a high rocky saddle that breaks sheer in undershot cliffs, is a source of copper. The old mines were located along a feldspar-like contact. Not truly feldspar, this is some very hard white rock which, while not quartz either, makes good rock garden material. In the immediate area and of interest to the gem stone savants, there has also been found here some good grade blue bornite mixed with pyrites.

Some years ago a mining firm removed four or five thousand tons of feldspathic material for use in surfacing golf courses. This is a beautiful blue-green mineral easily obtained by gravity feed down the steep slopes on the north side of the Conover Mine butte. The trail shown on the map leads to the excavations. This green rock is excellent for rock gardens, and there is plenty of it left. As Frank Frauenberger reported to us, it is one of the finest decorative rocks for gardens in the country. Our observation is that some of it also would cut into cabochons. Although we did not look for it, there is a road reaching the site from Acton. Inquiry is necessary to locate it.

About a half mile north of the Conover Mine at the base of Parker Peak is a 500-foot tunnel penetrating the mountain and cleaned of debris several years ago. One can walk all the way in with safety. Immediately above the tunnel entrance is an outcrop of pure bead copper, scattered through the matrix like shiny metal pin heads.

It would have taken several days and gallons of drinking water to explore all the gorges and hogbacks. So, returning to the car laden with colorful specimens, we drove back to Acton to say goodbye to Frank and to show him our samples of rock gardeners' delight.

# Beetle That Stands on its Head

The ways of the persevering Eleodid Beetle are largely a mystery to naturalists. They cannot explain how a creature with such a heat-absorbing black shell can thrive in the arid desert where seemingly more adaptive denizens sometimes perish. And these interesting insects are a source of wonder to Indians, too, who explain some of their strange ways with ancient legends.

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

IN THE AUTUMN of 1815 the Russian exploring ship Rurik came into San Francisco Bay on a round-the-world voyage of discovery. On board were two ardent scientists, the youthful botanist, Adelbert Von Chamisso and his intimate friend, naturalist-surgeon Dr. John Frederic Eschscholtz.

The two men rambled over the peninsular hills where San Francisco now stands and among the new plants they collected was an attractive poppy-like flower which Chamisso named *Eschscholtzia Californica* in honor of his companion. Little did they realize that 88 years later this Golden Poppy would be adopted as the official flower of California.

Dr. Eschscholtz primarily was interested in zoological specimens and among the amazing new insects he collected were some large black beetles of peculiar behavior which later he described under the generic name *Eleodes*, derived from the Greek word *elaiodes*, "like an olive." It was a name aptly chosen. The insect the Doctor had found was the common Tumblebugs now so familiar to desert travelers, and whose body does indeed resemble in form, texture and color a shining black ripe olive.

The big slow-moving eleodid beetles so frequently seen on the Colorado and Mojave deserts of California and the Yuman Desert of Arizona and adjacent Sonora, often are called Pinacate Beetles by the desert people, and a region of picturesque mountains with many colorful craters and extensive lava flows in northwestern Sonora is named the Pinacate Range because of the prevalence there of these beetles. Pinacate is a Spanish variant of the Aztec word *pinacatl*, "a kind of insect." The Papago Indians picturesquely called this beetle "the bug that stands on its head."

One cannot long be on the desert before one or more of these large robust always perfectly harmless insects slowly comes plodding into camp. To me they are always welcome visitors and their presence I consider a herald of good luck even as did certain of the Indians who dwell in the arid Pinacate country.

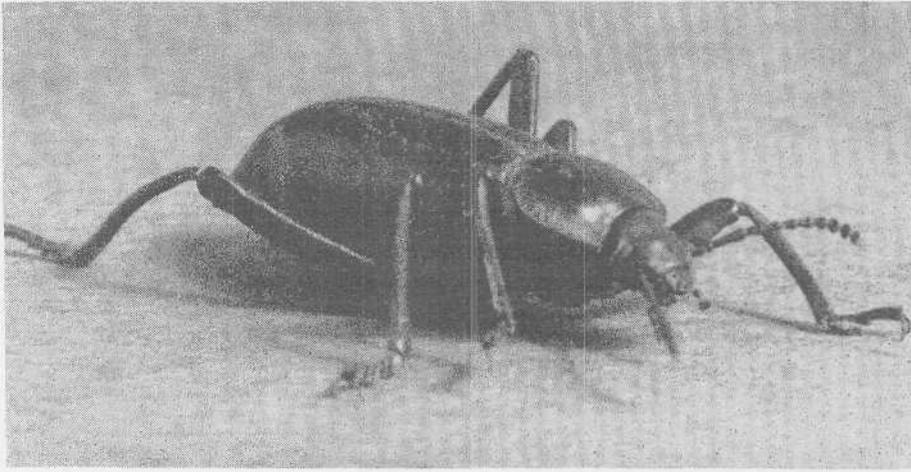
These restless beetles seem always

*According to Zuni mythology Beetle saved his life by duping Coyote into believing that he had overheard a message from the gods under the ground. This explains why the insect stands on his head today, the Indians believe. Drawing by Morris Van Dame.*

hungry and undoubtedly are in search of something to eat. Often I put down bits of melon, apple or other fruits to watch them feed. Their choice of food is wide, ranging from fresh to dead or decaying vegetable matter — they will even crawl into my empty bean can to feed. I have marvelled at this because canned beans are a food almost all wild animals strangely shun; even my omnivorous donkeys will not touch them, nor have I found coyotes, skunks or foxes molesting the bean cans I've buried after breaking camp.

These beetles also exhibit a good deal of dexterity in eating. Time and again I have seen them hold down a





*Eleodid Beetle. Photograph by Kenneth Middleham.*

morsel of food with a front foot, much as a dog does while gnawing a bone.

These strong insects are most persistent. Often, fearing I might trample one underfoot when it came near my campfire, I have repeatedly picked it up and carried it some distance away only to find it back in a few minutes. Once in the Gila Mountains I found one trying to climb the loose soil of a washside embankment. Each time it got part way up the sand gave way and it tumbled to the bottom. But almost immediately another trial was attempted and with similar failure to make headway. Determination and persistence finally paid off, for after 20 trials it got to the top. A valuable and unforgettable lesson in patience and perseverance I learned that day from a humble beetle.

In the spring and early summer I see many Pinacate Beetles engaging in a sort of migration. It is during these times of mass movement that I sometimes come upon dozens of them collected in old badger, coyote or tortoise holes. I have also found scores of them feeding together on the seed refuse surrounding the nests of harvester ant colonies.

There are 123 species of these arid-land Eleodid beetles, all conspicuous because of their black bodies and often large size. Some are smooth bodied, others hairy; some have peculiar ridges and pits on the back. *Elodes armata*, the Armed Tumblebug, is one of the most common on the Sonoran deserts. The biggest of all is the really robust Gigantic Tumblebug, *Eleodes gigantea*, which measures up to one and one-half inches in length. The individuals of any species vary much in size, depending largely on how much food the larvae are able to consume. The adults, once they have emerged from

the pupal stage, never grow no matter how much they eat.

They have few enemies, due to the oily malodorous and nauseating fumes which at times come from the oily secretions of a pair of large glands. I suspect them to be long-lived. An investigator named Labille once kept nearly related beetles of Europe alive in captivity for almost 10 years.

It is the belief of the Hopi Indians that there are at least two animals that have no souls of their own. Rather are their bodies the abode of the dark souls of wicked people as punishment. One of these unfortunate creatures is the small gray nocturnal moth which so often instinctively dashes into the flames of our campfire; the other is the Pinacate Beetle. When these insects perish they are blotted out and with them the souls that dwelt in them, the Indians believe.

One day, say the Zuni Indians, *Eleodes* was crawling about in the sunshine along the path that leads around Fat Mountain. Just then Coyote came along. When he saw the beetle he pricked up his ears, arched his neck, and struck his paw forward. "Ha!" he cried, "Beetle, I shall bite you."

*Eleodes*, much frightened, stuck his head close to the ground and while waving his antennae about begged for mercy. "Don't bite me. Oh, please don't. Wait a bit. Hold on Friend, I hear something very strange down here on the ground," he said.

"What do you hear?" asked Coyote.

"Hush," cried the beetle, his head still held close to the sand, "Listen!" So Coyote turned his head and listened with utmost attention. And Beetle lifted his head with a sigh of relief.

"The Good Souls save us!" suddenly exclaimed *Eleodes*. "I have just heard that on the morrow the gods

will not only chase away but severely punish all those who in any way have defiled the trails of this country. And I tell you they are making preparations for all this as fast as they can."

"Souls of all my ancestors!" cried Coyote, "I've been loitering along the trails this morning and have been guilty of this very sin. Beetle, I'll be gone right now." And away he ran as fast as he could.

In his gladness and excitement, Beetle again stuck his head into the sand.

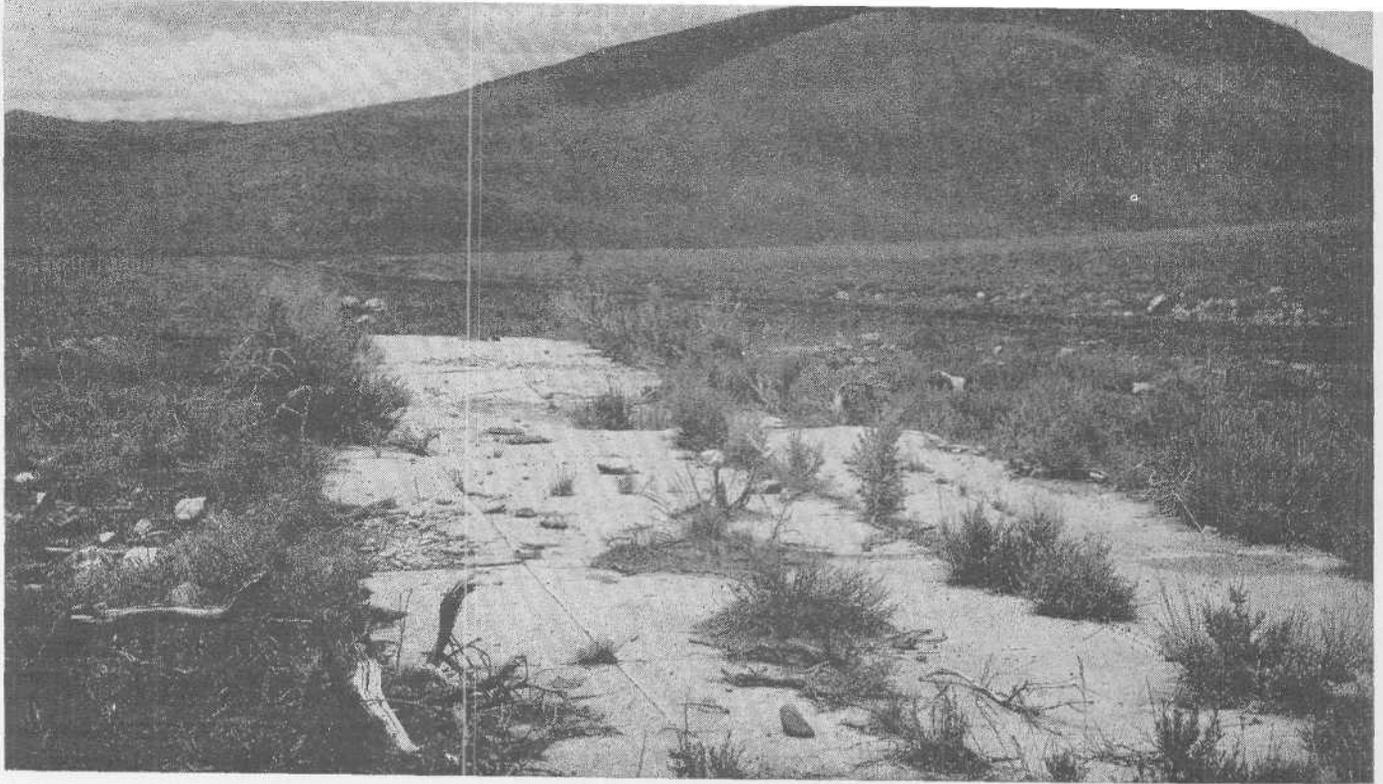
Thus in ancient times did he save himself from being bitten by Coyote, and we have the Zuni explanation of why *Eleodes* sometimes when disturbed stands on his head and kicks his heels in the air.

One day I became curious to learn what was under the high-arched black wing covers. A dissection revealed a large hollow air-filled space above the insignificant flat abdomen — an air space which undoubtedly becomes a hotbox or oven when the noonday sun shines down on the black heat-absorbing wing covers of these flightless wholly ground-dwelling creatures.

Inconspicuous grays and browns are the normal colors of desert animals given to moving about in the broad sunlight. Rarely do we find diurnal creatures whose bodies are mostly black. Among these latter are a few birds such as ravens and turkey buzzards and in the Mid-East and African deserts numerous species of birds known as wheatears and chats. Among reptiles with much black on their bodies are the American desert-inhabiting chuckawalla and in the Algerian Sahara, the spiny-tailed lizard, *Uromastix*.

Perhaps the most common and remarkable of black inhabitants of all deserts are the Tenebrionid or Darkling Beetles, most of which are intensely black. Our Pinacate Beetle is one of these. One immediately asks, what advantages are gained by this dark coloration? Certainly not protection from predators for black creatures are very conspicuous against the gray desert background. It must be frankly stated that we do not know; speculate as we will, we are still left to wonder.

When on your next desert wanderings you see a Pinacate Beetle, treat him with respect. Make him feel at home about your camp. Try to learn the secret of his survival in a land often harsh and barren where only the hardiest xerophytic plants and water-conserving animals eke out an existence.



*Only this short length of cement sidewalk remains to mark the business district of Gold Creek. Island Mountain is in background. Photograph by the author.*

## *Only the Sidewalk Remains at Gold Creek...*

Gold Creek lived and died in the '90s, its only records entombed in the yellowed pages of deceased journals, the memories of the few old timers who remember life at this placer camp—and the short length of sidewalk upon which trod men and women who dreamed of a city which "in another year will be the largest town in Nevada . . ."

By NELL MURBARGER

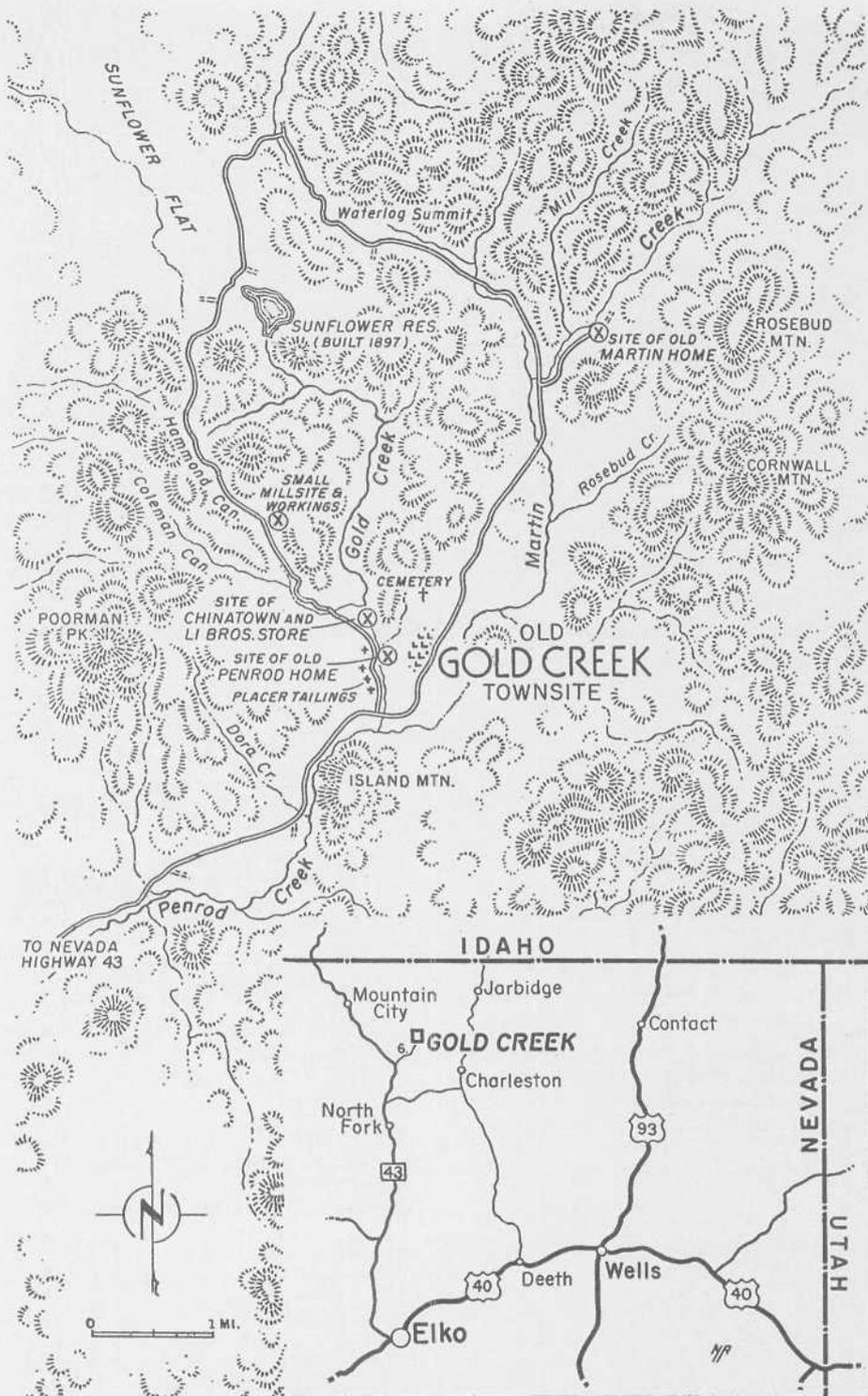
*Gold Creek, Nevada, in 1897. Photograph courtesy Nevada State Historical Society.*

FREDA FINE of Elko, Nevada, first brought to my attention the ghost town of Gold Creek in the northern part of her county.

"The old camp is about gone," Freda had written me. "All that remains is one short length of cement sidewalk, lost in the sage . . ."

That a settlement once sufficiently important to have had cement sidewalks could have vanished so completely was a circumstance to whet the interest of any chronic ghost townner,





and I knew I would never be wholly at peace with my conscience until I followed the Gold Creek trail to its end.

From tax records at the courthouse in Elko I learned that the townsite had been laid out in 1896; and from files of the *Elko Free Press* of 1897-98, I gleaned a few references to this then flourishing center.

But beyond this, the trail back to Gold Creek's past seemed lost, and during the first four years after Freda had told me of the camp all the pertinent information I was able to collect

might have been typed on one sheet of note paper.

Then, in a manner of speaking, I hit the historical jackpot!

In the vault room of Nevada State Library at Carson City, I located a complete file of the *Gold Creek News*—a wide-awake weekly journal, edited and published at Gold Creek, Nevada, in the pre-Spanish War days when that place was a booming gold camp!

In its first edition published December 24, 1896, *The News* took a quick look backward at the earlier history of the region, and from this retrospec-

tive view I learned that the discoverer of the district had been Emanuel "Manny" Penrod—former partner of Henry Comstock at Virginia City and originally part owner of the claim which developed into the rich Ophir mine. Like many of the first locators on the Comstock, Manny was crowded out. With his family he emigrated across the state to Elko County. He located near the north base of Island Mountain, discovered placer gold in a small stream subsequently named Gold creek, and in 1873 or '74 organized the Island Mountain mining district.

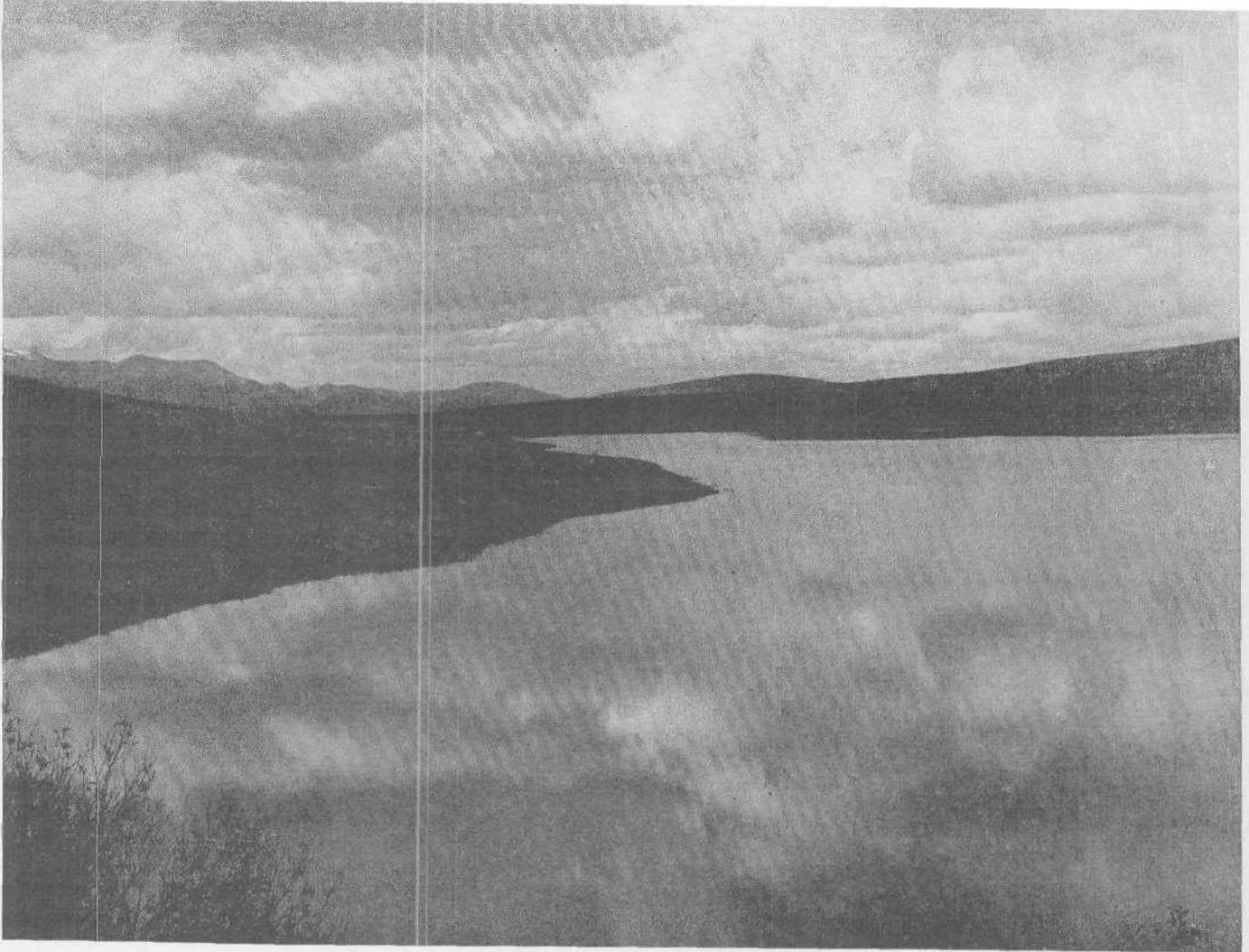
Others filtered into the region in the years immediately following, including a few Chinese—former laborers on the newly-completed Central Pacific railroad—who drifted over from Tuscarora's populous Chinatown. Most of the Chinese, as well as a few Indians, found employment with Penrod on his placer claims. In 1878 a small general store was opened at the forks of Gold Creek a mile above the Penrod home by a Tuscarora Chinaman named Hung Li. If this embryo town had any name at all it was Island Mountain—predating the boomcamp of Gold Creek by 18 years.

Penrod and his crew and a handful of other miners had everything to themselves for two decades—a rather strange fact considering the evident richness of that placer field. As early as 1876 nuggets valued at \$50 each had been found in Gold Creek and gravel averaged a dollar to the pan in gold! Penrod and his neighbors, using primitive equipment, took out \$800,000 worth of the yellow metal in 23 years. Of that total, approximately \$250,000 was credited to Penrod, and this despite the fact that gold was priced at only half what it is today, and the placers could be worked for only 60 to 90 days each year due to a scarcity of water.

In 1896 the Gold Creek Mining company—a New York stock corporation—was organized, the new town of Gold Creek surveyed and platted on the other side of the ridge from the Penrod home, and a mad mining boom was under way—all in one headlong rush!

First building erected on the new townsite was the office of *The News*—a frame structure 20x30 feet. Within 48 hours after the printing equipment was unloaded from the wagon in which it had been freighted 75 miles from Elko, the first copies of this new journal rolled from the press.

The first edition reported that streets were being graded, a thrice-weekly freight line was in operation to Elko, the first load of lumber for construction of a three-story hotel had arrived



*Sunflower Reservoir, built in 1897 to supply water for Gold Creek placer mines. Before the connecting ditch could be completed, the mining company ran out of money and the water was never used. Photograph by the author.*

that day, electric lights and a water-works were to be installed at once, and it predicted that within a year the town would have a population of not less than 5000!

This same issue contained the professional cards of three engineers—mining, hydraulic and civil—with offices at Gold Creek; also the announcement of an assayer, and the advertisement of Laundryman Charlie Wah of No. 9 Pekin Ave., Gold Creek. In its second issue *The News* carried an ad for the old Chinese merchant at Island Mountain.

"HUNG LI, General Merchandise," announced that printed appeal. "Fine Display of Rich Silks, just received. A large stock of Chinese rice and whiskey. Call and be convinced. Everybody knows me as Lem, and I have been in business here 18 years. No. 1 Pekin Ave., Chinatown, Gold Creek."

On January 7, 1897, nearly a million feet of lumber, purchased at Truckee by the Gold Creek Mining company, had arrived in Elko by rail and was being mule-freighted to Gold Creek to meet the urgent demand for building materials.

"Where only a few days ago was an unbroken snowfield, the town of Gold Creek is rapidly springing into existence," the paper declared. "The light of the carpenters at work is seen from a distance far into the night. One of the finest hotels in the state is rapidly going up, only to give way in the near future to a substantial brick structure. Six and eight-horse teams are arriving daily with lumber and supplies, and their campfires at night dot the valley of Penrod Creek. Some 150 loads of lumber will arrive this month . . ."

It was the company's intention, said *The News*, to make Gold Creek "the best appointed mining camp on the continent."

*The News* reported that small gulches were yielding \$200 to the running foot in gold; Crevice gulch had run \$150 to the cubic yard of gravel, and \$5 in gold to a pan of dirt "is not uncommon."

Even State Surveyor General Pratt had weighed Gold Creek's mines in his official balances and found them worthy of commendation. His report of January 30, 1897, stated that 300 men were then on the company pay-

rolls. Fifty were at work in the diggings, and 250 men and 150 teams were engaged in building an eight-mile ditch to connect with a three billion gallon reservoir which would supply the company's placer operations with 2500 miner's inches of water every 24 hours for 200 days out of each year. The district included 6000 acres of placer ground, stated Surveyor General Pratt, with the gravel averaging 60 cents per cubic yard in coarse gold "worth \$19.47 an ounce."

Miners were receiving \$3 for a 10-hour day; teamsters \$6 to \$8 a day for four-horse teams, and laborers on the reservoir—mostly Chinese—were being paid \$2 a day. The stage, even in midwinter, was making the 75-mile trip to Elko in 10 to 12 hours, and freight was being brought from that point for a cent a pound.

"If an election was held at this time," said *The News*, "Gold Creek could poll more votes than any other town in Elko County. In another year it will be the largest town in the state . . ."

Gold Creek postoffice was established February 20, 1897, with Judge J. B. Abel serving as postmaster. By

March 4, two doctors had hung their shingles in Gold Creek windows; Gold Creek Mercantile company was in position to supply virtually all the wants of man; a meat market had opened for business; and a sawmill, hardware store and drug store were soon to make their bow.

New advertisers appeared in *The News* from time to time, and by the autumn of 1897 its columns carried the messages of a dozen saloons, lodging houses and general stores, as well as a professional directory of architects, engineers, assayers, doctors and others.

But despite all her flourish and flaunting, Gold Creek was riding on a one-way ticket — her destination: the Quagmire of Debt.

First intimation of this fact was an announcement on November 26, 1897, that the Gold Creek Mining company was being reorganized and that "outstanding obligations will be met."

Nor was even *The News*, itself, prospering too well, judging from an appeal by the publication's then current editor, Dunbar Hunt: "If anyone owing *The News* \$2.50 will come around and settle it we can get the paper for its next number out of the express office. If not, we will have to resort to wrapping paper."

Evidently the editor's appeal brought forth funds sufficient to ransom the impounded shipment of newsprint, for the next two issues of the paper appeared as usual. With the second of these issues—December 10, 1897—the little frontier journal apparently breathed its last.

There followed a complete news blackout which remained unbroken until February 5, 1898, when the *Elko Free Press* observed: "M. J. Curtis, who put up the Waldron block in Gold Creek, has commenced suit to foreclose a mechanic's lien on the property. There are so many different kinds of suits plastered on this lone building that it is hard telling who will get the rafters . . ."

So that was the history of Gold Creek, Nevada — a boomtown born with the fanfare of trumpets, and buried without even the sounding of taps.

"Uncle" Hugh Martin is a native of nearby Mountain City who has lived in this vicinity throughout most of his busy 83 years.

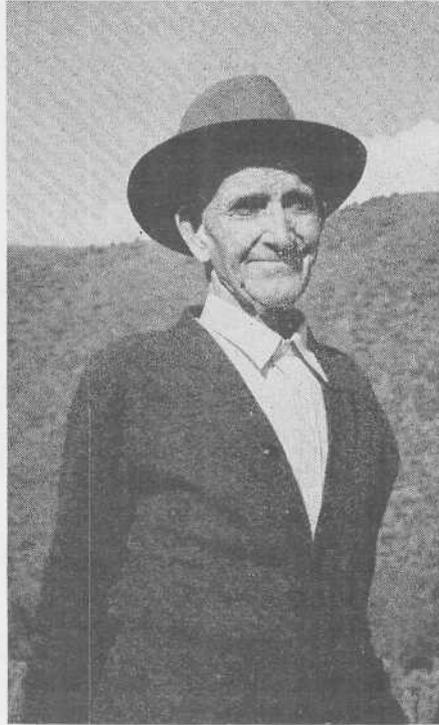
I found him working in the flower garden back of his small white cabin on Mountain City's main street — a slender, neat, happy-looking man with a youthful face and eyes that sparkled merrily when he spoke.

Yes, he said, he had been at or near Gold Creek during the "excitement"—his parents having moved from Mountain City to a ranch on Martin Creek

in 1878 when he was six years old. There he and his brothers and sister had grown to young adulthood witnessing the Gold Creek boom from start to finish.

After we made plans to visit the site of Gold Creek on the following day, I went across the street to spend the night with Uncle Hugh's niece and her husband, Ellen and Claude Womack.

The Womacks are nice folks. Claude has been constable of Mountain City for many years, and Ellen is pretty and gray-haired with bright friendly eyes and a quick infectious laugh—the



*Uncle Hugh Martin. He saw the Gold Creek boom begin and end. Photograph by author.*

sort of woman anyone would be fortunate to have as a neighbor. Claude and Ellen own a few small cabins—all spotlessly clean—which they rent to travelers and sportsmen. The one Ellen assigned to me was furnished with a good bed, table and several easy chairs along with a white-crockery washbowl, a bucket of well water, an old-fashioned copper teakettle, a wood-burning cookstove and a big box full of pine wood and kindling. She said she usually got \$3 a night for the room, but since there was only one of me, I could have it for \$2.00.

Morning dawned bright and sunny, and soon after I had washed the breakfast dishes, Uncle Hugh arrived with Pete Bastida, operator of one of the two general stores at Mountain City, and also an authority on Gold Creek's early history. Pete's parents had homesteaded there during the boom and

later operated a general store a half mile north of Gold Creek proper.

Ellen Womack joined our party and we set off to spend the day in a town that had ceased to exist except in the files of old newspapers and in the memories of a few men and women.

We drove south through pleasant Owyhee Valley, past the little ghost town of Patsville and the turn-off to the once great Rio Tinto mine two miles west. Here the lame prospector, S. Frank Hunt, saw his dream come true when a hidden ore deposit produced \$23,000,000 in copper in eight years.

As we traveled upgrade along the sparkling Owyhee River—one of the few major streams in Nevada which eventually empties into the ocean rather than the oblivion of interior sinks—we were seldom out of sight of beaver dams. The trunks of quaking aspen and willows along the stream banks frequently displayed the teeth marks of these generally-rare animals. We also glimpsed a fat muskrat and on two occasions jumped small groups of deer which had come down out of the dry canyons to drink.

Later, skirting the calm body of water impounded behind Wild Horse dam, Uncle Hugh indicated a sideroad on our left and I swung the car toward the low sage-covered hills which bordered our world on the east and north.

After five miles Uncle Hugh pointed to a dim road leading to the left along the west bank of a small trickle of water.

"This is Manny Penrod's Gold Creek—the stream for which the town was named," he said. "If you want to see the site of Chinatown, we can turn off here."

We followed the little stream toward its source and entered an area torn and tumbled upside down in man's frenzied search for treasure.

"Old Man Penrod worked all this ground in the early days," said Uncle Hugh. "He and his family lived across the canyon yonder, in a nice house built of dressed lumber. The house has been gone for years, but you see that little stone building, beyond the willows?" he pointed to a small vault-like structure without visible windows and only one door. "That little building sat close behind the old Penrod house. I think it had something to do with the assay office . . ."

At a fork in the creek a mile above the little stone building, Uncle Hugh signalled for me to stop.

"Here was the site of Lem Li's store," he said at a shallow cellar-like depression buried in sagebrush.

"He was a nice old Chinaman," went on Uncle Hugh. "Everybody liked him. He always had a little gift

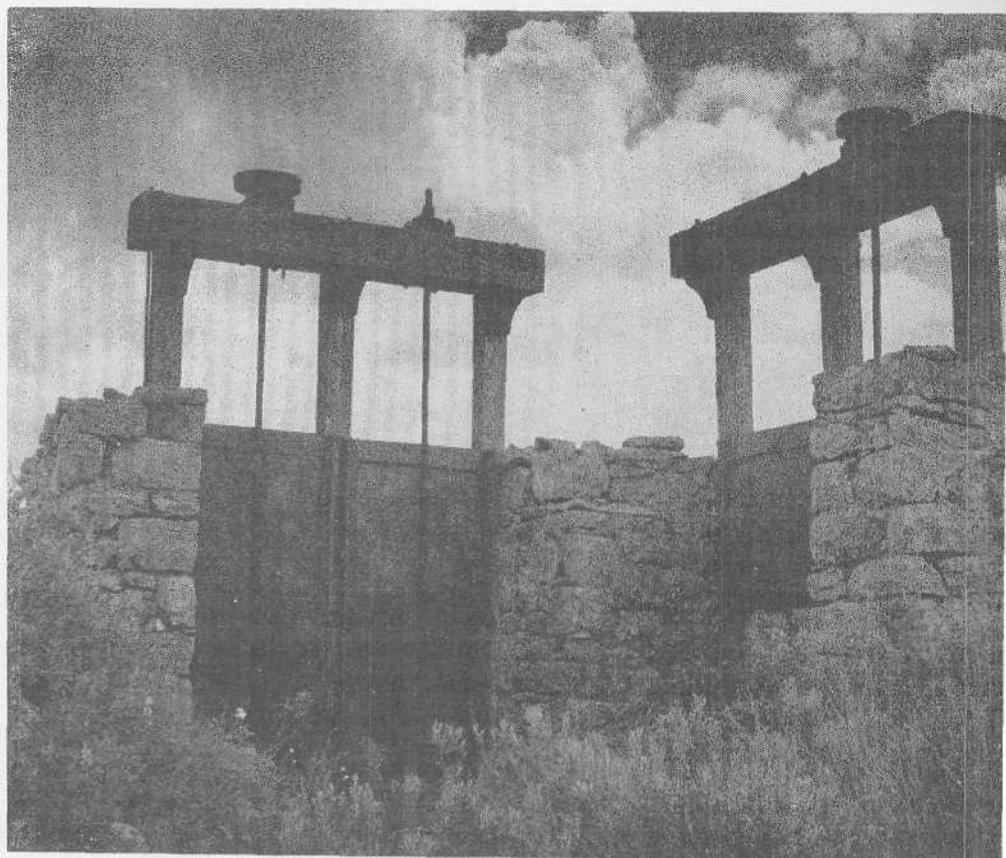
for all who came to his store—a cigar, maybe; or if the customer was a lady, he might give her a little silk handkerchief made in China.

“After Lem died, the store was taken over by his brother, Hong Li of Tuscarora. Hong was nice, too, and the Li brothers ran this store for nearly 40 years.”

From Chinatown our way continued up Hammond Canyon past old mine tunnels and dumps, a few tumbled down cabins and the silent shell of a little gold mill. The higher we traveled into the range, the narrower and more rutted became the old freight road. The sage that crowded nearer to the wheel tracks increased in stature until it towered above the car, and the tips of its soft gray branches almost met in the center of the trail.

Near the head of the canyon, just under 7000 feet elevation, we halted for lunch beside a seeping spring in a small grove of aspen and soon afterward crossed the summit of the range and headed down the other side—our road now leading through hundreds of acres closely massed with bright golden daisies and a cream-colored lupine. In the midst of this cream-and-golden world lay Sunflower reservoir, a calm sheet of water whose still surface reflected the deep blue of the Nevada sky and the form of every summer cloud that floated over it.

This was the great three billion gallon reservoir built 60 years before to



*Massive headgates built to control the flow of water at Sunflower Reservoir. Photograph by author.*

impound the waters of Penrod Creek. Controlled by massive headgates at the head of the dam, these waters were to have been channeled to a point

below the town of Gold Creek for use in hydraulic mining.

“After the company spent hundreds of thousands of dollars building the dam and eight miles of ditch, its money ran out when the ditch still was three miles short of completion. The water in the reservoir never reached the placer ground,” said Uncle Hugh. “That was what killed the town. Until the ditch was completed, the ground couldn’t be mined—and there was no money to complete the ditch.”

“Corey brothers of Salt Lake City, who had contracted to do the construction work, eventually came into possession of the reservoir and canal—probably on a mechanic’s lien in lieu of payment. Later the property was sold for delinquent taxes to Providencio Mendive, a rancher near the highway who still owns it. He uses the dam to water his cattle, but no use has ever been made of the old ditch.”

We drove down the flower-massed slope to Martin Creek and the old Martin homestead—Uncle Hugh’s home of more than three-quarters of a century before. Another few miles down the road we detoured across a rough hillside to the Gold Creek cemetery—a place of five graves and only one marker. In a few more minutes we came to a halt at the abandoned townsite of Gold Creek.

The cement sidewalk lay close be-

*The only building remaining at the site of the old Penrod home is this dungeon-like stone structure. Photograph by author.*



side the main road on our left—a good wide thick sidewalk that well befitted the main business street of a town which men had foreseen as a coming city.

The old walk upon which Gold Creek's assorted commerce had trodden so briefly was still wide and thick, but its ends and edges are crumbled and thrusting stubbornly through the narrow interstices between its squared sections are stiff gray sprigs of the repossessive sage.

Across the slope west of the sidewalk we found the usual tokens of man's former presence—tin cans with soldered tops, fragments of purple glass, broken handles of china cups, bits of sun-twisted harness leather, a bridle bit and enough horseshoes to have brought good luck to a regiment! Circling east of the sidewalk we made our way around caved cellars and past weathered piles of shakes and sheathing where buildings had stood. We even found an old fresno scraper half hidden in the sage.

After the big boom fizzled out early in 1898, said Uncle Hugh, Mr. and Mrs. Jack Hardman, who operated the big store, continued in business here for several years—running not only the store, but also the Gold Creek postoffice, a saloon and hotel. Several families still were living in town, at that time, but the Hardman's business came mostly from ranches and mines in the surrounding territory.

"Gold Creek's farewell fling took place in 1928 when 1500 persons gathered to celebrate the Fourth of July," continued Uncle Hugh. "Everyone brought a big picnic lunch and we had a fine program of races, music and patriotic speeches. Soon after the celebration the townsite and its remaining buildings were purchased by the Moffatt cattle company and Jim Penrod—a son of old Manny Penrod who had died about 1914—was employed to tear them down.

"And that," concluded Uncle Hugh Martin, "is about all I can tell you of Gold Creek's history . . ."

Somewhere, in the course of our journey, morning had turned into midday and midday into evening. And now, the sun had set behind the sage-covered hump of Poorman Peak, the pink flush of twilight had come to lay softly along the horizon and night's chill was creeping into the canyons and the valley.

As I turned the car back toward Mountain City and supper, I realized for the first time that day that I was tired—very tired; yet, eclipsing that weariness was the rich feeling of satisfaction and gratification the day had brought.

## THE *Desert* MAGAZINE CLOSE-UPS

Seventy-five-year-old Carrie S. Fraizer, author of "Arizona Homestead in 1913" in this issue of *Desert Magazine*, is the embodiment of the true pioneer woman. From the tent she and her sister occupied for the first six weeks on their adjoining homesteads to the one-room cabin, she has progressed to a seven room home with all the modern conveniences except a telephone.

And as a true pioneer, she spends more time looking to the future than to the past, and today is making plans to improve her homestead after a proposed rural electrification line comes through and she is able to hook on to it.

We asked Mrs. Fraizer what name she had given her ranch, and she replied:

"I never exactly named the place. Guess I was too busy. Rhoda always called hers *Los Encinos*, The Oaks. We sometimes referred to ours as Sleepy Hollow. After working in the fields all day, it seemed an appropriate name."

H. N. Ferguson, author of this month's "The Great Diamond Hoax of 1872," received his early instructions in mining and mining men from his father, who, as a young man, had participated in the Klondyke gold rush. Ferguson grew up in the Ozark Mountains of Missouri and worked his way through Missouri Valley College as a reporter.

He graduated into the depression and spent four years doing various jobs—from digging ditches to selling cemetery lots—until he went to work for the newly opened Port of Brownsville where he has been Assistant General Manager for the past 15 years.

Three years ago he started writing again. "I'm still a good many years away from retirement, but when it does come, my wife and I would like to spend a lot of time roaming out-of-the-way places searching for feature stories," he said.

\* \* \*

Arizona pioneer May E. Young reaches back into her girlhood for her portrait of "Jim Mahone, Hualpai Scout" in this month's *Desert*. She has lived on cattle ranches in Mohave and Yavapai counties most of her life and is now a guest of the Arizona Pioneers' Home in Prescott.

## Cash for Desert Photographs . . .

Desert Magazine readers are interested in the things you see on your desert treks—birds, ghost towns, Indians, prospectors, insects, hikers, wildflowers, mountains . . . If you are a photographer—amateur or professional—and record these and the countless other fascinating facets of desert life, you should enter your work in the Picture-of-the-Month contest. It is a simple contest to enter and two cash prizes are given each month.

Entries for the February contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than February 18. 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. For non-winning pictures accepted for publication \$3 each will be paid.

### HERE ARE THE RULES

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

Address All Entries to Photo Editor

*The Desert Magazine*

PALM DESERT, CALIFORNIA

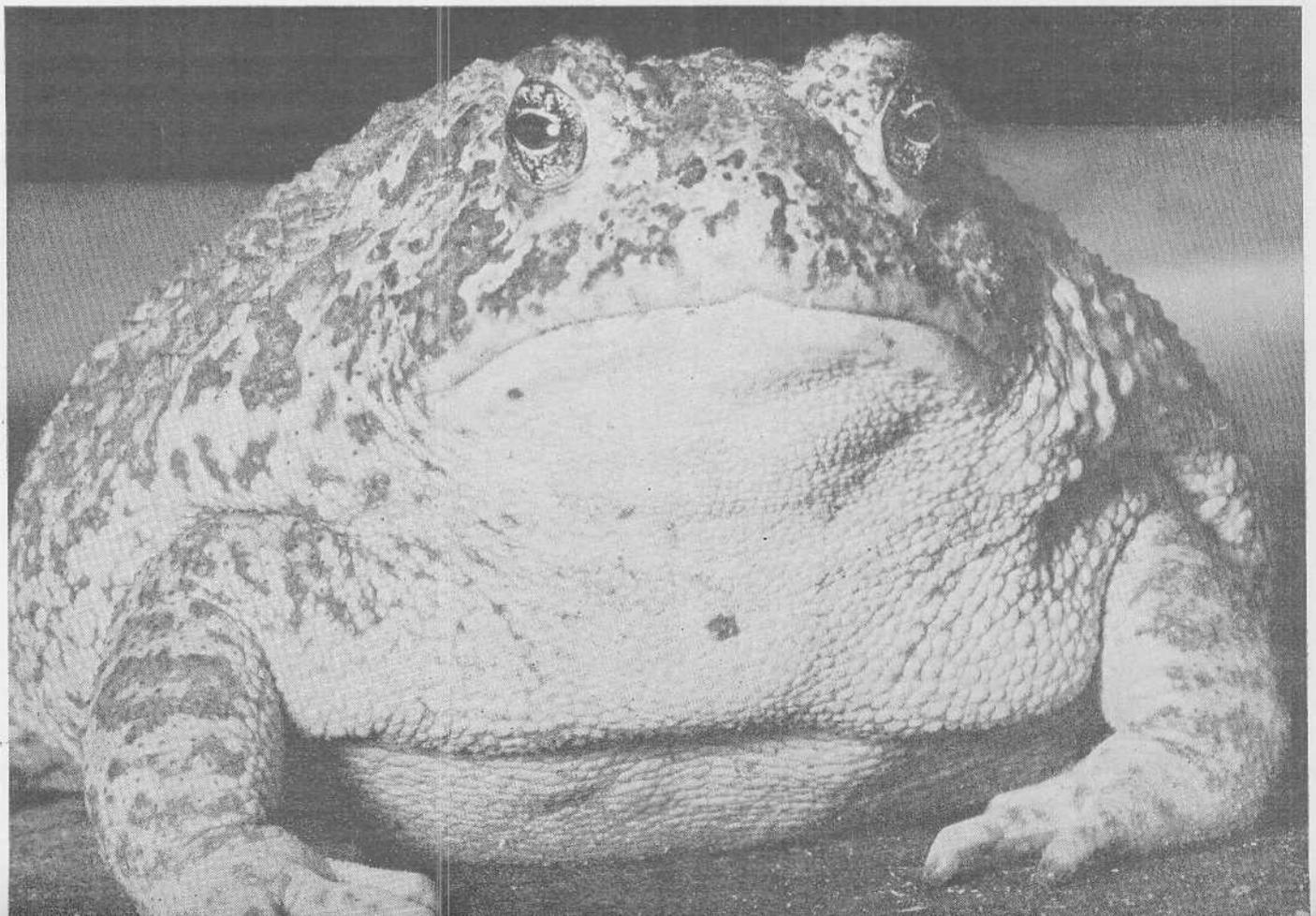
## Riding High

Erwin Neal had his ups and downs while performing in the saddle bronco riding event at the Blythe, California, Championship Rodeo. First prize winning photographer is L. D. Schooler of that city who used a Rolleicord camera at f. 11, 1/500 second on Plus X film.

## Pictures of the Month

### Mr. Toad

This insect's eye view of a toad won second prize for Dick Randall of Rock Springs, Wyoming. The genus *Bufo* is found in almost all parts of the world including the desert where one would normally not expect to find these amphibians. Most toads are active at night and in the daytime seek shelter beneath rocks, boards and other surface objects or in rodent burrows. Randall used a 4x5 Speed Graphic camera, royal pan film, f. 32 at 1/800 second with strobe light illumination.



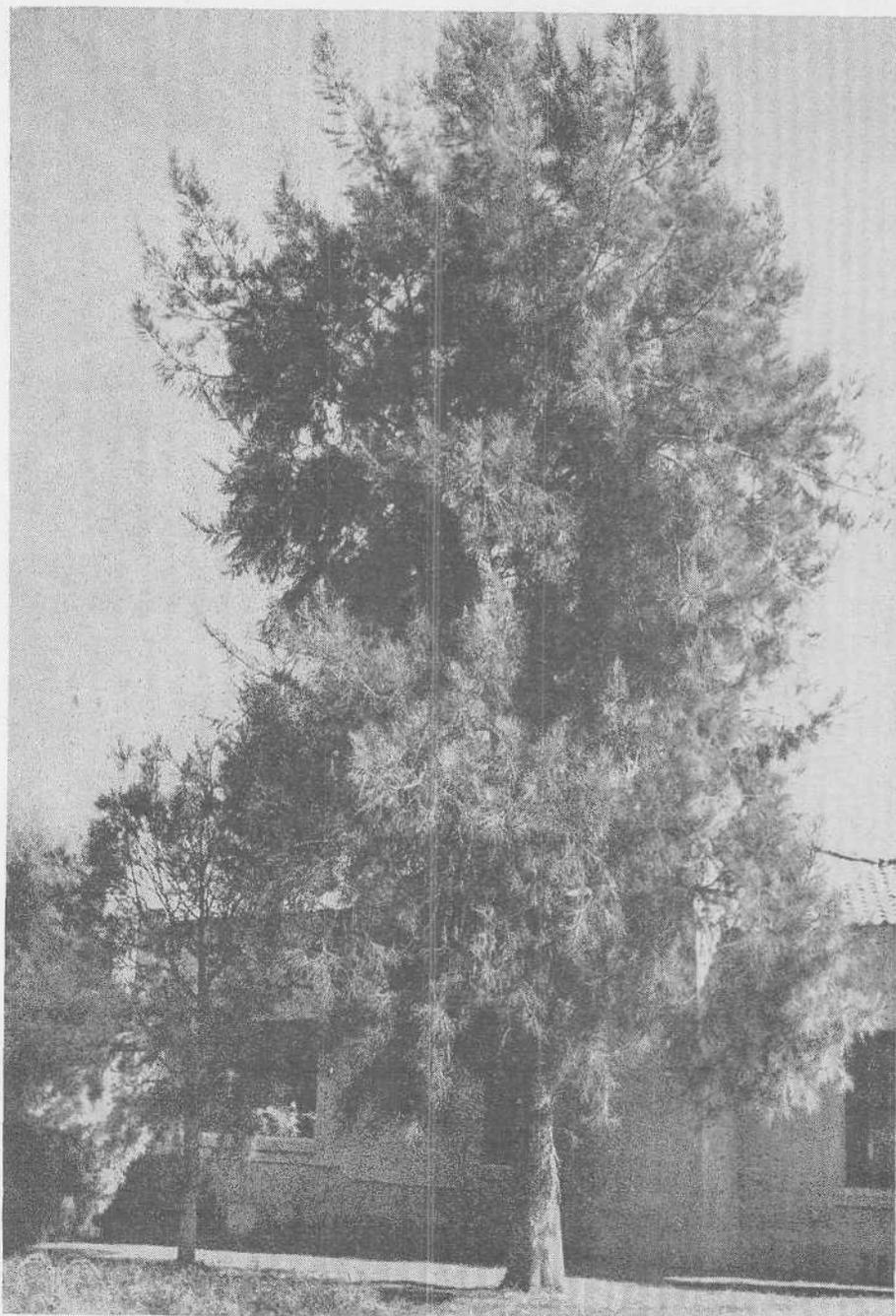
## HOME ON THE DESERT

# When Desert Dweller Plants a Tree . . .

In this arid desertland where the botanical world is represented by relatively few species that grow taller than man himself, it is dutifully important that we plant trees alongside our city or country homes. With many fast growing varieties readily available for transplanting, it is only a matter of a few years before homeowner and passerby alike can enjoy these remarkable gifts of beauty, shelter and inspiration.

By RUTH REYNOLDS  
Photographs by Helen Gardiner Doyle

*To shade the west side of the Reynolds home these two beefwoods were planted 20 years ago in small shallow holes. The one at the right grew mightily, feeding beneath the adjacent front lawn where the top soil was a foot deep. The other struggled along where the top soil scarcely covered the caliche.*



**A**S TREE - PLANTING time progresses through winter and into spring I sometimes find myself nostalgically recalling the Arbor Days of long ago. What has become of Arbor Day? Arizona has two, of which little note is taken. Both of them—April 1 in the southern part of the state and the first Friday in April in the north—bypass the winter season for planting dormant trees in favor of spring, when the many non-deciduous trees of the Southwest may be planted.

To me Arbor Day always is associated with the planting of an apple tree; or rather with "The Planting of the Apple Tree" by William Cullen Bryant, which, as a child, I memorized and recited in observance of the day. Many years have passed but I still recall the lines:

*We plant upon the sunny lea,  
A shadow for the noontide hours,  
A shelter from the summer showers,  
When we plant this apple tree.*

How the poem inspired me! I became quite dedicated to the planting of apple trees—hundreds of them. Or, I should say, to the idea of planting apple trees for I fail to recall ever having planted one. But my tree planting creed has stayed with me although, as time passed, my interest broadened to include trees other than apple and I realized that my doctrine was a pretty universal one.

It was Alexander Smith who, in the 19th century, wrote "A man does not plant a tree for himself, he plants it for posterity." This being true, the planting of a tree is indeed a noble and unselfish act. And any man going through life without planting at least one tree would seem to be remiss in his obligation to future generations.

The man who lives on the desert and never plants his tree not only will leave none to posterity, he is likely never to have a tree at all and to find himself forever with no leafy boughs to shade him.

This fact was impressed upon me a long time ago—before we had quite arrived at our desert destination.

We had started out on the morning of our last day's drive westward toward Tucson with a nice lunch to be eaten "in the shade of the first tree we come to around lunch time." Ted and the children and I became very hungry for, of course, the tree to cast

"a shadow for the noontide hours," was not there. And as the children asked over and over, "when are we coming to a tree?" I began to realize that whatever else it had to offer, the desert did not come furnished with trees.

Also I learned very soon that if your home is on the desert you plant a tree not so much for posterity's sake as for your own immediate needs, or such was the case 20 years ago.

Those were the days of the tamarisk, the cottonwood, the beefwood—anything that would grow quickly and provide shade, anything that would tolerate natural desert conditions and anchor its roots in caliche.

Today these are perhaps the least popular of all trees for the desert home, especially within urban or suburban areas. These old timers are considered too large, too predatory and otherwise troublesome.

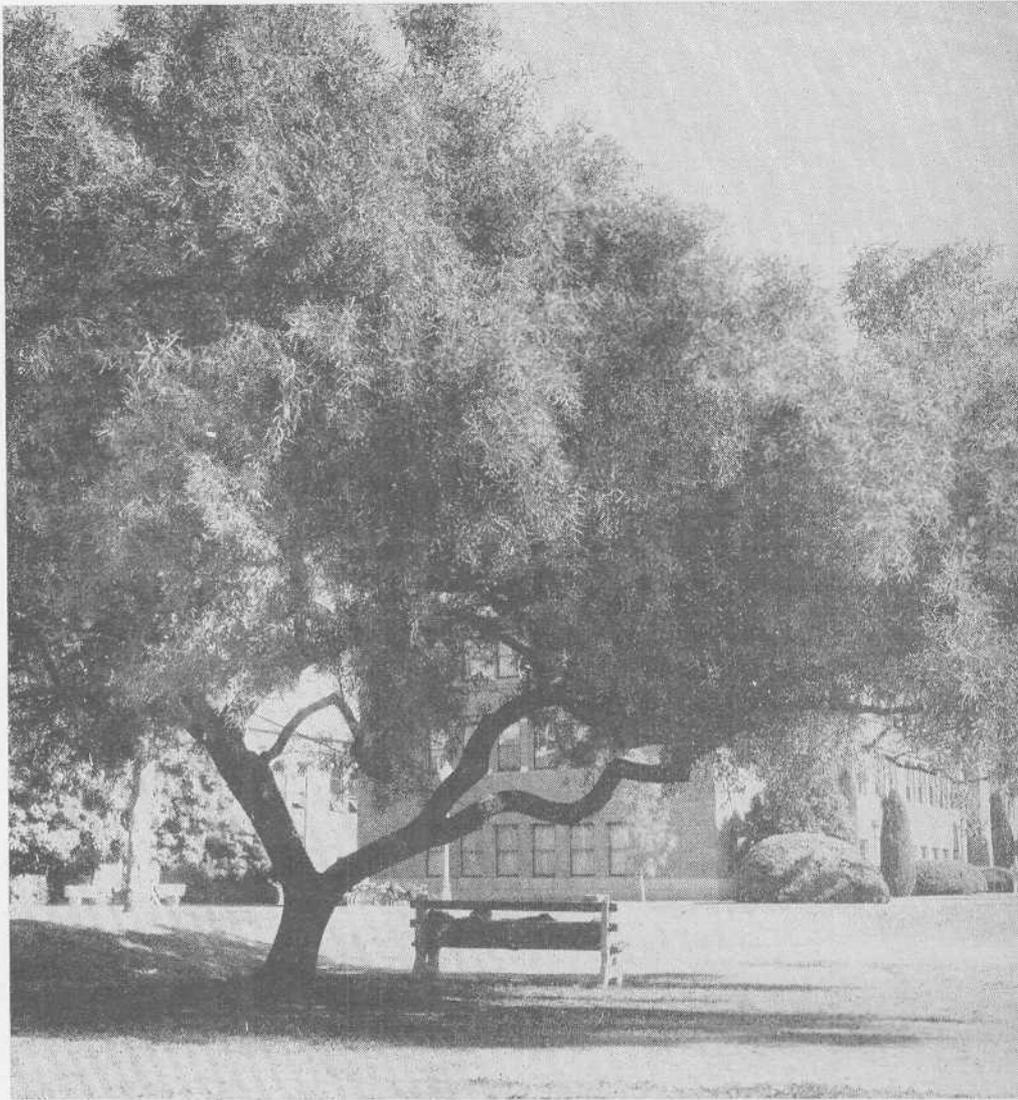
Of the three, however, only the beefwood is omitted in "Ornamental Trees for Southern Arizona," a recent compilation by Harvey F. Tate, University of Arizona horticulturist.

This was something of a blow to me, as a huge beefwood is the pride of our premises and a small dwarfed one is something of a pet. And although Tate assures me the omission is justified, I still respect the beefwood.

No amount of desert sun, wind, drouth or neglect seems to conquer it completely. No natural barrier stops its roots. This I saw for myself when our sewer connection ditch was cut through six-foot deep caliche exposing a vast network of tree roots.

The beefwood is native to Australia and has needle-like feathery foliage similar to the tamarisk's. Occasional dead branches often give it a staghorn appearance and it is termed unpredictable. Ours were planted side by side at the same time and one has grown beautifully while the other has refused either to grow normally or to give up. One thing about them is predictable: they never need pruning. Their forms may vary from pyramidal to spreading but they never get out of hand. Even our runt is rather artistic, although I had not noticed this until Helen Gardiner Doyle cast her artist's eye in its direction and pronounced it beautiful. Perhaps no more should be required of it as its brother makes shade enough for two.

While the cottonwood—as well as the tamarisk—has been outlawed on the small lot, it deserves mention as a fast growing tree, requiring plenty of room. *Populus Fremontii*, *Thornber*



*Rhus Lanceas* on the University of Arizona campus. In 15 years it has reached a height and spread of over 30 feet.

is a preferred, "cottonless" variety. Its roots and branches are wide-spreading, its height around 75 feet.

Even taller—if uncontrolled—and faster growing is the evergreen eucalyptus, especially the Red Gum (*E. rostrata*). It is the one with long narrow leaves and the potential height of 100 feet. Many of our neighbors have them and each year must have them topped by tree trimmers—a service which over the years runs into considerable expense. The Red Boxgum (*E. polyanthemos*) is a more moderate growing tree and is more spreading. It has round leaves, is more hardy to frost and heat and drouth resistant.

The pepper tree (*Schinus Molle*), although very beautiful when healthy and in its prime, has fallen into disfavor as a desert tree. It is susceptible to root rot and heart rot; it is short

lived and its branches break too easily in the wind.

The tree which has gained the most popularity in Arizona recently is the African Sumac (*Rhus Lancea*), an evergreen with lanceolate (lance-like) leaves. It is medium sized, broad crowned, fairly slow growing and cold-hardy to 15 degrees F. While it has been widely promoted and so far successfully grown, it is not, according to Tate, entirely trouble free although the horticulture department has not yet conclusively established the cause of such recent complaints as have been lodged against it. Like many another tree, its success probably is determined by the extent to which unfavorable situations have been altered to provide conditions favorable to its growth. This adds up to deep and fertile soil, good drainage and sufficient water.

Currently there seems to be a trend

toward more deciduous trees for the desert, although a green winter is still wonderful and exciting to those whose former homes were bleak and bare in winter. But sunshine is the desert's greatest gift and we can have our trees and sunshine too by planting trees whose leaves fall when the sun's warmth is most welcome and provide shade when the sun bears down uncomfortably.

A large shade and background tree coming into use in many areas is the pecan. Its summer foliage is dense and green and its stately, bare branches enhance the winter landscape. All this and a nut crop too, maybe.

Western Schley is the variety most widely adapted to varying elevations. For higher—3000-4000 feet—elevations Stuart and Success are recommended. Where temperatures drop to five above it is too cold for pecans.

For a good crop of nuts proper pollination is necessary, and is best assured by having two varieties. While each tree bears both male and female flowers, the shedding of pollen and the receptiveness of the female flowers often do not coincide. So an early pollen-shedding variety planted with a late pollen-shedding variety is recommended.

Another fairly large—50-60 feet—and fast growing tree which is making a name for itself in a thornless variety of Honey Locust (*Gleditsia triancanthos*). Its leaves are small, giving a light shade and it will grow in heat or below zero cold.

Tried and true deciduous trees include the native Arizona Ash; Modesto Ash, somewhat faster growing but with similar characteristics—good foliage, compact head, height to 50 feet.

The Kingman Fruitless Mulberry has long been a favorite. It not only can stand drouth, heat, cold—below zero—but alkali as well. Its large leaves give a dense shade and its size is nicely scaled to the average garden.

These are only a few of the trees on my list for Southern Arizona. Most of them—and others—doubtlessly will appear on lists obtainable in other desert areas from your county agricultural agent.

Even the apple tree may be recommended for high desert regions. For me it is still a dream away. But who knows? Plant breeders may yet develop one which does best in the low desert. In the meantime I understand that Randall Henderson, *Desert's* editor, is building a retreat at a 4000 foot elevation—just the place, I think, for "The planting of the apple tree" come Arbor Day.

# LETTERS

## Tales of a U-Hunter . . .

Pico, California

Desert:

This is not an easy letter to write, mainly because my job requires that I write eight hours a day, and off the job I run from the sight of a pen. But, my experiences are rather typical in a way with those of many other people who have discovered the wonders of the desert.

It all started in 1953 when we went back home to Utah for our vacation. The uranium boom was on and everyone in Utah talked, slept, ate and lived uranium. We listened with polite interest, but had anyone told me the big uranium bug was crawling toward me I would have thought they were crazy.

But, by the time we returned to California the fever was so high in me the first thing I did was trade in my Cadillac for a new jeep, scintillator, geiger counter and mineralight. Heck, who wanted to be a half-way amateur about this? Not me! Next came the purchase of a prospectors' camping outfit—stove, tent, bag, picks, shovels—the whole works and why not?

After being back at the office two days, the weekend seemed 10 years away. But it came and I made my first prospecting trip.

On it I used my geiger counter and if there isn't a little radio-activity in every rock on earth I'll eat them because that geiger counter went crazy with every rock I picked up.

Did I know cosmic-rays circled the earth? Maybe I did 30 years ago in school, but it's funny how we forget little things like that. And why didn't someone tell me a geiger counter sometimes can go haywire with these rays and keep flipping hot even when uranium is 1000 miles away?

What do you mean, no trespassing? When Uncle Sam says we need uranium we need uranium no matter where it is! Now it's time for my evening reading (*State Mine Bureau Bulletin*). Wonder if Uncle Sam will care if I don't bother staking the claims I'm going to discover?

And then we made the big strike. Riding along at a fast clip so we could get as far as possible on the two-day weekend, the scintillator needle flipped over. "Hold it!" I yelled.

Now we combed a 600 square foot area for the hot spot. It may take

days and days—but, who cares? We have uranium don't we?

Let's try dynamite, then dig, map, pick, shovel and dig some more and there it was—the rock that gave us our count. Boy! Looks like at least two million dollars here!

Driving home we spent it all. First thing I bought was the company I worked for so I could fire my boss.

I didn't know there were so many minutes in three weeks—but the assay report finally arrived.

Disappointed? No! Finding uranium simply could not happen to me and I knew it. Oh, well, thorium is just as good—almost. Let's try again. One claim at Mojave, three at Barstow, three in Little Tujunga canyon, one in Utah.

But, who wants to spend Saturday and Sunday digging and picking? I began noticing other rocks which were as interesting as radio-active specimens, and gradually I became a rockhound.

I may have rocks in my head, but I sure have fun out yonder adding to my collection. Pipes Canyon, Joshua Park, Borrego, Redrock Canyon, Cadiz—we've been to all of them in our darling jeep.

There is nothing in this world to equal the quiet, clean, serene, peaceful and heavenly desert. No traffic to fight, no phones ringing, no smog—nothing to keep me from enjoying the real God-made things of the earth—and all free with no cover charge, no tax, no reservations—just go.

JO DEE LARAMIE

• • •

## Desert Bees Are Rugged . . .

Logandale, Nevada

Desert:

While rock hunting last spring in the arid Arrow Canyon Range of southern Nevada with my family, we discovered an open air colony of honey bees. Instead of setting up housekeeping in a cave or crevice, this swarm was living on the bare underside of an overhanging conglomerate ledge. They were protected from rain and the hot desert sun, but exposed to the ravages of winter winds and the withering blasts of summer sand storms.

Hardy and courageous these persistent little creatures must have been while building their pendulous combs during their first season. Now there was a large and industrious colony here with a steady flow of workers bringing in the first nectar and pollen of the season collected from the blossoms of the catsclaw and other flowering plants in the neighborhood.

I have seen open air colonies before that have built on the branches of

heavily foliated trees but never one in such an exposed situation.

From time immemorial, the honey bee has been a benefactor to mankind. Praised by the ancients for its bountiful harvests of honey, it also is highly valued today for its ability to carry pollen from plant to plant assuring the fertilization of blossoms and consequently abundant crops for the farmer. Many plants rely exclusively on the honey bee for pollination.

Honey bees of various breeds are found in almost every country on the planet, in both the wild and domestic state. Little thought is given to the part played by the bee in propagating wildflowers and plants. In the woods, meadows, seashores and even in the dry desert country honey bees are found in abundance.

CHARLES H. WALSH

• • •

### Stung by Black Gnats . . .

Long Beach, California

Desert:

As I sit here reading the editorial in the December '56 *Desert* through slit eyes, somehow I cannot agree with you that "Among millions of tender-foot Americans the old superstition persists — that the desert is teeming with stinging insects . . ."

My husband and I have been rockhounds for eight years. Last year on an outing he was attacked by black gnats and this year it was my turn. I was clothed from head to toe except for my face and ears and those darned pests lit there. My face has swollen to twice its normal size. Many others have been painfully stung by these insects.

HELEN WOODS

• • •

### More on Bradshaw Gold . . .

Sparks, Nevada

Desert:

I would like to correct an impression left by my letter in the January *Desert* regarding the cached Bradshaw Stage line loot off the Niland-Blythe Road in the Chocolate Mountains of California.

Electrical storms have caused a landslide in the gulch where I discovered the treasure tunnel barred by an iron door in 1927—but the location of this gulch is not lost—it only is lost from view. I have returned to this place several times. It is covered with an overburden of gravel and rocks to a depth not over 25 feet.

DONALD W. EDWARDS

# On Desert Slopes With the Sierrans

The Desert Peaks Section of the Sierra Club is a Southern California group which makes a hobby of exploring desert mountain ranges and climbing to their high points. For many years Louise Werner, a member of the club and an enthusiastic mountain climber, has been writing about these trips for *Desert Magazine*. The Desert Peakers welcome guests on these climbs, and for those who would like to share the experience here is advance information on two scheduled trips—one a strenuous knapsack outing and the other a fairly easy one-day hike.

By LOUISE TOP WERNER

**February 22-23-24—Rabbit Peak  
6650-ft. Elevation. Santa Rosa Range**

**T**HE SANTA ROSA Range parallels Highway 99 to the southwest, from Indio to the Salton Sea in southeastern California. Rabbit Peak is the southernmost high point in the range.

This is one of the Section's more strenuous climbs. An ascent from the south side was written up in the September 1952 issue of *Desert Magazine*. This year the Desert Peakers will approach it from the opposite side. While starting point and route will be different, much of the information in the article pertains as much to one side as to the other—the historical data, the vegetation, general character of the terrain, suggestions about the contents of the knapsack, the fellowship, and the amount of effort put forth.

As no recent information is available as to the spring side of the mountain, it will be necessary to carry three to four quarts of water, depending on the temperature and on your tolerance for a dry throat.

The rise in elevation is about 6000 feet via canyon, slope and ridge.

The group will meet at 8 a.m. on Friday, February 22, at the junction of Highway 99 with Avenue 74, 15½ miles south of Indio. We will caravan two miles and then knapsack about six miles to a waterless campsite; the next day hike to the summit without packs (about three miles) and return to camp. On the 24th we will make a leisurely trip home.

Mileages on this trip are deceiving; the on-foot effort takes 15 to 17 hours. The climbing, however, presents no technical difficulties; it is mostly a matter of endurance.

Boots, long sleeves, and long trousers are recommended.

Leader: John Robinson, 2205 E.

First St., Long Beach 3. Phone HE 8-8913.

*Transportation:* Contact Jeanette Engle, 3200 Montezuma, Alhambra. Phone CU 3-1849. The transportation service provides contact between drivers with extra seating capacity and persons who have no cars available. Usual share-the-expense rate is one and one-half cents a mile for each passenger.

**May 11-12—Glass Mountain  
11,127-ft. Elev. Glass Mtn. Range**

Glass Mountain Range is in the north end of Owens Valley in central eastern California. Its name derives from the natural glass (obsidian) that crops out on some of the ridges.

Desert Peakers often bring the entire family on this trip because of the pleasant campsite which mothers and small children may enjoy while other family members make the climb. It is a secluded clearing at about 7500 feet, among Jeffrey Pines, aspen and wild roses; a small stream flows through birch thickets where columbines thrive, and bits of obsidian glisten in the pebbly bottom. Deer like it here too.

The hike to the summit is about six miles, trailless but easy. The top resembles an old crater filled with pumice and streaked with obsidian dust.

A trip to Glass Mountain was written up in the April, 1955, issue of *Desert Magazine*. This year's trip will follow essentially the same pattern. The group will meet Saturday, May 11 at 12 noon at Tom's Place on Highway 395 in upper Owens Valley and caravan 15 miles to the campsite. On Sunday we will climb Glass Mountain and drive home.

Leader: Ralph Merton, 9269 Dorrington Ave., Pacoima. EM 2-3298.

Transportation: Trudy Hunt, 150 Arlington Dr., Pasadena. SY 9-5267.

# LIFE ON THE DESERT

## ARIZONA HOMESTEAD IN 1913 . . .

It was a big jump from staid Philadelphia to the Arizona border country of 1913, but Carrie and Rhoda rolled up their sleeves, swallowed their fears and carved out their homes on adjoining homesteads far from their nearest neighbors.

By CARRIE S. FRAIZER

**I**N 1913, AFTER receiving several hurried letters and telegrams from our married sister, Esther, urging us to come to Arizona to homestead land at Elgin where she and her husband had recently settled, my sister Rhoda and I decided to make the move.

We were living and working in Philadelphia at that time and had heard and read many accounts of the rugged manner in which the Southwestern pioneers were living. From Esther's letters we knew that she and her family were living in a one-room and lean-to dwelling. Therefore, we each purchased a collapsible canvas chair and a canvas cot and strapped them to our packed trunks and suitcases.

At Washington, D. C., we bought railroad tickets to Benson in southern Arizona. The agent would not even venture to guess how we would be able to get to Elgin from Benson, but at a stopover in El Paso we were told that a mixed train passed through Elgin on a run from Benson to Nogales on the border.

This mixed train—with one wooden passenger coach and a great many freight cars—took a full day to travel the 80 miles from Benson to Elgin. Its top speed was 20 miles an hour in the straight stretches and 10 over bridges. It stopped at every shack and crossroad on the line and once, when some baby chicks escaped from a basket at a station, the conductor, baggage man and yes, even the engineer, got off the train and helped recapture them.

We arrived in the spring. By that time the desirable homesteads were taken. The only land open for entry was six miles from town on the southern rim of the 5000 foot high valley, where a long narrow strip had been reclassified from forest to public domain land. We were told that this land could be homesteaded, but not as yet filed upon. When a person filed, he had six months to establish a home, but on land such as ours the only way to hold it was to put stakes at the corners and let it be known that "this is mine" and then stay there.

The family drove us out to investigate this land in a huge lumber wagon. The property was quite rolling and would not be much good for farming, but we had no intention of farming it anyway. We rather liked it because it was high and sloped toward the main valley and it had a wonderful view. Besides, it was spotted with many trees including live oaks. But, frankly, for two girls in their late 20s with only a few thousand dollars in savings, carving a home out of this slope looked like a difficult task. We returned to Esther's home without much enthusiasm for staying in Arizona.

Ten days after our arrival, a quick decision was forced upon us. A neighbor came by and told us that two families were moving in on these claims the next morning. If we wanted them, he said, we would have to go out that afternoon.

For some reason not fully understood by us at that time—perhaps because we knew that we could leave the homestead any time we chose—we decided to take it.

On March 29, 1913, at 4 p.m., we loaded the big lumber wagon with our trunks, bedding, a coffee pot, skillet, a loaf of homemade bread, some bacon and eggs and our precious canvas cots and chairs and drove off to the south. My brother-in-law and his father accompanied us.

Our destination was an iron peg section line marker a foot high and three inches in diameter. We would have to find it in order to occupy the two claims we had set our minds upon having. At 11 p.m. the team stopped and by some miracle there was the iron peg right before us.

We placed one cot east of the peg and the other to the west. The horses were staked out and the men slept on one homestead while Rhoda and I slept on the cot on the other.

After the first breakfast on our own land, the men took the animals and went to a nearby spring to water them, spreading the news of our arrival. We

were there, ready to homestead, and we each owned a chair and a cot.

Many of the homesteads in this section were held by single men, the country being considered too isolated for women. News travels fast, and by 10 that first morning we had many offers of help, advice and materials. Not one of our new neighbors advised us to quit and go home.

By noon we had two tents up, one on each side of the peg. In the largest tent we placed the two cots. The other was merely a piece of canvas stretched over some poles where we set out our cooking gear. When the would-be homesteaders arrived that afternoon, our camp was a hive of activity and they did not linger long.

One of our new neighbors hauled in a load of wood and loaned us his axe; another loaned us a barrel and drove three miles to fill it with water; one man cut some small posts and contributed enough barbed wire to string two wires around the tents to keep out the wild cattle. For a stove our neighbors took a five-gallon kerosene can, cut one side out and made a small hole in the top to let the smoke out. Another fellow loaned us a dutch oven, and that really saved the day. I never became very good at making biscuits in it, but we ate them those first months, anyway. Sometimes we would receive a piece of beef or a young rabbit and then we would have a savory stew. The man who gave us the dutch oven left the country some time later without asking for its return. It is one of my most prized possessions.

After everyone had gone home on that first hectic day, Rhoda and I sat on our land looking into the growing dusk around us. Away off—perhaps five miles distant—we could see one tiny pinpoint of light. It was utterly still. We sat there a long time in silence, our minds filled with a million thoughts—with only our two-strand fence between us and the whole world.

We lived in that tent for six weeks. The days were lovely and warm, but at this high altitude as soon as the sun disappeared behind lofty Old Baldy peak, it turned cold. We had no way to keep warm except to go to bed. One night we received a hard rain and water began trickling through the light canvas tent into our faces. In the bottom of one of those still un-

packed trunks we remembered we had an umbrella and while Rhoda held a kerosene lantern, I hurriedly dug into the contents of that trunk. We spent the rest of the night in one bed with an umbrella over our heads. The umbrella is another memento that I still have and treasure. I believe this was the only time we ever used it.

It is rather amusing to recall how we were criticized by the more sedate women in the valley, especially after we began wearing overalls. There were many thistles and stickers in those hills and we did enjoy the protection afforded by those pants.

We had to send to Benson for everything we ate or used and we often walked the six miles to Elgin and back. Later we acquired a horse which we used mostly for hauling water in four kegs lashed to the saddle.

At the end of six weeks we had a house. It was one room 12 x 14 feet, but it had a floor and windows and a door. And best of all it had a stove—a real cook stove, and we could bake bread or cookies or pies.

We originally had intended to build the house straddling the property line, but the line ran through a deep swale and by the time we were able to get a man to build our cabin, the days were quite warm and the swale was uncomfortably hot. About an eighth of a mile into my property there was a beautiful black oak tree on a rise where we spent most of our time. We

decided that line or no line, we were going to build our first home under that tree. It took us two weeks to carry the lumber up there piece by piece. Sister later built her home on a rise on her side.

We had many gentlemen callers and the cowboys and ranchers always dressed up in the best they had when they came. However, there is one visit I shall never forget. Sister had gone to Esther's for a few days and I was alone in the cabin when I heard a rap on the door.

It was a windy, cold day and when I opened the door there standing before me was a huge broad man wearing a large black well-worn 10-gallon hat, a leather coat and leather chaps ending in an old pair of cowboy boots. All of his face visible between his hat and his turned-up collar was covered with black whiskers. If it had been a buffalo I could not have been more frightened.

He stood there and looked at me for a moment and then said: "I am looking for a bull." There was just a two-wire fence around the house and not a cow in sight. I told him he had better look elsewhere for the bull because it was obviously not on the property.

Still he did not move and finally said again that he was looking for a bull. I opened the door wide and exclaimed, "See—I don't have him in the house!" then slammed the door and locked it. Later I learned that he was one of the big cattle operators in the area and had ridden 10 miles to call on me.

After our three years of homesteading were completed, Rhoda and I married two of those very helpful men who had come over to our place on that first day. She and her husband lived in her home, but my husband had a good well on his homestead adjoining mine so we lived there. We started in 1916 with four cows and next year bought 10 more. We added to our land holdings until we owned 1500 acres and rented about twice that much in addition. We ran over 200 head of cattle on this range. My husband recently passed away and both our children are married and have homes of their own.

At 75 years of age I live here alone and run the ranch. I don't hire help—I just go out and work the cattle. My son has a garage and service station at Sonoita but he is never too busy to help me when I get into a jam.

Rhoda never lived anywhere else until she passed away nearly 40 years after we first set foot on this land. We never regretted the decision we made that day when we became homesteaders on the Arizona frontier.

## DESERT COUNCIL MOVES IN DEFENSE OF JOSHUA LANDS

The long-standing feud between the Desert Protective Council and the Western Mining Council over the status of the Joshua Tree National Monument in California flared up again in November and December when the mining organization secured the passage by the Riverside County Board of Supervisors of a resolution opposing plans of the National Park Service to obtain title to 10,800 acres of tax delinquent private land within the Monument.

When the Monument was created 25 years ago it was a checkerboard of public and private lands, and the Park Service has been trying to acquire title to the private holdings in order to consolidate the Monument. The Southern Pacific Railroad company held many sections as part of its original land grant. Later 23,000 acres of the railroad land were sold to land promoters who started selling them sight unseen in five and ten acre tracts at from \$50 to \$150 a plot.

The California Real Estate Commission put a stop to these sales on grounds of misrepresentation, and when the buyers learned that the tracts had no water and were too arid for cultivation many of them quit paying the taxes. It is these lands which the Park Service is now seeking to acquire.

The Desert Protective Council passed a resolution approving the transfer of the lands to the Park Service, and asking California's representatives in Congress to support this program.

The Protective Council at its December meeting elected new officers for the coming year. Harry James, president of the Council since its organization two years ago, assumed the newly-created position of Executive Director, and other officers were named as follows: Randall Henderson, editor of *Desert Magazine*, president; Mrs. R. H. Lutz of Twentynine Palms, vice president; Richard Keller of Coachella Valley, secretary, and Dr. Henry Weber, treasurer. James, Keller and Henderson will serve with two added members, to be appointed, as an executive committee.

Director Weldon Heald of Tucson was appointed as Council representative on the state park planning group of Arizona where efforts are now being made to set up a State Park Commission.

Plans were discussed by the directors for the forming of chapters of the Council in each of the Southwestern states.

## CONFERENCE TO FOCUS ON THREATS TO WILDERNESS

Conservation leaders from all parts of the nation are expected to meet in San Francisco March 15-16, for the Fifth Biennial Wilderness Conference. An effort to focus attention on the necessity of preserving primeval wilderness areas will be the main item of business, the conference sponsors, the Sierra Club, American Planning and Civic Association and the Wilderness Society, declared.

Pressure which the nation's rapid population growth is putting on national parks, national monuments, wildlife refuges and wild and wilderness areas in national forests, call for early and effective protective action, they added.

The Conference will review the extent to which dedicated primitive areas believed safely set aside are coming under the threat of commercial exploitation; also what desirable areas may still be added to the nation's scenic resources.

All sessions will be open to the public and all will take place at the Fairmont Hotel.

# Here and There on the Desert . . .

## ARIZONA

### Indians Plan Confederation . . .

WINDOW ROCK—Indian leaders from New Mexico and Arizona met to discuss the draft of a constitution which they say will organize over 200,000 tribesmen of the Southwest into one body. The proposed name for the new federation is the Intertribal Federation of Southwest Indian Tribes. A unanimous vote to form the Arizona-New Mexico group came at an earlier meeting in September.—*New Mexican*

### New Gila Dam Urged . . .

CASA GRANDE—A dam 18 miles above Florence on the Gila River is being urged by citizens of Casa Grande. Its main purpose would be to catch and store floodwaters of the San Pedro which flow into the Gila near Winkelman. In this area 50,000 acres are held by Pima Indians and another 50,000 by the people of Casa Grande. Both look to the Gila for water. Ordinarily cotton in the area is irrigated with water from Coolidge Dam, but this year the dam has not released water since June.—*Phoenix Gazette*

### Hualpais Seek Range Funds . . .

FLAGSTAFF — The Hualpai Indian tribe of Northwestern Arizona has asked congress for funds for a \$750,000 range development program to halt a drouth situation which has plagued the tribe since 1949. Tribal Chairman Rupert Parker said herds have been pared from 8000 to 3000 head of cattle. He added that the tribe would add to the sum from congress in money or labor for the range program. Some \$50,000 worth of pipelines have been laid by the tribe. Fifteen stock wells, 60 miles of pipeline and other improvements are contemplated under the tribal program.—*Phoenix Gazette*

### Indians to Lease 55,000 Acres . . .

PARKER—Colorado River Indian Reservation officials announced intention to let approximately 55,000 acres of unimproved land along the Colorado on long-term leases. The huge acreage of rich river-bottom land is located south of Poston and ends a few miles north of Ehrenberg. Congressional approval to lease the reservation land for 20-25 year periods already has been granted, but the Indian service was awaiting a decision from Washington concerning the method of leasing, whether by bid or direct negotiation. The lessors will bear all expenses of leveling, clearing and canal work and the approximately 38,000 acres now cultivated by the Indians will not be affected.—*Palo Verde Valley Times*

### Drouth Imperils Subsoil Water . . .

TEMPE—Subsoil water in Arizona will be dangerously depleted if present drouth conditions continue another year, according to Dr. Robert H. Hilgemar, superintendent of the University of Arizona citrus experimental station south of Tempe. So far, he said, no permanent damage has been done. A charge that the drouth is contributing to the elimination of small ranches

and development of larger holdings has been voiced by Carmy C. Page, Cochise County agricultural agent. He said the drouth is crippling the small rancher. Record low runoffs were recorded during November by the U. S. Geological Survey.

### Water Rushed to Indians . . .

LEHI—A 4000-gallon tank truck of water was rushed to the Pima-Maricopa Indian Reservation to alleviate a water shortage affecting 500 Tribesmen. Only water source available to the Indians prior to this relief measure was the cloudy, foul-tasting trickle from a single faucet fed by a nearby well which appeared to be going dry. Canals in the area had been dried for repairs. Edwin Dudley, area sanitary engineer for the Indian division of the U. S. Public Health Service, said a bill will be introduced in congress in an attempt to get money to drill additional wells on the reservation.—*Phoenix Gazette*

## CALIFORNIA

### Proposed Park Under Study . . .

LONE PINE—Proposed boundaries of the Alabama Hills State Park still are under study and will not be pushed through by underhanded methods, the Lone Pine Chamber of Commerce announced in an effort to calm fears that the proposed park would take in far more territory than was originally planned when the Chamber and the Lions Club suggested the project two years ago. The chamber said it was apparent the boundaries of the park as shown on the preliminary map were natural boundaries already in existence: the eastern side of the Alabamas, Hogback Creek area, the Inyo National Forest boundary along the foothills, and Tuttle Creek. — *Inyo Independent*

### Ridge Named for Shallenberger . . .

TRUCKEE — The name of Moses Shallenberger, almost forgotten youth who survived the winter of 1844 in the high Sierra of eastern Nevada County, will be honored by having a mountain ridge near Donner Lake named Shallenberger Ridge. Nevada County historians have described Shallenberger as the county's most neglected pioneer. He also was designated the county's first white resident. — *Nevada State Journal*

### KENT FROST JEEP TRIPS

Into the Famous Utah Needles Area Junction of the Green and Colorado rivers; Indian and Salt creeks; Davis, Lavander, Monument, Red, Dark and White canyons; Dead Horse and Grand View points; Hovenweep and Bridges national monuments. 3-day or longer trips for 2-6 person parties —\$25 daily per person. Includes sleeping bags, transportation, guide service, meals. Write KENT FROST, Monticello, Utah.

## FREE! GUNFIGHTERS BOOK!

A GALLERY OF WESTERN BADMEN is a book of factual accounts on the lives and deaths of 21 notorious gunslingers of the Old West such as Wyatt Earp, Billy the Kid, Wes Hardin, John Ringo, Jesse James, Bill Longley, Doc Holliday, Wild Bill Hickok, Clay Allison, Ben Thompson and 11 others! There are 26 authentic photographs!

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### Spa Threatened by Water . . .

MECCA—Destruction of Hot Mineral Spa is threatened by quantities of unwanted water from an unknown source. Theodore Pilger, owner of the Spa, believes the rising water table is caused by leakage from the Coachella canal. Last summer a court order called for cessation of the Spa's operation because the rising water interfered with sanitary facilities. Directors of the Coachella Valley County Water District, which operates the canal, disclaimed responsibility for flooding the tiny desert health resort. Instead they believe the excess water is collected above the earthquake fault on which the resort is situated, then spills over at Hot Mineral Spa.—*Desert Rancher*

### Tramway Bond Sales Revoked . . .

PALM SPRINGS—The State Park Commission has refused to grant the Mt. San Jacinto Winter Park Authority renewal of power to sell bonds to finance the proposed \$12,000,000 tramway from the desert near Palm Springs to the top of Mt. San Jacinto. In denying the renewal, commission spokesmen said the authority has had more than 10 years to get the project underway, but no action as yet has been taken. The tramway backers answered that present condition of the bond market has not been right for

sales of the securities. They will attempt to reverse the commission's decision, probably by going before the Legislature. The tramway project has met determined opposition from many conservation groups on the grounds that it would ruin the wilderness areas of the San Jacinto Mountains. —*Riverside Enterprise*

### Indians Hire Planning Firm . . .

PALM SPRINGS—The Agua Caliente Tribal Council has hired a planning firm to make a master plan for one section of land and a zoning plan for all 7000 acres of valuable Indian holdings within the Palm Springs city limits. The action culminates three years of work toward this goal by the tribe. The planning consultants are Victor Gruen and Associates.—*Desert Sun*

### Curtiss-Wright Buys Land . . .

VIRGINIA CITY — The Curtiss-Wright corporation has acquired possession of approximately one-third of Storey County, according to deeds now on file in the County Courthouse. This is the culmination of a long program of Nevada land purchase by the armaments manufacturer which in this instance also includes portions of Washoe and Lyon counties. The Storey County holdings run northward from

the line of the Flowery Range of mountains, roughly six miles north of Virginia City. Historically minded Nevadans fear that the Nevada Park Commission's present plans for constructing a State Park at the site of the prehistoric Indian petroglyphs in the Chalk Hills will now be abandoned. —*Territorial Enterprise*

### Monument Site Acquired . . .

VIRGINIA CITY — A 20 foot square piece of land in the heart of Virginia City has been deeded to the state as the location of a suitable monument to herald the 100th anniversary of the discovery of silver in continental United States. The silver monument will be unveiled in 1959 during statewide celebration of the centennial. —*Nevada State Journal*

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## Prehistoric Bones Discovered . . .

**OVERTON**—Fossil bones of prehistoric animals which roamed in Southern Nevada thousands of years ago were discovered in a wash near the Overton Arm of Lake Mead by Chick Perkins of Overton, a member of the Nevada State Parks Board. He found fossil jaws and teeth of a carnivore and teeth of prehistoric horses and scattered fossil bones. These remains had been unearthed by the lapping water action of Lake Mead.

## Historical Society Organized . . .

**ELKO**—The Northeastern Nevada Historical Society was formed in Elko in November with Mrs. John Patterson and Mrs. Ira Pearce named co-chairmen.

### Industry Foundation Expires . . .

LAS VEGAS — Southern Nevada Industrial Foundation—the organization of local business leaders credited with developing nation-wide interest the past year in this area's industrial and economic potential—was expected to bring its operations to a close owing to lack of community support.—*Nevada State Journal*

### NEW MEXICO

#### Receive More Oil-Gas Money . . .

SAN JUAN COUNTY—In the second of three bid openings, the Navajo Indians received total bonus bids of \$3,247,094.91 for oil and gas leases on 82,200 acres of tribally owned land in San Juan County, Secretary of the Interior Fred A. Seaton announced.

#### Underground Basin Established . . .

ALBUQUERQUE — New Mexico has established a Rio Grande underground water basin extending from the Colorado state line to Elephant Butte Dam in Sierra County. It ranges 280 miles down the river and is 30 miles in width at some points. Thus the surface waters of the Rio Grande are fully appropriated and the surface and ground waters of the basin become intimately interrelated parts of a single supply. This is intended to implement the protection of existing valid water rights and will not restrict the exercise of existing ground-

water rights. The basin plan will encourage industrial development in the valley by providing for the acquisition of firm water rights, the state announced.—*New Mexican*

#### State Income Below Average . . .

SANTA FE — New Mexico's per capita income for last year was more than \$400 below the average of the nation. The state's 1955 per capita income, which reflects individuals' purchasing power, was \$1430, compared to a U.S. average of \$1847.

#### Cloud Seeding Opposed . . .

LAS CRUCES—The New Mexico Farm Bureau passed an anti-cloud seeding resolution sponsored by the Colfax County Farm Bureau. The resolution asked that the Governor seek an injunction through the Federal Courts against the practice of commercial cloud seeding. It also provides that New Mexico's representatives in Congress enact legislation to prohibit commercial cloud seeding. It is the contention of the resolution backers that cloud seeding may be responsible for the Southwest drought and that it is an action that in benefiting a few areas is causing untold suffering to an ever greater area in the Southwest.

### UTAH

#### New Town Chartered . . .

SALT LAKE CITY—Plans for a new community near the \$400,000,-

000 Glen Canyon damsite near the Utah-Arizona border were announced by the Grand Development Co. of Salt Lake City. The 320-acre tract, to be known as Canyon City, will be located about five or six miles northwest of the damsite. It will be in Arizona, but accessible only from the Utah side of the Colorado River. A population of 10,000 is foreseen for Canyon City.

#### Mixed-Bloods Plan Independence . . .

UINTAH - OURAY RESERVATION—Payments of up to \$4500 per person were received by members of the Affiliated Ute Citizens of Utah. Some 490 individuals were eligible for the money. The mixed-blood Utes also were given the opportunity to purchase land which had been assigned to them

#### Four Corners Monument . . .

CORTEZ, Colo.—A national monument to extend equally into Utah, Colorado, New Mexico and Arizona at four corners with the exact center to be where they join has gained support in the states involved. Gov. Johnson of Colorado suggested the area could be made fertile and landscaped with greenery with the help of water pumped from the San Juan River, but all specifics of the plan will be worked out by the National Park Service and Congress.—*New Mexican*

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# MINES and MINING

## Coyote Wells, California . . .

A deposit of nickel and cobalt ore said to be worth upwards of 80 to 100 million dollars has been discovered in Imperial Valley. The bonanza is located a few miles north of Highway 80 in the rough mountainous desert west of Plaster City. The center of the find is the Coyote Mountains entered through Painted Gorge near the small communities of Ocotillo and Coyote Wells. Discoverers of the 150-claim deposit are Ross and Minnie O'Callahan and their son Lloyd of Ocotillo; George N. Graham, Imperial Beach; and Tilmon Roark, El Centro. Industrial Nickel Corporation of Los Angeles will purchase 40 of the claims for a million dollars and has taken an option on 40 additional claims for a like amount of money, according to Ross O'Callahan. The remaining claims staked in the four square mile area will be retained by the prospecting group. More than 50 years will be required to mine out the area, O'Callahan estimated.—*Imperial Valley Press*

## Virginia City, Nevada . . .

Consolidated Virginia Mining Company has acquired the Hampton Mining Co., a Utah Corporation, through an exchange of stock. Combined assets of the two companies exceed \$5,000,000 and among Hampton's holdings is an interest in a Panama oil concession near Union Oil Company's

recent oil discovery. Con-Virginia recently announced its intention to reactivate its extensive properties on the Comstock Lode at Virginia City.—*Humboldt Star*

## Lucerne Valley, California

Permanente Cement Company's new 2,500,000 barrel manufacturing plant at Lucerne Valley was scheduled to begin production during the first part of this year. The company also announced that it has established offices in the National Oil Building, 609 South Grand Ave., Los Angeles, for the staff of its new Southern California division. C. W. McKinley, a veteran of 11 years in Permanente's sales force, has been appointed Southern California division sales manager.—*Desert Valley News Herald*

## Denver, Colorado . . .

The west's constantly expanding oil and gas exploration resulted in 4103 wells completed in 14 states as of mid-November in 1956. Somewhat fewer than 50 percent of these were successful—1307 oil wells and 689 gassers. Total wells and successful oil and gas producers for the Southwestern states were: New Mexico, 709, 66, 540; Utah, 101, 27, 15; Arizona, 4, 0, 1; and Nevada, 3, 0, 0. More than a quarter of the wells drilled were in Colorado with 1009 of which 226 oil and 82 gas were successful.—*Salt Lake Tribune*

## Henderson, Nevada . . .

Emulsion flotation, a recent development in ore treatment which requires as much as 200 pounds of soap-oil emulsion per ton of ore, has been highly successful in upgrading manganese ores at the Manganese, Inc., plant at Henderson, it was reported. The process is somewhat similar to the widely used froth flotation.—*Pioche Record*

## Linne, California . . .

A concentrating plant for barium sulphate has been constructed at Linne, five miles south of Little Lake in Indian Wells Valley, by the Macco Corporation. Macco is mining ore from a large deposit owned by the Western Barium Co. in Nine Mile Canyon. From the Linne plant, the refined ore is hauled to Macco's plant at Rosamond where it undergoes final grinding and mixing with other ingredients to form the "mud" used in the drilling of oil wells.—*Indian Wells Valley Independent*

## San Juan County, Utah . . .

United States Smelting, Refining and Mining Co. announced discovery of natural gas on the Chinle Wash structure of San Juan County. The firm's Chinle Wash Ohio-Navajo No. 1 also recovered 15 gallons of distillate in testing a zone apparently in the Paradox sector. The company's well is on a northwesterly trend of the Boundary Buttes Field in the extreme southern sector of the Paradox Basin. — *Salt Lake Tribune*

## Tucson, Arizona . . .

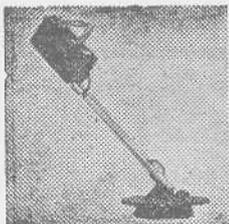
A new method of purifying copper which is described as potentially a major change in mining methods is under experimentation by the copper industry. The metallurgy department at the University of Arizona's College of Mines in cooperation with the Arizona Bureau of Mines recently installed a test unit using the new system. The process basically is one of electrolysis in which solids are treated as if they were liquids.—*Phoenix Gazette*

## Nevada City, California . . .

The 103-year-old Midnight Mine at the foot of Bridge Street and only two blocks from the Nevada City's business section, will go into gold ore production early this spring, partners Dan Holloway and Ole Antonsen of Nevada City and Joseph Brundage of Ukiah announced. The re-opening of the Midnight will mark the first time a mine has operated in the city since 1942 when the Midnight was drained and mined for a few months.—*Nevada State Journal*

## Washington, D. C.

With the appropriation of \$24,000,000 for the purchase of tungsten virtually exhausted, the General Services Administration warned that the present purchase program is about at an end. Additional appropriations depend upon the 85th Congress and a spokesman for the Interior Department said such action will be recommended.—*Reese River Reveille*



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# URANIUM NEWS

## U. S. Uranium Ore Output Doubles In Year, Reports AEC

The Atomic Energy Commission released hitherto secret information which points to substantial increases in the production of uranium in this country.

U. S. mills currently are producing at an annual rate of more than 8000 tons of uranium oxide, compared with 4000 tons at the beginning of the year, the AEC said. Uranium oxide is a concentrate that may be refined into metal for nuclear reactors or into chemicals for gaseous diffusion plants. In addition, the AEC said the U.S. had a uranium ore reserve of 60,000,000 tons as of November 1, 1956. The lion's share of these reserves—68.4 percent—are in New Mexico. The rest are distributed percentage-wise as follows: Utah 12.5; Colorado 6.8; Arizona 4.3; Wyoming 3.8; Washington 2.5; and all other states 1.7. The information was given simultaneously with an estimate by Canada that it has 225,000,000 tons of known reserves of the ore.

The AEC also reported that there are at present 12 uranium mills in the United States, 11 of which are privately owned. They represent a total private investment of \$50,000,000.

During 1956, contracts involving construction of eight new mills—representing an estimated private investment of about \$35,000,000—were negotiated.

### Mio Dio's Upgrading Mill Successful, Officials Say

What otherwise would be valueless uranium ore has been upgraded seven times by a 40-tons-per-hour mill at the Mio Dio mine at Notom, Utah, company officials reported.

The plant works on a comparatively simple principle of a scrubbing, water jetting system which separates uranium values from raw material. This uranium is then carried back by solution into settling pools where it is dried. The pools at Mio Dio are 80x100 feet.

Officers of Mio Dio say the plant has made it possible for them to use the vast surface deposit of low grade uranium that ordinarily would be lost to them as an individual company and to the uranium industry as a whole. The higher grade deposits that are being found at greater depths also are being processed through this method.—*Pioche Record*

### Uranium Health Cave Opens Near Desert Hot Springs

Six units of the motel built to surround the "health cave" for arthritis and rheumatism sufferers at Desert Hot Springs, California, were opened in November. The health cave area also includes two therapeutic pools of hot mineral water. Twenty-five tons of uranium ore from Barstow line the walls and are inlaid in the ceiling of the 12 x 21 foot cave which is approached through a 38 foot tunnel.

Although the American Medical Association and doctors generally decline to say that sitting in a uranium mine will help arthritis sufferers, operators of the mines maintain that medical science traditionally is slow to accept new treatments.—*Desert Sentinel*

An occupational health dust study was scheduled to be made at the Anaconda Uranium Mill at Bluewater, New Mexico, the state health department announced. Atmospheric determinations for uranium, radium, vanadium and quartz were to be made. The study will be the first since the processing of sandstone ore was begun at the mine a year ago.—*New Mexican*

### New U-Mill Capable of Handling .10 Percent Ore

A revolutionary new type of uranium processing plant, for which spectacular laboratory success is already claimed, will soon be opening on Millers flats below Tonopah, Nevada, it was disclosed. The unit, a product of the Radio Chemical Corporation of Los Angeles, is the result of many years of experimentation and development of a sound and economical flow-sheet for the recovery of both simple and complex uranium ores.

The 50 ton mill planned for the area is not an upgrading plant, but a complete processing mill with the end product being the "yellow cake" acceptable to the AEC. The new process, based on resin ionization with the aid of certain catalysts, will economically handle ores containing as low as .10 percent uranium, the developers said.—*Nevada State Journal*



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### MAPS

Map and Geology (Uranium and Mineral Districts of California).....	1.50
Map of Kern County (New Section and Township).....	1.50
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All work by the Stearns-Rogers Construction Co. in the mill being built for Texas Zinc Minerals Co. at Blanding, Utah, was at a standstill following a strike by Navajo workmen. The strike was called to enforce Navajo demands for increased subsistence payments. When Indians threw up picket lines, other union workers on the project refused to pass the lines and all work on the project was halted. A back-to-work agreement allowing the Navajos increased subsistence to match that received by white workers on the project ended the strike.—*Mining Record*

Uranium production bonuses ranging from \$1.50 to \$3.50 a pound, depending upon the percentage of uranium oxide in the delivered ores, have been made to 260 mining companies and individuals in Utah. The state total, highest in the nation, was \$2,891,100. Bonus payments also went to miners in these states: Colorado, \$2,237,800; Arizona, \$1,299,200; New Mexico, \$1,050,400; Wyoming, \$745,000; South Dakota, \$441,600; Washington, \$67,000; Montana, \$35,000; Nevada, \$18,000; California, \$14,200; and Pennsylvania, \$3900.—*Salt Lake Tribune*

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### Pocket Sized Uranium Booklet Released by Bureau of Mines

A new Bureau of Mines handbook designed specifically for persons interested in uranium prospecting and development now is available from the government printing office. Known as "Facts Concerning Uranium Exploration and Production," the 130-page publication can be purchased for 70 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

The pocket size booklet presents material obtained from a wide range of references, including those of the AEC, Geological Survey and other government agencies, state mining departments, universities and colleges and noted authorities in the uranium industry.

Included are such subjects as areas, ways to obtain analyses of ore specimens, prospecting on private and public lands, ways of staking claims, data on mining, milling and refining of uranium ore and description and use of Geiger and other radioactivity detection counters.—*Humboldt Star*

A promising wildcat uranium strike was made on the San Juan claims north of Austin, Nevada, according to the Sunburst Uranium Corporation. Officials believe this uranium discovery has good possibilities of developing into an important producing mine. Uranium assaying as high as 2.11 percent was encountered in the first drill hole and two ore zones were proved, the first of which is around 43 feet. The uranium lies in veins and is in rhyolite formation. A shaft now is being sunk for mining.—*Humboldt Star*

The AEC announced signature of a contract with a partnership led by Homestake Mining Co. for erection of a 750-ton-per-day uranium mill near Grants, New Mexico. Other participants in the project include Rio de Oro Uranium Mines, Inc., United White Weld & Co., San Jacinto Petroleum Corp., Western Minerals Co., J. H. Whitney & Co. and Clyde Osborn. The new plant is expected to use an alkaline leach process. Ore reserves behind the mill are estimated at one million tons.—*Salt Lake Tribune*

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### Uranium Future Secure Institute Members Told

Dr. Paul Cardwell of Dow Chemical Corp. predicted a bright future for uranium at a recent meeting of the newly organized Uranium Institute of America. He said the 1954 estimate of the 1960 demand for uranium metal was 400 to 600 tons per year. Now the figure has been revised to 800 to 1200 tons. He added that on the basis of that revision, supply may prove unable to surpass demand by 1970.

The new, larger liquid metal reactors should create greater demand as well as provide more by-products for much-needed research uses. But, he warned of problems for the industry between the end of government buying and the completion of enough reactors to replace that market. Dr. Cardwell also said there is a bottleneck in reactor development in that fuel elements must be reprocessed at uneconomically frequent intervals.

He said hydrogen reactors present no threat to the uranium industry and thorium can be discounted.—*Grants Beacon*

The AEC has invested \$309,516,000 in New Mexico installations since the inception of the atomic program, it was reported. The agency said it had invested \$53,660,000 at Sandia Corp. and \$247,800,000 at Los Alamos.—*New Mexican*

### TRUE OR FALSE ANSWERS

Questions are on page 6

- 1—True.
- 2—False. Scotty and Albert Johnson built the Castle.
- 3—True. 4—True.
- 5—False. The date palms now growing in America came from offshoots originally imported from Asia and North Africa.
- 6—False. Vinegarroon is a whip scorpion.
- 7—False. An arrastra was a crude tool for grinding ore.
- 8—True.
- 9—False. There was no Salton Sea in 1900.
- 10—False. Chief industry at Ajo is mining.
- 11—False. Quartz is harder than calcite.
- 12—True.
- 13—False. Joseph Smith met a tragic death before the westward trek.
- 14—True.
- 15—False. Chimayo is a settlement in New Mexico.
- 16—True. 17—True. 18—True.
- 19—True.
- 20—False. Coyotes have a wide range of food including rodents and rabbits.

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# GEMS AND MINERALS

## Nevada Collecting Still Legal, But Petrified Wood Protected

Neither Federal law nor Nevada legislation prevents the taking of mineral and gem specimens in Nevada, J. W. Calhoun, director of the Nevada State Museum declared in an effort to clarify reports in several gem and mineral club bulletins that the Nevada Park Commission was clamping down on hobbyists.

It is, however, unlawful to appropriate or destroy petrified wood in the state, Cal-

houn declared. Petrified wood is considered an "object of antiquity" and therefore permits to collect it will be granted only "to reputable museums, universities, colleges or other recognized scientific or educational institutions, or their duly authorized agents."

While the intent of Nevada law is to include petrified wood as "objects of antiquity," section 4 of Nevada Law 210 specifically protects the rockhound seeking other than petrified wood: "Nothing in this act contained shall interfere with or prevent any person or individual or society from collecting minerals, rocks, gems, plant life and butterflies, nor prevent the photographing by individuals of petroglyphs or pictographs or historical monuments."

Calhoun said it is the hope of the Park Commission to have legislation enacted this year to clear up the Nevada antiquities law.

### NORTHWEST GEM TRAILS REPUBLICISHED BY DAKE

Second edition of H. C. Dake's *Northwest Gem Trails, A Field Guide for the Gem Hunter, the Mineral Collectors and the Tourist* recently was released. The author is editor of *The Mineralogist Magazine* and writer of *Desert Magazine's* Amateur Gem Cutter page.

Dr. Dake presents the regional gem collecting picture for the states covered in his book—Oregon, the Agate State; Washington, Opalized Forest State; Idaho, the Gem State; Montana, the Moss Agate State; and Wyoming, the Jade State—as well as information on many specific collecting locations that he personally has visited or has been told about in the past 30 years.

Published by the Mineralogist Publishing Company, 329 S.E. 32nd Avenue, Portland 15, Oregon; paper cover; illustrated; maps; 80 pages; \$2.00.

### SPECIAL EXHIBITS PLANNED FOR DATE FESTIVAL SHOW

Special exhibits for the Riverside County Gem and Mineral Show, to be held in conjunction with the County Fair and National Date Festival, were announced. The 1957 show will take place at the Indio fairgrounds, February 15-24.

Among the show highlights scheduled are Herschel Beekly's mosaic table tops; Paul and Madelain Itnyre's huge turntable of spheres; Anthony and Mary Frances Berkholz' two cases of fire opals and natural crystal specimens;

Erna Clark's famed "rock foods"; Walt Pilkington's onyx dinnerware; and Omar and Margarita Kerschner's giant crystal cluster, weighing nearly 600 pounds, along with its scenic backdrop and model trails.

More than 200 cases of material also will be on exhibit in two separate locations: the major portion in the huge Mineral and Junior Exhibits Building; and the others in the adjacent B Building. In all, plans call for over 12,000 square feet of gem and mineral exhibit space at the fair.

Mary Frances Berkholz, field trip chairman of the California Federation of Mineralogical Societies, will be in the information booth where field trip maps and information will be made available to the general public and visiting rockhounds.

### STAR OF ARKANSAS CUT FROM 15 CARAT DIAMOND

The braggin' rock par excellence, the 15-carat diamond found at Murfreesboro, Arkansas, by Mrs. A. L. Parker of Dallas, Texas, has been cut marquise style and now weighs eight and one-quarter carats. Several lesser stones were finished from the waste pieces.

Mrs. Parker's stone, named "Star of Arkansas," was cut in New York. Because Arkansas diamond is 20 percent harder than African, only Arkansas bort could be used in the cutting. Arkansas diamond has a higher index of refraction than other stones. The brilliant stone is on display at a Dallas jewelry store.—Nebraska Mineral and Gem Club's *Rear Trunk*

Recently organized in Shenandoah, Iowa, was the Hawkeye Mineral and Gem Club. Jack Kill is president of the new club.—*Rear Trunk*

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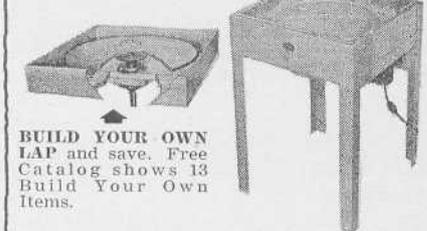
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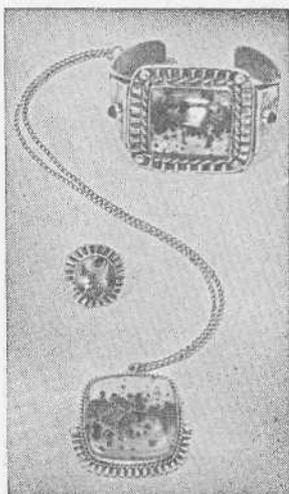


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**SMALLER STONES OFTEN  
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Many rockhound beginners have become discouraged by seeing veterans in the hobby pass over the smaller gem stones for the larger ones which they slab and polish on expensive equipment.

However, the person seeking beauty in rocks and the pleasure of enhancing this beauty by his efforts need not be discouraged, for some of the most lovely gems are produced from the smaller rocks and fragments. The equipment necessary to bring out their full beauty may be quite simple. Often no diamond saw is required

and an expensive grinding arbor may be dispensed with. All the work can be done on a small vertical-shaft machine.

Small stones are dopped and their bases ground smooth on a horizontal eight-inch lap or grinding wheel, requiring a surprisingly short time to do, and then, while still dopped, may be further smoothed and polished by using finer abrasives.

After this base polishing is completed, redop the stone and shape it into a flat or a cabochon, using an eight-inch wooden disc in which grooves have been turned; or the side of a 220 grit grinding wheel in which grooves are worn to accommodate the size of the gem being ground. Lead,

canvas, cork and leather laps are used to polish the stones to a high gloss.

It is true that a little more time is required by the methods mentioned above, but to those who are not commercializing on their rockhound activities, this should make no difference—in fact it should be rather desirable as the time is spent enjoyably and carries one from the ranks of those whose lives are spent in rush and hurry.

To offset this slight disadvantage, small rocks so processed may be made to reveal their beauty and lovely characteristics to much better advantage than by slabbing, as the colors and included figures may be preserved and revealed by the proper placing on the dop rather than destroyed or marred as is often the case when they are sawed sight-unseen.

Do not ignore the smaller stones when on a field trip or when preparing to make gems.—Harry Zollars in the El Paso, Texas, Rockhounds' *The Voice*

**MINERAL CHARACTERISTICS  
GIVE KEY TO IDENTITY**

One of the principal objects of the rockhound is to develop the ability to recognize the common and valuable minerals in the field, and by making a few simple tests, get some general information about the mineral found and establish the family to which it belongs.

The main characteristics of minerals are:

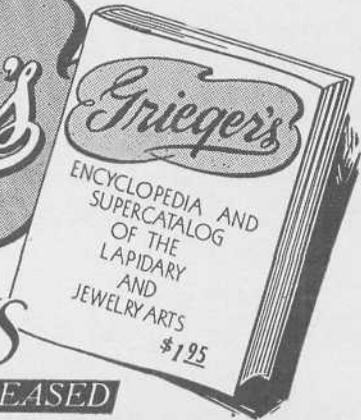
1. Hardness—the ability to resist penetration or scratching.
2. Color—as found, and as on a fresh fractured surface.
3. Crystal form—shape either crystallized or without crystalline form.
4. Streak—color of streak when scratched with a knife or on a streak plate.
5. Luster — the character of reflected light.
6. Fracture—smooth, rough or irregular.
7. Cleavage — how it parts or breaks across or with the crystal planes.
8. Specific gravity—weight as compared to an equal volume of water.
9. Odor—as struck with a hammer (oil or bitumen, sulphur, etc.).
10. Taste—salty, cooling as halite or niter.
11. Feel—greasy, as soapstone, serpentine, etc. — James S. Sutterfield in the Wichita, Kansas, Gem and Mineral Society's *Quarry Quips*

**GOOD SPECIMENS OF  
RHODOCHROSITE RARE**

Rhodochlorite usually is a mineral of copper and lead ore veins, but sometimes occurs in pegmatites. Good specimens are not common, the best have come from several mines in Colorado. These are deep pink rhombohedral crystals up to several inches across, associated with pyrite, fluorite, quartz and ore sulphides.

This carbonate has a hardness of 3.5 to 4; specific gravity of 3.4 to 3.6; deep rose-pink to pale pink, gray or brown; luster vitreous to pearly; transparent to translucent.

In Germany rhodochlorite is called himbeerspat (raspberry spar) and rosinca is the name given an Argentine occurrence of pink crusts used for decorative purposes. In the United States it is found in Connecticut, New Jersey and in veins with silver in Colorado, Nevada and Montana. — Miami, Florida, Mineral and Gem Society's *Chips and Facets*

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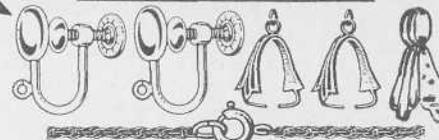
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## TREASURE TRAILS IS THEME OF '57 FEDERATION SHOW

"Treasure Trails" was chosen as the theme of the July 5-7 California Federation of Mineralogical Societies Gem and Mineral Show. The Compton Gem and Mineralogical Club will host the "Gem-O-Rama" at the Great Western Building, Santa Ana Freeway and Atlantic Boulevard, Los Angeles.

Parking for 1200 automobiles will be provided in front of the 80,000 square foot air conditioned and fireproof building. Camping space for 100 trailers or cabanas is planned at the rear of the building.

Entry deadline is June 1 and entry blanks and rules will be sent to each society in the Federation. Plans call for 400 competitive cases. General chairman of the show is Dan Brock, 2765 Glenn Avenue, Los Angeles 23.

## SPECIMEN PHOTOGRAPHY NEED NOT BE COSTLY

Taking pictures of small mineral specimens and crystals is specialized photography and requires either a single lens reflex camera or a range finder type camera with copying equipment and extension tubes. However, even an ordinary 35 mm. camera is capable of taking beautiful color pictures, and used properly, even the cheapest camera will give good results.

If the mineral specimen is large, no extra equipment is required. The smaller specimens (approximately 2x2 inches) would require the use of a plus three portrait lens over the camera lens.

Most photographers use flood lights to illuminate the specimen, but sunlight can be substituted. Use a white card to reflect any needed sidelight upon the specimen. For the background, use construction paper obtainable in a wide variety of colors and shades. Curve the card up against a support to eliminate the distracting horizontal line which normally results from a separate backdrop.

Exposures can be determined by taking a meter reading from a neutral gray card held near the mineral or from the mineral area. If the mineral is light colored use about a half stop from that indicated by the meter. Avoid large shadow areas by reflecting light into them. Unless this is done you will exceed the contrast latitude of the color film.—Woodrow J. Dickson in the Montebello, California, Mineral and Lapidary Society's *The Braggin' Rock*

E. C. Brookins has been elected president of the Gem County Rock and Mineral Society of Emmett, Idaho. Also named to office were J. A. Monroe, vice president; Mrs. Earl Kent, secretary; Mrs. G. J. Brumm, treasurer; O. B. Hollingsworth, publicity chairman; and Earl Kent, federation director.

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Five more gem and mineral societies were admitted to the California Federation boosting the total club membership to 120. The new clubs are Antioch Lapidary Club, Bishop Club, Marquandt Mineral and Lapidary Club of Van Nuys, Monrovia Rockhounds and Southern California Mineral Identification Society.

Installed as new officers of the Glendale, California, Lapidary and Gem Society were Leo Molitor, president; Ellis Roth, first vice president; Arthur Bowman, second vice

president; Fred Brem, treasurer; and Louis Hamilton, secretary. Retiring president was Gene Rath.

The CRA Rockhounds of Pomona, California, have selected April 27-28 as the dates for their second annual show to be held at the Ebel Club House, 585 East Holt Avenue. There will be no admission charge and the general public is invited to attend. Rockhounds and clubs desiring non-commercial exhibit information should write to W. F. Jordan, 1993 Grier Street, Pomona.

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K71-18	8" x .032"	5/8"		12.40
K71-21	8" x .040"	1/2"		13.60
K71-22	8" x .040"	5/8"		13.60
K71-23	8" x .040"	3/4"		13.60
K71-26	9" x .040"	5/8"		15.40
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K71-43	14" x .050"	3/4"		27.70
K71-46	14" x .064"	5/8"		32.30
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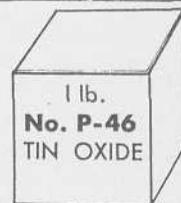
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**TUMBLING GEMS** of the desert for sale. Agates, jaspers, obsidians, etc. Mixed lots \$4 per pound. T & J Rockhounds, 9000 National Blvd., Los Angeles 34, California.

New officers of the Oklahoma Mineral and Gem Society are Haskell C. Yount, president; Norma C. Flaigg, vice president; R. L. Shultz, secretary; Charles Snyder, treasurer; George McRoberts, Chester L. Baker and W. N. Gibbens, directors; Mrs. Alvin Harkwell, librarian; Mrs. Alvin Harkwell, historian; and Mrs. H. T. Daniels, parliamentarian.—*Sooner Rockologist*

## POLISHED THUNDEREGGS MAKE ATTRACTIVE PLANTERS

Nothing appears more useless than a partially filled thunderegg. So many of the Ochoco eggs are beautiful with their solid portions depicting mossy and water scenes, gorgeous bands of carnelian agate lining a gaping hole in the center. Some of the Friday thundereggs instead of being filled in with agate or the plume so avidly sought after, will reveal the fragile beauty of delicate white stalactitic and stalagmitic formations of agate or chalcedony when cut. Don't make the mistake of tossing them aside as duds.

Slab polish the cut surfaces, twist inconspicuous pliable wire around the back of each half, finish it off with a loop for a handle and then plant a bit of delicate vine in the unsightly hole. Hang them in pairs or set them up for display. You'll find them the most noticed and talked about addition to your collection. It will be difficult to determine which has the most startling effect in third dimension: plant life growing from an agate scene or the growing vine demanding closer attention to the polished product.—Mary Blair in the Montebello Mineral and Lapidary Society's *Braggin' Rock*

## SULPHUR CRYSTALS ARE DELICATE; EASILY RUINED

The warmth of the hands will cause sulphur crystals to expand at the surface and crack. Specimens should be protected from sunlight and be handled as little as possible.

Sulphur is used in making gunpowder, matches, paper, fireworks, fertilizers, insecticides and in the manufacture of sulphuric acid. Enormous deposits were discovered in Texas and Louisiana at a depth of 600 to 1100 feet. To extract the sulphur, four concentric pipes are driven into the sulphur-containing deposits. Water heated under pressure to 170 degrees C. is forced through the two outer pipes, melting the sulphur. Hot air is then forced down the inner pipe to form a froth with the molten sulphur and the mixture is forced to the surface through the remaining pipe. It is then discharged into huge wooden vats to solidify. The product is about 99.5 percent pure.—Arrowhead Mineralogical Society's *Arrow Points*

## "QUOTES"

FROM THE GEM AND MINERAL WORLD

When you see no end to your troubles, just remember that a diamond is only a piece of coal that has been "hard pressed" for a long time.—Santa Barbara, California, Mineral and Gem Society's *Mineral News*

Some rockhounds spend a lot of time making spheres. No offense intended, but it seems pertinent to observe that a sphere is rather pointless.—*Sooner Rockologist*

A rock collection in the form of 35 mm. slides does for the rockhound what the long-play record did for the Hi-Fi fans: it provides a maximum of material in a minimal space. Storage problems fade away—that is, if you discount the bushels of rock in the basement waiting to be cut. As a space saver a collection of micro-mounts is the closest competitor to one of slides; however, the projectability of slides gives them uniqueness.—Indiana Geology & Gem Society's *Geologem*

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# AMATEUR GEM CUTTER

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

In cutting a cabochon from a sawed slab of agate or similar semi-precious gem material it may be necessary to remove considerable waste. In order to eliminate a great deal of grinding or resawing, a special type of "lapidary pliers" can be used to crush or nip off portions of the waste material. This type of pliers is in use in some commercial cutting shops.

The jaws of the lapidary pliers should be well rounded and the handles about six inches or more in length to give the needed leverage. The rounded jaws can be about an inch in length. This type of plier can be obtained in any hardware store at a nominal cost and is widely used for bending wire.

The knack of trimming a slab of agate requires a little practice, as the writer learned. Do not start operating on a valuable specimen. Select a discarded one for your first experience. There is, of course, a limit to the thickness of a sawed slab of agate which can be handled in this manner. Sections not over three-sixteenths of an inch can be trimmed readily.

In using the tool, select an outermost corner, taking a bite about an eighth of an inch deep, and apply pressure on the plier handle. This most likely will crunch off the irregular corner. When all the projecting corners have been removed by the crushing method, additional and larger fragments can be removed. Hold the agate slab firmly in one hand, apply the jaws of the tool, and with a rolling motion a fragment about one eighth of an inch deep can be removed.

By following the above outline it will be possible to nibble down a fairly large section in a few minutes. After you become adept it will be possible to trim quite close to the finished size, and what is more important, save time on the grinding wheels or the resaw. Do not attempt to clip off large sections. Otherwise you may fracture the section beyond the desired point. The rounded jaws on this handy tool appear to be more effective in controlling the breaking than ordinary jawed pliers.

\* \* \*

Difficulties are sometimes encountered in polishing facets on zircons, especially a large table facet which may be oriented parallel to the cleavage. Under these conditions the surface will tend to slough away during the polishing operation.

With Zircon, best results will be obtained by roughing out the gem at right angles to the optic axis. A satisfactory cut for zircon is the main crown facets at 43 degrees and the main pavilion facets at 41 degrees. Cutting the facets may be done on an iron or copper lap, six to eight inches in diameter, and operated at speeds of from 100 to 200 r.p.m. While 400 grit silicon carbide is satisfactory for the cutting operation, 400 *Norbide* will cut faster and leave a clean smooth surface, ready for polishing.

For polishing the facets use the tin lap with Grade A, No. 1, fine Carborundum Buffing Powder, or Damascus Ruby Powder. Best speed for polishing is 100 r.p.m.

Zircon is usually a heat-treated gem, and in some instances the heat treatment appears to render the gem somewhat brittle or granular. This may be noted in stones which have been over heated, or the heat treatment continued over a long period.

This supposition has not been fully substantiated by experiment with stones not heat treated. However, an occasional zircon will be encountered which is next to impossible to polish satisfactorily by any technique known to the writer.

The most difficulty encountered in polishing zircon is that offered by the cleavage. Most of the zircons used for gem cutting are mined as waterworn pebbles; from these the direction of the optic axes may be determined only with the aid of the necessary optical instruments. Should a cleavage sloughage be encountered in polishing the table facet or other facets, this difficulty can usually be overcome by changing the direction of polish, by redopping the stone. If the facet or facets of cleavage sloughage are of small area, polishing may be accomplished by allowing the lap to become dry and polishing with a light touch.

\* \* \*

Gem cutters in sanding numerous large flat surfaces of agate, often note that after a time the surface of the sander will appear slick. The agate will tend to glide or skid over the sanding cloth, failing to take hold or function properly. Ray Vallier offers the following remedy.

When the sander surface does not function properly with agate, apply to the sander surface, while in operation, a flat surface of a piece of common obsidian. Just what this does is not clear, but it does "renew" or correct the surface of the cloth in some manner or another, so that it will function much better on the agate surface. Perhaps the obsidian, being considerably softer than agate, tends to clean the sanding cloth of agate debris. The same technique may be used in handling large numbers of agate cabochons, but the slickening of the sander surface may not appear as noticeable as when working large flat surfaces of agate.

This method, according to Vallier, works in the reverse manner effectively. Large flat surfaces of obsidian are often sanded (like book ends), and the surface of the cloth will tend to clog or become slick. A flat piece of agate held against the cloth will help clear it.

\* \* \*

Collections of gems cut from fluorescent materials, both facet and cabochon, are becoming increasingly popular. For a long time the possibilities of this field remained more or less unknown and unexplored. There is a surprisingly large number of materials suitable for this purpose. Many of the spectacular Franklin, New Jersey, fluorescent minerals, while not generally regarded as gems, may be readily worked into cabochons well suited for fluorescent gem collections. Many of the Franklin specimens are compact and fairly hard and will take a good polish. A cabochon cut, for example, from a Franklin specimen showing fire-red calcite, strong green willemite and the powerful yellow of calcium-larsenite will make a most magnificent color combination, perhaps equalled by no other material available anywhere.

The common opal from Virgin Valley, Nevada, shows a strong yellowish-green, and finishes well in cabochons. This material is either found without inclusions or with fine moss-like inclusions, the latter making

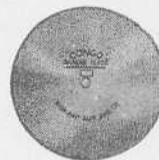
an attractive cut stone even without benefit of the ultraviolet lamp.

Among the other cabochon materials suitable are amber, uraniferous agate from many localities, aragonite, calcite from many localities, scheelite, fluorite, wernerite, willemite and numerous others. A great many gem materials which are generally cut in facet styles show a strong fluorescence, including both the natural and synthetic sapphires and the very rare benitoite. Kunzite and some diamonds may also show a strong fluorescence.

The possibilities of a spectacular collection of fluorescent gems are almost unlimited.

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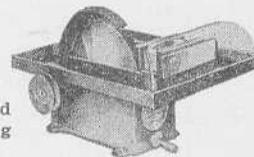
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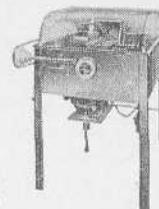
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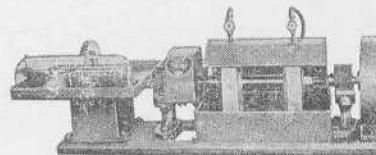
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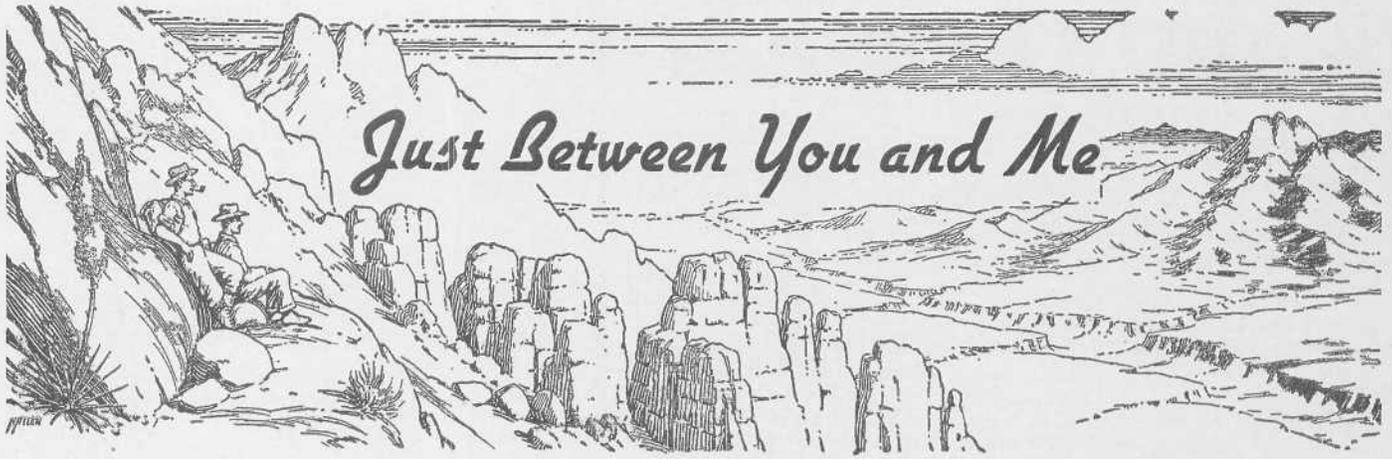
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# Just Between You and Me

By RANDALL HENDERSON

**T**HE SCENT of creosote bush is in the air this morning. It rained last night—a gentle rain that made no patter on the roof. But I knew it was raining when I woke up in the night and smelled the creosote.

Creosote—the mix they use for black-top paving—is vile smelling stuff. But the milder aroma that comes from the rain-moistened leaves of larrea is perfume to old-timers on the desert. For creosote is associated with rain—and winter rains on the desert are blessed events.

On January 1 when our wildflower correspondents turned in their reports there had been practically no rainfall on the desert and the outlook for spring wildflowers was very bleak. But as this is written, seven days later, the outlook is brighter. When I went out on the virgin desert this morning to determine the extent of the rainfall I found the sand moist to a depth of eight inches. That is enough to start the miracle of germination in millions of tiny seeds which have laid dormant for months, or perhaps years. This one rain—less than an inch—is not enough to insure an exceptional display of wild blossoms in March and April. More rain will help, too much wind will dry up the tiny sprouts when they first come through the ground, but at least the prospects are brighter than a week ago. We're hoping! For the desert carpeted with wildflowers is a landscape that inspires a deep reverence for the Creator of life on this earth.

\* \* \*

On this page last month I discussed the possible impact on Rainbow Bridge of the newly formed lake in Southern Utah when Glen Canyon dam is completed. Since then I have received additional figures from the Reclamation Bureau which seem to set at rest any fears there may have been as to the preservation of the Bridge.

The dam is to be 700 feet high—but this means 700 feet above the bedrock at the floor of the canyon rather than 700 feet above the bench mark on the bank of the river. Actually, water level in the reservoir at full capacity will be 11 feet lower than the base of Rainbow's lowest abutment. There is a deep trough under the bridge which carries Bridge Canyon Creek, and at high level the water in this channel will be 56 feet in depth—but it will not endanger the bridge in any way. Bridge Canyon Creek will become an estuary which will make the Bridge more accessible than it is today.

\* \* \*

The Navy has encountered so much opposition in its efforts to acquire additional millions of acres in Nevada and California for bombing and gunnery practice, the admirals have now come up with a new scheme. They

want to make a bombing range of the northern part of Great Salt Lake.

Protests are coming from many Utah organizations, including the Utah Wing of the Air Force Association and Utah Wildlife conservation leaders. The fish and game authorities say the range will endanger the nesting areas of birdlife since it will adjoin one of the state's refuges. The Air Force group, a civilian organization, fears it will be a threat to civil aviation. Fortunately, the lease which the Navy is seeking will have to be approved by the Utah state legislature — and strong opposition is developing there.

Southwesterners who have watched with growing resentment while the Army, Navy and Air Force have moved in and posted No Trespass signs on 25,000,000 acres of land in this region, will be gratified to know that Congressman Clair Engle of Red Bluff, California, will re-introduce a measure which failed to pass the Senate in the last congress—a bill forbidding further land grabs in excess of 5,000 acres without approval of Congress.

We are hoping that the day has passed when a general or an admiral can set up a million-acre target range merely by sending a memo over to the office of U. S. Land Management.

\* \* \*

Joseph Wood Krutch in his *The Voice of the Desert* writes about a ranchers' association in Colorado where the owners of 200,000 acres of land have posted notices forbidding the killing of coyotes. The ranchers also are opposed to the killing of weasels, hawks, eagles, skunks, foxes and other so-called predatory animals. Ranchers had learned that as these animals are shot and poisoned, the rodent population increases, and crop damage becomes more severe.

The time has come when Americans everywhere should re-examine old laws pertaining to the so-called predatory animals. The sparrow hawk is one of the birds on the list in most states, and yet the biologists who have made field studies tell us that this hawk is mis-named—that its diet is mainly rodents, that it is in fact one of the rancher's best friends.

Obviously, we human being have done a very bad job of keeping our world in balance—both the world of Nature, and the world of human relations. The news dispatches from Atlanta, Cairo and Moscow all testify to this latter conclusion.

Perhaps a good starting point would be here at home where a new and more enlightened treatment of our wildlife neighbors would make this a better place in which to live—both for them, and for us.

# BOOKS of the SOUTHWEST

## LOST DESERT GOLD IS AGAIN IN PRINT

After being out of print for two years, a new edition of *Lost Desert Gold* has been published by Ralph L. Caine, geologist and attorney, whose hobby is prospecting.

Caine's book is devoted mainly to the Colorado Desert of California—the region of the Lost Pegleg mine, and includes not only the original Pegleg story but a score of other legendary lost mines in the region.

Part II of the book is devoted to the geology of the Salton Sink area and Superstition Mountains. It is the author's theory that placer gold which had its origin in the Volcan and Ori-flame mountains to the West may readily have found its way to the floor of the desert by way of the San Felipe Creek, and that such gold as has been found in the gravels of the desert probably came from that source. The author suggests points at which such gold probably would be deposited.

Caine does not say the Lost Pegleg gold is in the Colorado desert, but he presents with the authority of a trained geologist evidence that this and other gold deposits could have found their way to this area. The accompanying maps throw much light on the geological formations of the area. It is an interesting book.

Published by the author, Ralph L. Caine, 900½ W. Jefferson Blvd., Los Angeles, California. 72 pp. with maps and halftones. \$1.50.

## NEW TOURIST GUIDE TO DEATH VALLEY RELEASED

Not too many years ago visitors to Death Valley, overwhelmed by its immensity and a little frightened by its reputation, often entered with some trepidation. They asked road directions often and what they usually received was something like: "Turn right at teakettle and then keep left until you come to rocking chair," or "go south 12 miles, then turn east at Tim Ryan." Then followed the long minutes of explanation—teakettle is a junction where a weathered teakettle rests under a bush, the rocking chair is a place where an old rocking chair

stands next to the road, and Tim Ryan is the grave of the late Tim Ryan.

Despite all this and thanks to better autos and an ever increasing amount of favorable publicity and good literature, the area's outstanding historic, scientific and scenic wonders attract more and more people each winter season.

Latest book on Death Valley is written by Ruth Kirk, wife of a former Monument Ranger (1950-53). Her guide for tourists should prove popular with those folks who are looking for an inexpensive non-technical handbook covering those aspects of Valley interest that the average family vacationer will most likely want to know about.

All the recognized main and side trips are described along with some suggested excursions into the back country and the more rugged four-wheel drive trips. Maps covering all these jaunts are included. The author also gives helpful hints to photographers, snatches of human interest, suggested time allotment for each trip, safety precautions, etc. The many photographs by Louie Kirk are outstanding.

*Exploring Death Valley* is published by Stanford University Press; paper cover; illustrated; index; \$1.75.

## INFORMATION-PACKED BOOK ON ROCKS, MINERALS OUT

Two easy to use keys to the identification of all but the rarest of California minerals and rocks make *Rocks and Minerals of California and Their Stories* well worth its cost. This little volume, written expressly with the beginning collector in mind, also contains 41 pages of two-color sectionalized maps of the state showing the known location of 84 different rocks and minerals.

And the authors, Vinson Brown and David Allan, do not stop here. They tell the stories behind the minerals, chart the mineral habitats, and present a brief history of California rocks and the state's geology. And to top it all off, 48 beautiful full-color pho-

tographs of outstanding specimens are reproduced in the book by courtesy of W. Scott Lewis of Palm Springs.

Published by Naturegraph Co., San Martin, Calif., 120 pages with illustrations, drawings throughout, bibliography and index. Paperbound, \$2.75; Cloth, \$4.50.

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are just a few of the more common denizens of the desert country. They are good friends to have and to know. You'll be living in a bigger world when you make their acquaintance.

The following is a list of books we recommend for your reading—if you would gain a speaking acquaintance with this fascinating desert world:

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**W5 DESERT WILD FLOWERS**, Edmund C. Jaeger. Fine handbook on desert flora, almost 800 species described and illustrated by line drawings or photos. Includes material on discovery and naming of plants, animal associations, Indian and pioneer uses, exploration of botanical names. \$5.00

**W8 FIELD GUIDE TO WESTERN BIRDS**, Roger Tory Peterson. Method of field identification especially helpful to layman. Profusely illustrated with drawings showing characteristic markings observed in flight. 40 pp. Illus. 6 pp. full color...\$3.75

**W9 POISONOUS DWELLERS OF THE DESERT**, Natt N. Dodge. "... should become as much a part of the kit of any desert visitor as his canteen." Description and habitat of giant desert centipede, scorpions, black widow spiders, kissing bug, bees, Coral snake, rattlers, Gila Monsters, and others. First aid. Illus., index, paper.....\$ .50

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