

VOLUME 48, NO. 2

APRIL-MAY 1984

ISSN 0194-3405

DESERT VISITS JULIAN

THE PONY EXPRESS

HOW TO RECOGNIZE METEORITES

DON JOAQUIN'S LOST GOLD MINE



Nuts for the Native Larder

By MARY BEAL

IF GOOD fortune has led you to the higher desert mountains, you have met with that distinctive member of the Pine family, the Pinyon tree. If you don't know it, let's scrape acquaintance with it now. There are two important nut pines at home in the desert—*Pinus cembroides* and *Pinus edulis*, but we'll note the necessary points of identification later and first follow up the Pinyon's line of human interest. Much local color centers around it, a picturesque ornament that sets off its utility in goodly fashion.

Compared with its numerous majestic relatives it is the runt of the family, seldom exceeding 25 feet, its usual height 10 to 20 feet. It furnishes very little shade, even when forming large groves. A Pinyon forest is open, the trees scattered rather widely apart. In true pioneer manner many of the clan venture into the most rugged environments pre-empting any convenient ledge where a bit of soil offers nourishment. Many a twisted, gnarly Pinyon have I seen among the crags and pinnacles of rocky ranges, clinging to precarious footholds, its roots often seeming to be embedded in solid rock.

Not one of the more imposing pines, it has been of first importance to life within its areas. Along the desert-facing slopes of the Sierra Nevadas, southward into Mexico, eastward throughout most of Nevada, into Utah and Arizona, the fruitfulness of the Pinyon has been a godsend to the inhabitants of the surrounding arid regions. Its sweet tasty nuts added richly-nutritious stores to the primitive pantry.

No more picturesque phase of early times among native tribes has been chronicled than the harvesting of the autumn Pinyon crop. A tenderfoot wouldn't expect much from such small cones, measuring $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long and almost globose, but the nuts take up at least half of that bulk, each oblong flavorsome morsel in its brown paper-shelled case $\frac{1}{2}$ to $\frac{3}{4}$ inch long.

The cones ripen their seeds in early fall of the second year but the provident Indian did not wait for the seeds to be released according to nature's schedule. They forced the green cones to open their scales prematurely by roasting them in huge bonfires, which put the human nut-gatherers several jumps ahead of the squirrels, jays, and other nut-lovers of the Pinyon belt. The nut harvest was important not only in the Indian's domestic economy; it was a gala affair, looked forward



Pinyon trees high up in the Providence mountains in eastern Mojave desert.
Photo by the author.

to from year to year. Along in September, as many members of the tribe as could travel set forth to the mountains, mostly on horseback, all in merry mood. From the well-chosen camping spot, all took part in the joyful work of gathering the toothsome crop. With long poles the nearly-ripe cones were beaten from the trees, gathered in large baskets or sacks by the women and children and dumped in huge piles, where the roasting fires were built, encircled by large stones.

It must have been a sticky dirty proceeding from start to finish. The trees may be the nuttiest of their family but they also have such a prodigal amount of resin that one can scarcely come in contact with any part of a Pinyon without taking on some of the sticky stuff.

In good years the trees are so prolific that the bountiful nut harvest not only supplied the Indians' needs but left a generous surplus for sale in accessible markets. Today this custom is carried on infrequently, the demands of necessity not being urgent. Fortunately there are always some whose wishful appetite impels them to make the pilgrimage. I have benefited more than once by such Pinyon excursions, thanks to the interest of my Pahute friend Katie the Basketmaker. John Muir pays high tribute to the nut pine as the most important food-tree on the Sierra, and calls it "the Indians' own tree," so highly prized that in early times they even killed white men for cutting them down.

Because of its small size the lumbering industry has had no interest in it, but in the days of the West's development it furnished timber, charcoal, fuel and rough fencing for mines and ranches.

The Pinyons are short-trunked and flat-crowned. They start out as shapely little spires, in traditional Christmas tree form,

but as they mature the tops flatten out, the divergent branches often crooked and drooping.

Pinus cembroides

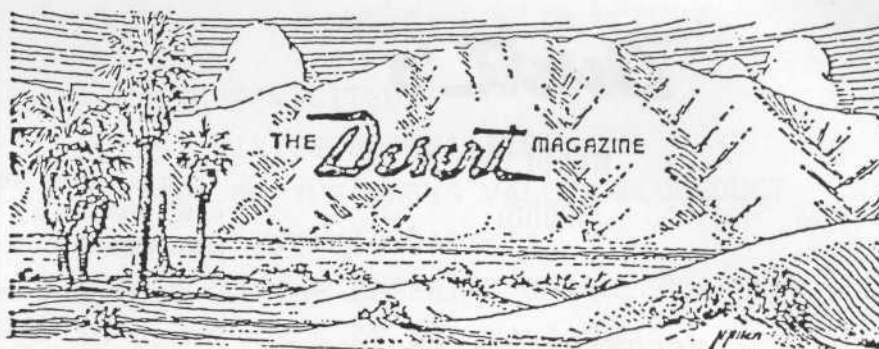
Botanists give this species two varieties, parryana and monophylla, the latter by far the most common and listed by some botanists as a separate species, *Pinus monophylla*, which in common parlance is Singleleaf Pinyon. Its blue-green needle-like leaves (1 to 2 inches long) are borne singly, only one in a sheath. The Parry Pinyon as a rule has four leaves clustered in each sheath and is restricted to the dry desert slopes of San Jacinto and Santa Rosa mountains. Monophylla is the common Pinyon of the Sierra's eastern slopes and the high desert ranges of California and Nevada, less common in Arizona. The species itself, *cembroides*, is known as Mexican Pinyon, and carries its leaves in threes. It flourishes in northern Mexico and crosses the border into Arizona, New Mexico and western Texas.

Pinus edulis

This is the predominant Pinyon of northern and central Arizona and the most widespread, its range extending eastward into western Oklahoma and as far north as southern Wyoming. It has been reported in the New York mountains of eastern Mojave desert. Oftener than other species it grows in extensive "pure stands," giving large areas the appearance of huge apple orchards, especially in Arizona and New Mexico, where the nut crop still finds its way to market in sufficient quantity to be profitable to its Indian harvesters. The leaves, unlike those of the foregoing species, are not quite cylindric, are deeply channeled and their color more yellowish green.

DW GRANTHAM, Editor
M. BANDINI, Photo Editor
P. RICHARDS, Circulation
L. GARNETT, Advertising

Volume 48, No. 2
April-May 1984



C O N T E N T S

GOLD POINT, NEVADA	Front Cover	Desert Staff
NUTS FOR THE NATIVE LARDER	2	Mary Beal
DESERT VISITS JULIAN	4	DW Grantham
CRAFTSMAN OF THE PAHUTES	8	Margaret Stone
WHEN SCALP HUNTERS RAN THE YUMA FERRYBOAT'	12	Arthur Woodward
THE PONY EXPRESS - PART I	16	Bandini and Loeb
BAJA'S ENCHANTED ISLANDS	21	Piet Van de Mark
DON JOAQUIN AND HIS GOLD MINE	26	John D. Mitchell
FIG TREE JOHN WAS A BLUFFER	28	Retta Ewers
THE YUCCA MOTH	30	J.D. Laudermilk
HOW TO RECOGNIZE METEORITES	34	H.H. Nininger
THE CACTUS CITY CHRONICLE	37	Desert Staff
DO AH SHON GOES TO THE TRADING POST	38	Sandy Hassell
MINES AND MINING NEWS	40	Various Contributors
BOOKS FOR DESERT READERS	42	Desert Bookstore
STAMP MILL, COMO, NEVADA	Rear Cover	Desert Staff

DESERT MAGAZINE (USPS 535230) is published every other (even numbered) month. Second Class Postage paid at Desert Hot Springs, California 92240. CIRCULATION AND ADVERTISING offices are located at 11213 Palm Drive, Desert Hot Springs, California, Telephone (619) 251-1150. Editorial office located at 6373 Elwood, Joshua Tree, Cal. Telephone (619) 366-3344. Please address all mail to Post Office Box 1318, Palm Desert, Cal. 92261. Subscription rates: \$15.00 USA, \$18.00 foreign, per year. See subscription form in this issue. POSTMASTER: Send change of address by Form 3579 to DESERT MAGAZINE, P.O. Box 1318, Palm Desert, Cal. 92261. Copyright 1984 by DESERT MAGAZINE. All rights reserved. No part of this publication may be reproduced in any manner without securing written permission from the publisher. CONTRIBUTIONS: The editor welcomes unsolicited manuscripts and photographs but they can be returned ONLY if accompanied by a fully postage paid return envelope. While we treat submissions with loving care, we do not assume responsibility for loss or damage. Writers Guide is free with large S.A.S.E., with sample copy of magazine, \$2.00. Please have a nice day.

Desert's

trip of the
month

DESERT VISITS JULIAN BY D. W. GRANTHAM

For this issues trip, we decided to combine a desire to visit the Northern Mother Lode area with one of the San Diego Prospectors/Rockhound Clubs outings.

Midway between San Diego and the Anza Borrego Desert is one of California's best kept historical cities. The entire town and its surrounding area are filled with history from the Butterfield stage route to gold mining to Indian Reservations, along with some of the best cherry cider and apple products in Southern California.

Of course, we mean Julian in San Diego's back country. Arising early one weekend day, we proceeded west from the Coachella Valley to Freeway 215 in San Bernardino. Proceeding south on 215 past Perris, Temecula, and Rainbow, we turned east on Highway 78 at Escondido. We passed the San Diego Wild Animal Park, drove through Ramona, past Santa Ysabel and Witch Creek, and into Julian. Total travel time from the desert was about three hours using this route.

There are several more interesting routes, but these were bypassed as our time was limited.

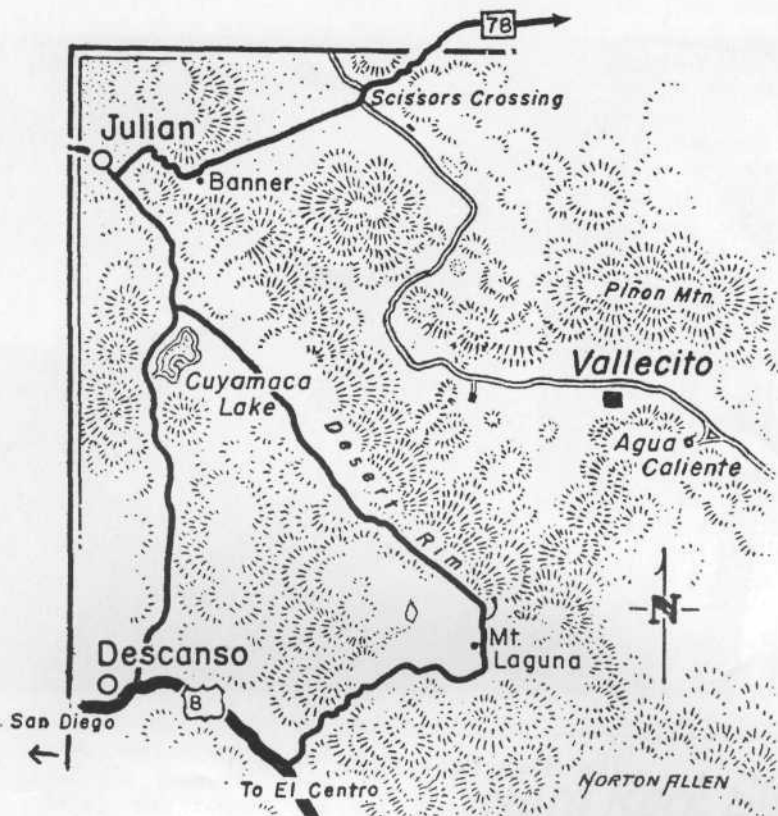
At the close of the Civil War, five Confederate Army Veterans, Drury, Frank and James Bailey, and their cousins, Michael and Webb Julian, left their Georgia homes in the desecrated South to seek new homes and fortunes in the West. They proceeded independently, but rejoined quite by accident in Eureka, Nevada.

Leaving the silver fields of Nevada, they proceeded to San Diego, but found work too scarce and too many Northerners there. They then proceeded to the eastern hill country of San Diego County where they found both a new home and their fortunes.

Upon reaching the valley in 1868, Drury Bailey is reported to have told the others, "This is the most beautiful place I have seen since I left home. Let's each of us locate a home here." But their beautiful place in the mountains was destined for discovery by others.

A prospector named Fred Coleman found placer gold near the confluence of the Julian and Wyanola creeks in 1869, setting off a gold rush and the founding of Coleman City. But it was the discovery of "hard rock" gold that started the Julian gold rush.

The most frequently repeated story is that a 13 year old boy, Billy Gorman, while gathering firewood for camp, noticed a pile of white rocks containing yellow specks.



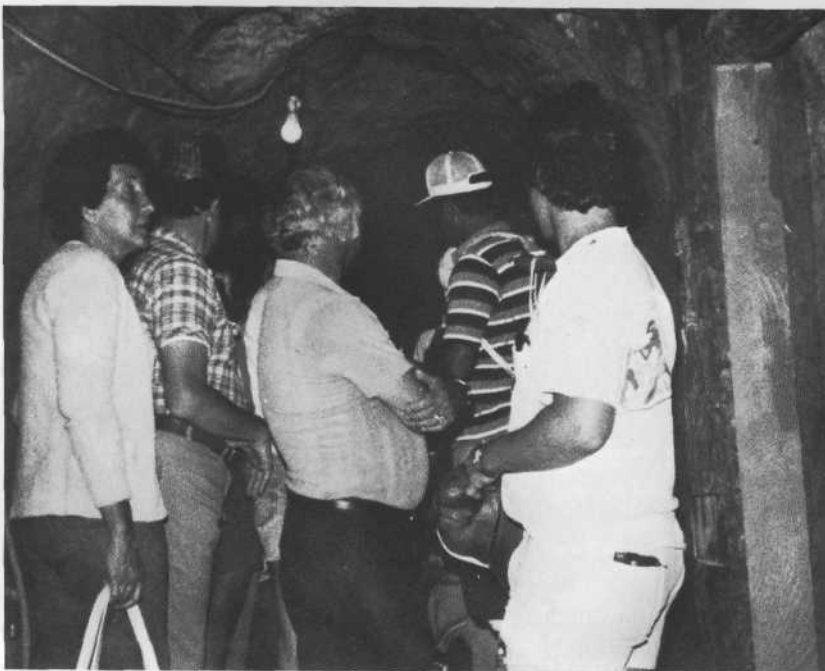
He took a chunk of the rock to his father and asked if it was gold. It was and the rush was on.

Another story is that the first quartz claim in what was to become the Julian Mining District was filed by Drury Bailey in February 1870. It turned out to be a pocket claim and was quickly abandoned. Five days later, H.C. Bickers recorded the discovery of the George Washington Mine, the first real gold producer in the district.

He filed a claim and proceeded with development. Drew Bailey filed a homestead to lay out a town in the north end of the valley. He named it for his cousin, Mike Julian. Mike Julian was later elected recorder of the mining district.

Gold was the seed from which Julian sprang and many abandoned mines punctuate the forested hillsides to the north and east of town, mines with names like High Peak, Washington, Eagle, Warlock, Stonewall, Golden Gem, and Ready Relief.

East of Julian at the edge of the desert at Banner and south to the Laguna and Cuyamaca Mountains, scores of other mine workings speckle the slopes and flats.



Inside The Eagle Mine Tunnel

The largest single producer in the entire mountain district was the Stonewall (Jackson) Mine, located 12 miles south of Julian and now within the boundaries of the Cuyamaca Rancho State Park. Discovered in 1870, the Stonewall produced some 2,000,000 in gold (at \$19 to \$20 per ounce). It was also the site of one of the more spectacular cave-ins in the area. Today, the site is marked by a sign and some tail piles, retaining walls, and rusting metal.

Today, our trip takes us to the Eagle and High Peak mines. They are open to tours and thanks to the club, many of us will visit and tour the mine, the workings, and stamp mill today.

The Eagle mine is located below the High Peak mine. They were both discovered in 1870 and have been small but constant producers since that time.

Our tour began at the entrance to the Eagle mine. We were led through the tunnel by a well-trained guide who pointed out the stopes and winzes, and the jump holes where the miners could hastily retreat when they heard the roar of an approaching loaded ore car.



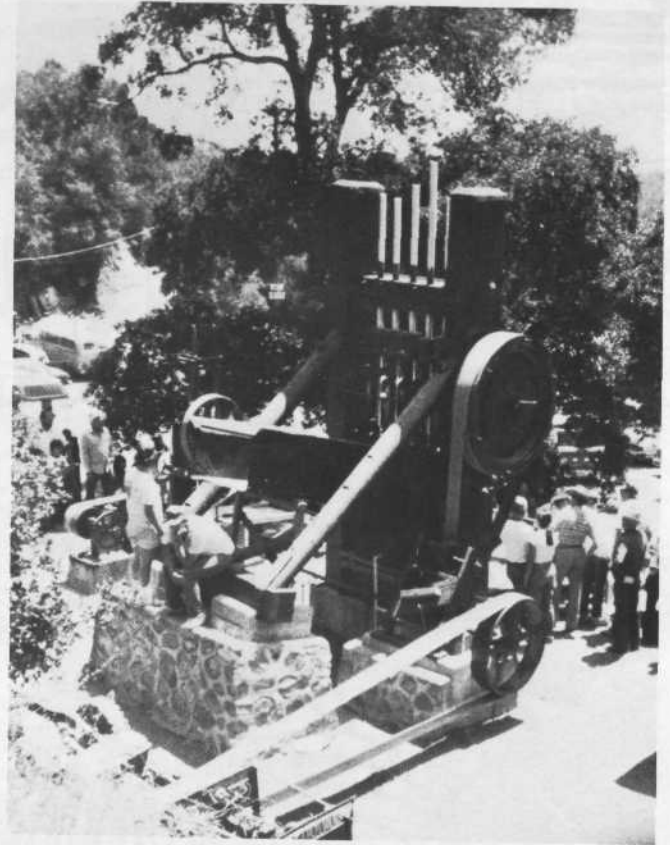
The High Peak Mine Tunnel



Ore Car Dump High Peak Mine



Ore Car Tracks High Peak Mine



Stamp Mill Eagle Mine

The unique "whorls" in the strata were shown. Normally, the tours exited through the High Peak mine, but this part was closed due to mining activities. We therefore walked back out the Eagle tunnel and over to the High Peak tunnel. We were then given a tour of the High Peak tunnel.

After the tunnel tour, we visited the blacksmith shop and looked at an outdoor display of mining equipment.



Opened in 1887, the Julian Hotel is still going strong.

Continued on Page 33



For 85 years, Mary Pepo has lived in the desert hills of Nevada, absorbing their purple and red and rose brown beauty. And this beauty is reflected in the tribal legends she retells—but most of all in the baskets and bead-work over which she works with loving care. The rich cream-and-brown baskets are traded to other tribes to be used as "Navajo Wedding Baskets" or "Apache Medicine Baskets." The beads are sewed on soft chamois gloves and moccasins, on cradleboard trimming and on a white deerskin dress, deeply fringed and covered with intricate bead pattern of mountains and valleys and clouds and rays of the shining sun. Here is an intimate close-up of a talented member of the Pahute tribe—daughter of the famous Indian scout Truckee.

Craftsman of the Pahutes

By MARGARET STONE
U. S. Indian Service photos

Mary Pepo, Pahute basket-maker. By stimulating production and sale of genuine Indian craft, the government hopes to increase the source of livelihood for many Indians as well as preserve a beautiful native art.

MARY Pepo was sunning dried fish in front of her reed and 'dobe house when I parked under the only tree in sight and went to her door.

Mary is an 85-year-old Pahute living in western Nevada among the deeply folded hills surrounding mountain lakes, Walker and Pyramid. Her people farm and graze the land that was the desert hunting grounds and battlefields of her tribe for centuries. From these lakes, set down in the midst of the desert, come tons of fish, caught by the Pahutes and dried over slow fires or in the sun and stored for winter food. The air was thick with the pungent smell as Mary came to welcome me.

A hundred years ago John C. Fremont paused on this very site, to rest from his ambitious travels and study the desert Indians at first hand. Many tales had been told of their ferocious attacks on western bound caravans and their stubborn resis-

tance to army troops bent on exterminating them. Fremont was appalled by their extreme poverty and primitive mode of life. "Humanity in its lowest form and most elementary state of existence," was his report.

If Fremont could visit this land today he would look upon irrigated grain fields and great herds of tribal cattle scattered over the brown hills and watering along the shores of Lake Walker. The agency stands on Fremont's camping ground and on the site of an ancient Pahute village. There Indians have been in the Nevada desert longer than any white man has been in America.

Mary turned the last brown fish and left the sun to do its work while she led me into her house, and placed a packing box for me to use as a chair. Mary Pepo is a kindly gentle woman full of humor and pride in her people, and not for an instant

inclined to make any apologies for them. Even though they are sometimes cold, sometimes hungry, always at odds with the government over water for their crops which they say has been diverted by dams to the fields of white farmers. Even though they are constantly feuding with federal officials over the taking of fish eggs from Pyramid lake and failure to restock their fishing waters; and most of all carrying on unremitting warfare with the great white pelicans for whose protection the government has made a refuge of Lake Pyramid. There the pelicans rest in white clouds and nest on its islands, and, say the Pahutes, consume tons and tons of fish which the Indians need for winter food. Mary is proud of her tribesmen who have survived drought and famine, warfare and aggression of white men, and who live and increase in numbers and prosperity on the desert lands of their forefathers.

"The Pahutes have always lived here," said Mary, busily sorting willow strips for the basket she worked on, as she talked.

"Our people first began life right here. Have you heard about the beginning?"

I shook my head and waited for the story which I felt sure would either begin or end with the great flood always featured in Indian stories of creation. I was right.

"For a long time there was no land to be seen anywhere. Water covered it all. But after a while the water began to go away. I guess it soaked into the earth. As the water dropped, Jurangwa (Mount Grant near Walker lake) stood above it and right on the top was a small fire that the water had never reached. The wind came up and high waves were about to beat out the fire—the only fire anywhere in the world—but a sage hen flew against the wind and with her wings beat back the water. The feathers on her breast were burned black by the fire she saved, and even to this day all sage hens have black breasts.

"My people try never to injure a sage hen but often hunger makes it necessary, and then they always build a fire and put those black breast feathers in it to remind

the spirit of the bird that they have not forgotten, but that hunger was too strong.

"After the great water went away leaving our land as it is now, Numinaa (Our Father) stepped out of Jurangwa where the small fire had kept him warm and dry, and went to the Great Sink, the last place the water left, and there made his home. Ibirdsii (Our Pahute Mother) followed him and was his wife. They had two boys and two girls, and the father taught the boys to hunt with bow and arrows while our mother made sticks and taught the girls to dig roots.

"One boy and one girl went to Pyramid lake and became fish eaters. My people are from them. The other boy and girl went north and ate raw buffalo. Thus the Pahutes were scattered. After the children went away our parents went back to Jurangwa and disappeared in the mountain."

While she told the story I studied her and her home. She was slender and erect for her 85 years and her eyes were as bright and clear as a girl's. Around her

head she wore a green silk scarf tied gypsy-wise. Her figured cotton dress was clean and over it she had tied a checkered apron. Navajo rings were on her fingers and her feet were covered with saffron colored buckskin moccasins hand-sewed and decorated with beads. They were of her own making she said.

Her house was a long narrow structure made of split cottonwood poles, reeds and adobe. It was divided into two rooms and two small windows gave light. The floor was hard packed earth and the roof was reeds covered with dirt. In the room where we sat was an iron bedstead, the mattress covered with a handwoven blanket such as I had not seen among Indian work. Mary explained that it was the weaving of a Shoshone neighbor of hers, and that it was traded to her by the weaver for baskets and moccasins.

Many Shoshone Indians live among the Washoe and Pahutes in western Nevada, but the Pahutes number almost 6,000 and are by far the larger tribe. Hopi Katchina dolls and red ceremonial sashes hung on

Indians round up their own cattle on Pyramid Lake Indian reservation which surrounds Pyramid Lake in Nevada. Herds were started with a small number of cattle advanced by the government. They are now repaying the government's loan with cattle.





This is the baby of Amy Jones, Washoe Indian girl who was taken into the Pyramid Lake Pabute band when she married a Pabute Indian. Amy is secretary of the tribal council.

the walls with painted ceremonial gourds and headdresses from the Rio Grande Indian villages.

"We trade with all the other tribes for the things they want and do not make. They like our beaded gloves and mocca-

sins, and they use only our shallow mush bowls in the Navajo and Apache healing dances." She held up the basket she was making. "This is going to be what is called 'Navajo Wedding Basket,' or 'Apache Medicine Basket.'"

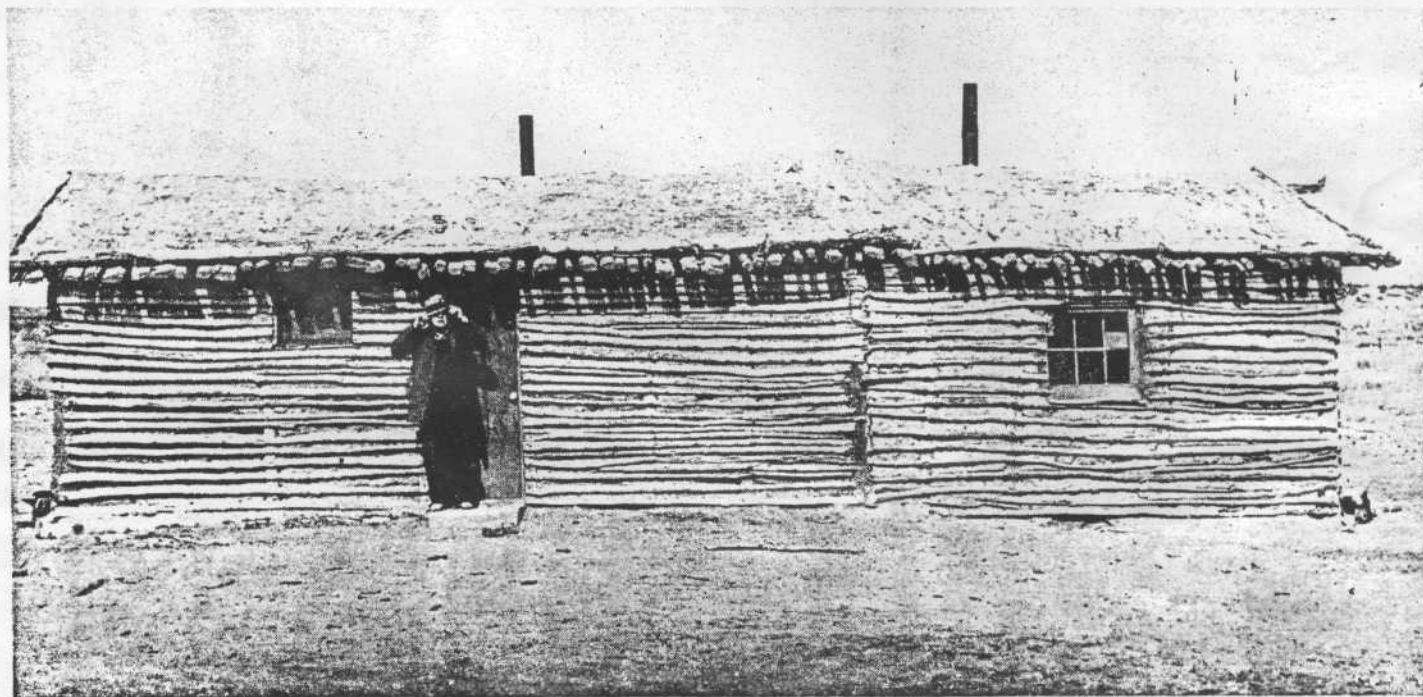
I could see that she was making one of the large shallow mush bowls that figure so prominently in all Navajo ceremonies from weddings to burials. It is usually 12 or 14 inches across, and woven in rather wide coils, the covering being the aromatic sumac, which is split to the width desired by the maker and left either its original cream color or dyed a reddish brown with mountain mahogany dye to be used in the pattern always woven into such a basket.

This pattern is a sort of square cross joined to similar square crosses forming a circle around the basket, with just one opening in the pattern. This opening occurs at the same place in the basket where the end of weaving is discernible. The circle is left open, not to let out evil spirits, but so that the place of souls will not be closed thus cutting off future births into the Pahute tribe. With use and from the oily meal used in the bowls they acquire a sheen that gives them unusual beauty. I wonder if many people witnessing Apache and Navajo ceremonies and later purchasing similar baskets know they are the work of Nevada Pahutes and not really "Navajo" baskets at all.

Mary Pepo showed me the carrying baskets she had woven and uses when she gathers plants and basket materials. They are very similar to Apache burden baskets.

And the water jars covered with piñon gum could be mistaken for those of the Supais, Hualpais or the Apaches. These

Pabute home—a long narrow structure made of split cottonwood poles, reeds and adobe.



three styles seem to exhaust their basket making talents.

While we were talking a beautiful Indian girl came bringing her baby on her back. The baby was laced firmly to a native cradle-board with a basketry canopy and fine beaded buckskin trimmings. The old lady forgot me and her basket making while she gathered the cradle-board into her arms and crooned to the child in the Pahute tongue. Such a proud great grandmother!

The baby's mother was a Washoe girl married to a Pahute, and adopted into the tribe because of the marriage. She was the secretary of the tribal council for the Pahutes, and a very modern and charming girl. Still she clings to the carrying board for her lusty young chieftain, and makes sure his back will be straight and strong by keeping him laced to it. She tossed the cradled baby to his place on her back and he watched us with round unwinking stare as his mother carried him away.

"When I was a girl"—how often had I heard white women begin criticism of the younger generation with those very words—"when I was a girl, women did not choose their husbands as that one did. We married in our own tribe and we married the men our fathers chose for us. I was promised to my father's best friend even before I could weave a basket or smoke fish for winter storing. My father was a great man in the councils. He guided white men when they first came to our desert and the river Truckee is called for him. Never was a party lost in the great salt sinks when he was the guide."

"Did you like the husband your father chose for you?" She went back mentally some 70 years and considered the matter.

"I can't think much about it now. He was old and soon he died and then I married a man of my own choosing. A widow can do that.

"All that I can remember is that he wanted beans cooked like the white people cooked them, boiled and boiled and with fat meat in them. I wish I knew his grave so that it could have flowers on it when the other graves have."

I did not question her about this, because I had heard how the Pahute women and children go up into the mountains on Memorial day which they have taken as some special day of their own, and bring huge baskets of wild flowers down to the valley, covering every grave with them. Pahutes never have cremated their dead, and they keep moving the limbs of dead warriors until they are buried in order that they will not go into the hunting fields of the other world with arms too stiff to draw a bow.

"My people used to go out into the mountains and gather huge baskets of pine nuts and store them for winter. My son who works with the government on making the water run in the ditches through the fields, always goes with me even these

days and we store many baskets full of them to eat in the winter time.

"It was always time for a rabbit hunt after the pine nuts were gathered. All the women and children formed a great circle and beat the grass and bushes with sticks and shouted until the rabbits went into the center of the ring. The men waited there and killed them. We took the skins and dried them and wove them into blankets, and the meat was torn from the bones and dried for winter use.

"Now we dry and smoke only the cui-ui (pronounced kwee-wee). Next week we go to the 'lake where the cui-ui live' and you should be there to see the great fish and how we take them and smoke them." I firmly resolved to be there.

Mary reached under the bed and brought out a box. From it she unwrapped a garment she was making out of white deerskin. It was as soft as chamois and the yoke of the blouse was deeply fringed and covered with intricate beading in delicate

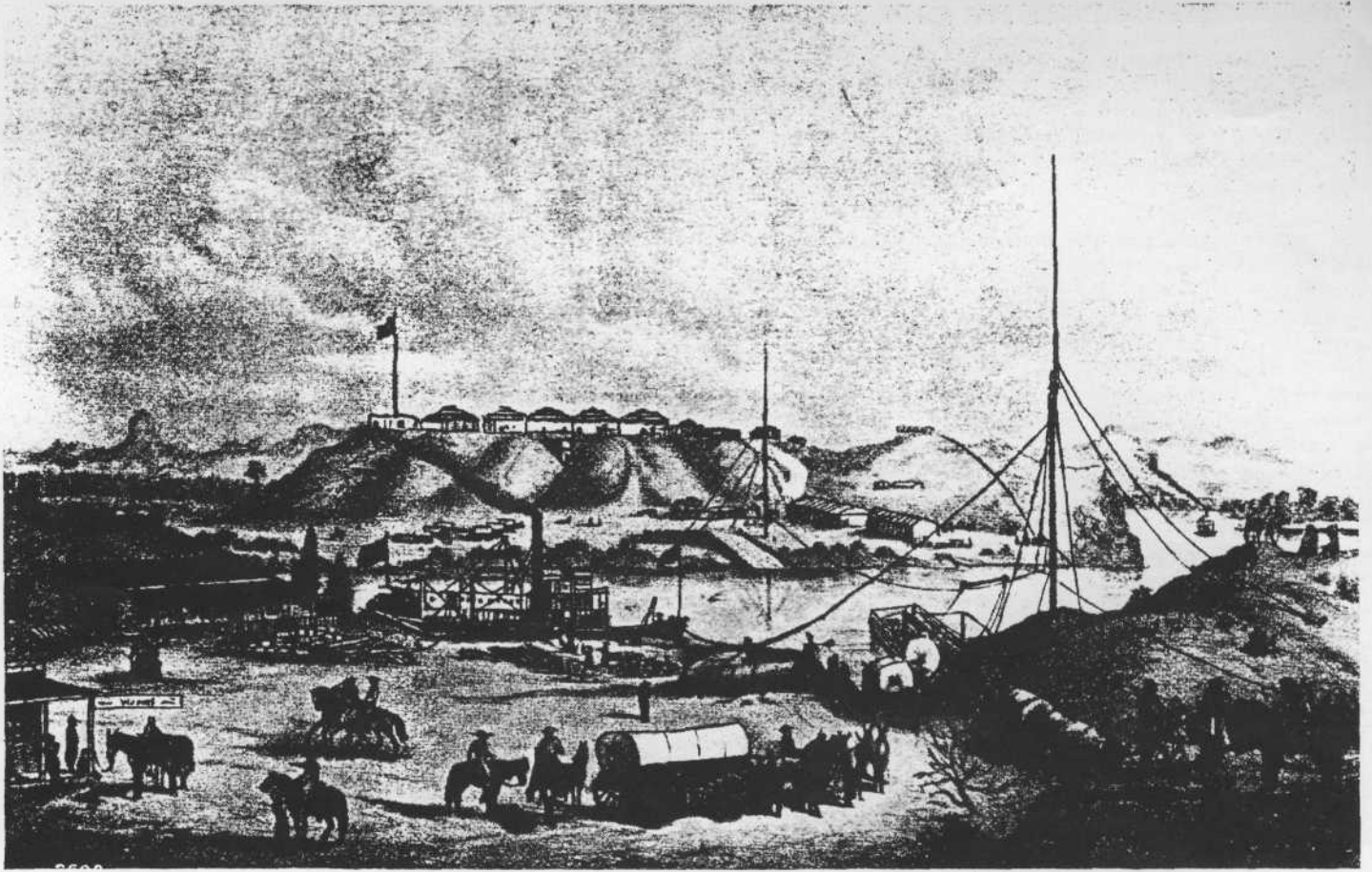
colors. Here was a work of love by an artist. This native maiden's dress was to be worn at the Gallup Ceremonial in August and the old grandmother was doing the outstanding work of her life in order that it might be perfect in every way. The pattern was of mountains and valleys and clouds and rays of the shining sun. The skirt had no beading but a deep fringe of the deerskin was around the bottom instead of a hem. Here was a garment worth its weight in silver.

Almost all the Pahute women smoke and tan buckskin out of which they shape gloves and moccasins for sale to trading posts and tourists. But this ceremonial dress for a modern Pahute girl was the most beautiful Indian work I ever have seen. Only a fine oil painting could compare with it.

Mary Pepo has not spent her life in the hills of the Pahute desert without absorbing their purple and red and rose brown beauty.

Shoshone Indian woman with rugs of her own weaving, outside her home on Walker River reservation, north of Walker Lake, Nevada.





Old Fort Yuma on the bluff above the Colorado river.

When Scalp Hunters Ran the Yuma Ferryboat

When John Glanton and his scalp-hunting renegades reined their horses at the Yuma crossing of the Colorado river in February, 1850, they envisioned a gold mine in the ferry being operated by Dr. A. L. Lincoln. Glanton promptly announced himself as a partner who would henceforth see that the ferry service was "managed properly." His exorbitant rates, often collected with gangster methods, and his ruthless elimination of competitors brought about a situation which compelled government action and the eventual establishment of Fort Yuma.

By ARTHUR WOODWARD

ON THE morning of April 23, 1850, three white men, members of the renegade band of John A. Glanton's band of Apache scalp hunters, burst from the willow thickets fringing the Colorado and raced for the protection of the rude ferry buildings some 300 yards away. Fear spurred their heels. As they emerged into the open a sleet of Yuma war arrows flickered around them like grey streaks of deadly rain. William Carr, one of the men, took an arrow in his left leg but

he dared not pause to remove it. His companions, Marcus L. Webster and Joseph A. Anderson, were firing erratically at the swarm of 40-odd Yuma warriors baying at their heels.

A few musket and pistol shots smacked flatly on the warm air, and white bolls of woolly black powder smoke blossomed unnaturally among the arrowweed and mesquite thickets. Before they reached the huts more Indians appeared and the panting men ran for the protection of the *jacales* in the Mexican camp not far from the ferry. The doors were tightly closed and the terrified inmates would not admit the refugees. The river was their last resort and the all but exhausted men fell into a small boat and pushed off into the stream.

Although they were unaware of it, they were at that moment the sole survivors of the Lincoln-Glanton ferry company which for about 14 months had been reaping a rich reward of inflated ferry fares from unfortunate gold hunters and home seeking emigrants crossing into California, via the southern route.

The ferry had started honorably enough as a legitimate business financed and operated by Dr. A. L. Lincoln, who is said to have been a distant relative of Abraham Lincoln. Dr. Lincoln had been in Mexico and late in 1849 started overland for California. He reached the Colorado the latter part of Decem-

ber and seeing the possibility of a ferry at the junction of the Gila and Colorado rivers, built a few mud and pole buildings on the California side just below the present site of Fort Yuma. Little did he dream that in a trifle more than a year his death and that of a gang of lawless renegades would be the direct cause for the establishment of a United States military post erected to guard the destinies of all future emigrants seeking admission to the Golden Land.

Dr. Lincoln began operation about January 1, 1850. He seems to have been a fair man, but too mild for a frontier ferryman. He employed three or four men to help him. They treated the Indians fairly and there was no trouble along the river.

On February 12, 1850, John A. Glanton, a blackleg lawyer from Tennessee and more lately from San Antonio, Texas, and still more lately from the state of Chihuahua, Mexico, and his lawless mob reined their jaded horses on the Arizona shore and waited for the ferry. There were nine men in Glanton's gang. Most of them were from Texas and Missouri. They were a ruthless, quick shooting, hard fighting lot. Their most recent income had been from the sale of human hair.

Originally they had hired out to the state of Chihuahua to collect Apache scalps on a sliding scale of prices ranging from \$25 for children through \$50 for women and \$100 for men. It was easy money for these border ruffians, some of whom had seen service in the Mexican war and had lived by their wits since the close of the conflict. Temptation urged them to sell to the Mexican officials any locks of black hair that might be found and when the purchasers discovered to their horror that certain of the Mexican population of Chihuahua were reported dead and scalped, the finger of suspicion pointed bloodily at Glanton and his crew. Without more ado the scalp hunters, in the parlance of the day, "sloped" for California where gold could be picked up from the ground or out of miner's pokes with a minimum of effort.

Glanton watched Dr. Lincoln operate for a week or so and saw that here was a golden opportunity if the ferry were properly managed. Glanton told Dr. Lincoln that he had a partner and thenceforth the ferry fares were collected by Glanton's men. The prices for crossing were exorbitant but since this was the only ferry in operation at that time, the unfortunate gold seekers were forced to pay or sit and starve on the Arizona shore. The majority paid and their grumblings were silenced by the sneers of the ferrymen and the tacit threats of lost baggage and revolvers prominently displayed in the waist bands of the renegade conductors. Thus Dr. Lincoln became a silent partner. No doubt he wished to be free of this obnoxious gang but there was no escape.

Money rolled in. It is said that the gang possessed some \$50,000 in silver and \$20,000 to \$30,000 in gold when the blow fell. It is known that prior to the sudden uprising of the Yuma Indians, Glanton and his men had deposited between \$6,000 and \$9,000 with Judge Benjamin Hayes of San Diego and had left a herd of 22 mules and horses in that town as well.

Trouble with the Indians began when a General Anderson from Tennessee who refused to pay the toll demanded for crossing on the Glanton-Lincoln ferry went down stream and built a boat. He crossed all of his stock and outfit and then turned the ferry over to the Yuma Indians under their leader Pascual with the stipulation that the Indians should not charge travelers more than \$1 per person, \$1 per animal and \$1 per pack. This ferry was six miles distant from Glanton's establishment. To better facilitate intercourse with the whites the Indians hired an Irishman, Callahan, to operate the ferry for them.

Naturally Glanton would not tolerate a competitor, more particularly when the competitor was an Indian. Accordingly, the Irishman was killed and robbed—and the murder was laid at the door of the Indians. The Indian ferry was mysteriously destroyed. Chief Caballo Sin Pelo went to Glanton and remonstrated. He offered to operate with the white men. The Indians would herd all animals safely across the river and Glanton

could collect for the wagons and the people. This offer infuriated Glanton. He made the mistake of whipping Caballo Sin Pelo with a stick and then kicking him out of the house.

That manhandling of Caballo Sin Pelo, head of the Yuma nation, was the death warrant of all the white ferrymen on the Colorado. The Indians bided their time. They knew a frontal attack would be fatal. Their only weapons were long arrows with fire hardened points, and the heavy potato masher shaped war clubs. Against the repeating revolvers and straight shooting rifles of the Americans those primitive weapons would be of little use. Indian-like they took their insults into their hearts where the veridigris of hate cankered and corroded.

They watched and waited.

The morning of April 23 the ferry force was divided. There had been 15 men all told at the ferry. One of these men had got into trouble at San Diego and had gone north to Los Angeles. On this day six men had crossed the stream in a boat to



"Three white men . . . burst from the willow thickets bringing the Colorado and raced for the protection of the rude ferry buildings . . ."

ferry some animals across. Five others including Dr. Lincoln and Glanton were around the ferry house, and the three men, Carr, Webster and Anderson had been sent to a willow thicket with a hatchet to cut some willow poles.

The six men in the boat were surrounded and taken alive without a shot being fired. En route to the California shore they were clubbed to death and thrown into the river. Dr. Lincoln was asleep, Glanton and his men were in a drunken stupor. Caballo Sin Pelo led the war party in person. He wanted the satisfaction of killing Glanton, which he did quite effectively with a rock. Lincoln and the other three men were clubbed to death. Only the three men in the willows escaped the massacre. So determined were the Indians to wipe out all vestiges of their persecutors that the three dogs belonging to the station were tied to the bodies of Lincoln and Glanton and burned alive with the bodies in the ferry houses.

After racing downstream for some 14 miles, the three white men put into shore. Their pursuers had melted away unable to keep up with the boat. The small craft landed on the Arizona bank just about opposite Algodones. When darkness fell the trio crossed to the California side. The fear ridden men crept into the woods and hid until moonrise. When they emerged they discovered the Indians had stolen their boat. The men fled south for another 14 miles. Here they encountered a party of about 20 Indians who apparently had been trailing them.

The Americans were in a tight spot. They had 11 cartridges between them for their three six shooters. With almost empty guns they bluffed the Indians away but as the latter retreated a Yuma man and a boy who spoke Spanish shouted at them in that language:

"You'd better run away if you can because we intend to kill all of you."

Cautiously the men made their way back up stream and reached the scene of the massacre at daylight on the morning of the twenty-fifth. From the Mexicans they learned the particulars of the tragedy and thence started across the desert toward San Diego.

On May 9, 1850, William Carr stood before Alcalde Abel Stearns in the sleepy little cow town of Los Angeles and set forth the particulars of the uprising but failed to tell all of the facts. On May 23, Jeremiah Hill, an emigrant who had crossed the river just after the affair, made another deposition and gave some insight into the true cause of the fracas. However, the wheels of white man's justice, however warped they might be in this instance, were already in motion.

Governor Peter Burnett of California had issued orders to the sheriffs of Los Angeles and San Diego counties to raise and equip posses of men to proceed to the Colorado and establish law and order. A volunteer militia outfit under the command of Major General J. H. Bean and General Joseph C. Morehead consisting of 100 men raised in two different detachments was organized and equipped with some difficulty. General Morehead was authorized to purchase animals for the expedition from the rancheros around Los Angeles and pay for the mounts with state scrip.

The native Californios understood gold and silver but paper promises were something else, hence Morehead and Bean had an unhappy time trying to persuade the rancheros to part with their stock. Eventually Morehead marched his command to the Colorado where he found the Indians quiet and going about their business. This did not suit the firebrands whom Morehead had collected, mostly emigrants from Arkansas and Missouri. A militiaman shot an Indian and when the Indian chiefs remonstrated with Morehead, the latter told the Yuma leaders that the white men came to treat or fight as the case might be.

Pascual the war chief retorted that he wouldn't treat but he was most willing to fight if the white man really wanted it. Shortly thereafter 150 Indians armed with bows and arrows attacked the volunteer's camp. Twenty Indians were slain. Morehead broke camp and fell back into the stockade that had

been built by the ferry company. This was virtually the end of the so-called "Morehead War." All told the Gila expedition cost the state of California a total of \$76,588.26.

After Morehead's fiasco, Major Samuel P. Heintzleman, stationed at San Diego with a regular army unit, marched across the desert with three companies of infantry to found a permanent post at the junction of the Gila and Colorado rivers. Heintzleman had received his orders in July, 1850, but it was not until November 27, 1850, that he and his force of United States regulars established their "Post at the Mouth of the Gila."

The first site of the camp was about six miles below the present Fort Yuma Indian school, which occupies the area covered by the well laid out fort of a later date.

When Heintzleman moved his camp onto the rocky ridge he settled on the ground that had been Camp Calhoun laid out by Lt. Cave J. Coutts, leader of the military escort for the Whipple Boundary Survey, October 2, 1849.

This first rude camp was called Camp Independence. It was enclosed by a stockade and was in the lowlands. In March, 1851, the command moved to higher ground and occupied the very spot where once stood the ill-fated Mission de la Concepcion, where died Padre Francisco Garces on July 19, 1781. Crumbling adobe and charcoal debris of that tragedy were shoveled away by the soldiers under Major Heintzleman and Lt. Thomas W. Sweeney as they laid out the future Fort Yuma. The commandant's headquarters rose on part of the old stone foundations of the destroyed mission.

However, the jinx that hovered over that rocky hill laid its hand upon the American soldiers. Provisions dwindled and the supply trains expected by Heintzleman did not arrive. Accordingly in June, 1851, Heintzleman and his command fell back toward San Diego, leaving Lt. Sweeney, the fighting Irishman who had lost one arm in the Mexican war, with a detail of 10 men to hold the post.

No sooner had the main body of troops left the river than the Indians under Caballo Sin Pelo began to act ugly again. Sweeney threatened to give them a dose of canister from his 12-pound field piece and so dispersed them. However, provisions sank lower and lower and at last Sweeney, with a few reinforcements, was forced to retire from the river. He arrived at Santa Ysabel in the mountains of San Diego county just in time to participate in the windup of the Garra uprising which had the entire southland in a turmoil. Prior to leaving the camp on the hill Sweeney had dug a cache and hidden all surplus government property, which the Indians dug up and appropriated as soon as the soldiers were out of sight.

The main difficulty in maintaining the post on the Colorado was the inability of wagon trains to supply food to the troops. A depot of supplies was ordered established at Vallecito and arrangements were made to send ammunition, clothing and food via steamer to the mouth of the Colorado, and thence by river boats upstream to Yuma.

On February 29, 1852, Heintzleman and Sweeney once more reached the Colorado and reoccupied the fort on the hill. Henceforth it was to be a permanent post. The Indians had made a thorough job of burning the willow-pole and mud quarters and the troopers were more than disgruntled to think that they would have to begin all over again.

In March Heintzleman decided to end all Indian hostilities in the vicinity of Fort Yuma. Three detachments consisting of men from the Second Infantry and the First Dragoons scoured the country between the two rivers and to the north of the post. The non-arrival of the "Sierra Nevada," the first U. S. military steamer to essay a trip up the Colorado with badly needed supplies caused Heintzleman to send Major Fitzgerald with 24 men of Company E, First Dragoons, downstream to learn the cause of the delay. Twenty-two miles below Yuma the soldiers were ambushed and seven men were killed. The troops pushed on to the mouth of the river under great difficulties, sometimes

wading in water up to their thighs for miles at a stretch. A current news account of the day stated "All officers of the army engaged in their suppression unite in the opinion that the Yumas are 'some' and that a harassing border Indian war will for a long time continue to furnish them with ample professional employment." On October 11, 1852, Major Heintzleman issued an order announcing the termination of hostilities with the river tribesmen. "The recent expedition has resulted in their entire subjection to the United States authority. To continue this good understanding the Indians must be treated with justice and kindness."

Although Indian troubles virtually ceased the garrison at Fort Yuma had other matters to engage their attention. Incoming travelers swarmed into the post garden, as a result of which the ferry company was forced to move downstream to a point within a half mile of old Camp Independence.

This was good for the vegetables but the officers and men missed the excitement of the ferry where hundreds of men, women and children as well as thousands of animals crossed each month.

On the 26th of October shortly after the end of the Indian war misfortune again fingered the miserable collection of huts comprising the fort. The bang of the musket of sentry on Post

Number 3 and the dread shout of "Fire," brought everyone out of quarters. D company's kitchen was aflame. In a short time D company's quarters went up in a blaze. The huts occupied by H company along with the kitchen were next to go. The guard house burst into flame and as the men were fighting the blaze in I company's quarters the cry was raised that the commissary store house was on fire.

The last information brought terror to every face. In that building were all the commissary stores and what was worse there were two barrels of cannon powder and about 40 boxes of ammunition. Major Heintzleman and Lt. Sweeney rushed for the flaming building calling on a detail of soldiers to follow them. Only a few of the old soldiers responded, but even they paused at the door. It was a dramatic moment. The two officers were the only men inside the building. The roof dripped fire. Large flakes of burning material were falling down upon the boxes and barrels. Frantically the officers brushed the sparks aside.

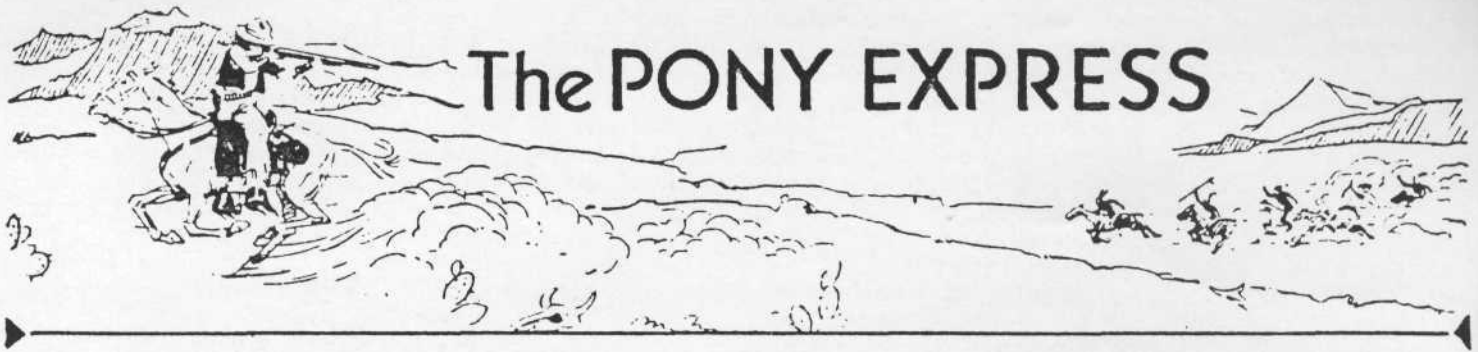
"For God's sake go get some men," shouted Heintzleman.

Sweeney dashed out and rounded up some soldiers who were on the opposite side of the hill and marched them back into the burning building. The two officers remained in the hut until the last of the powder and ammunition was carried out. None of the

Continued on Page 23



"'For God's sake go get some men,' shouted Heintzleman."



Before the inauguration of the Pony Express or "Horse Express" as it was first called, the carrying of mail between the East Coast and the West was very slow to say the least.

The first United States mail service to the Pacific Coast was to Oregon, in March of 1847. California and Nevada had not yet become states.

C.L. Cady organized one of the first western express companies on July 24, 1847. His intention was to maintain a weekly service between San Francisco and Sutter's Fort (Sacramento). However, it failed.

In 1849, a man by the last name of Todd travelled through deep snow and over steep mountain trails to deliver letters to the gold miners. He charged from \$1.00 to \$4.00 for each letter delivered, according to the distance and hardship in delivering the various letters.

An Overland Mail Stage service was established from the Missouri River to Salt Lake City, Utah Territory in 1850. The stage came through Santa Fe, New Mexico. The next year, 1851, a monthly line was begun from Sacramento through to Salt Lake City. This contract was awarded to Absalom Woodward and George Chorpensing.

Woodward was later killed by Indians. But it still required about sixty days for the mail from California to reach the East Coast.

A greater portion of the mail was carried by the Ocean Steamship Companies. But the sea route was slow. With the rapid growth in population due to gold and silver discoveries in California and Nevada, the pressure was on the government to provide a more reliable and faster mail service.

In 1857, an act of Congress provided for a semi-weekly service from the Missouri River to the Pacific Coast at a compensation of \$600,000.00 per annum. The Butterfield people were awarded the contract to carry the mails over what became known as the Southern Route. This route was established by the Butterfield Stage Company and ran from St. Louis, Missouri, across the Arkansas River at Fort Gibson, through Texas to El Paso, down the Gila Valley and across the Colorado River, through the back country of San Diego and Riverside Counties, to Los Angeles, and then on to San Francisco. The time required to make the trip was about 21 days.

The first trip was made in 1858, the mail traveling in coaches which carried a maximum of 6 passengers, three sacks of mail, one sack of newspapers, and were drawn by from four to six horses or mules. At the height of traffic for this company, they employed 800 men, owned 100 concord coaches, 1,000 horses, and many adobe stations, each built about 10 miles apart.

On October 15, 1858, the first Overland Stage from St. Louis, Missouri arrived at San Francisco, making the trip in 23 days, 18 hours and 40 minutes.

Great efforts were being made by Congress in Washington D.C. to build a "Pacific Railroad" but all attempts were unsuccessful due to the strong sectional conflicts between the North and the South. The Civil war was just a few years away. The people of the West therefore turned their attention to the next best form of transportation, the stage coach. Thus the Butterfield Overland Mail service was chosen.

Senator William M. Gwin, elected to the Senate from California, travelled over what was called the Central Route, in 1854. He urged Congress to build a railroad over that route, but the regions west of the Mississippi River were considered unfit for travel--inhabited by Indians and subjected to furious winter storms and heavy snowfalls. Senator Gwin also advocated carrying the United States mail over this Central Route but due to the politics of the period and active opposition of the



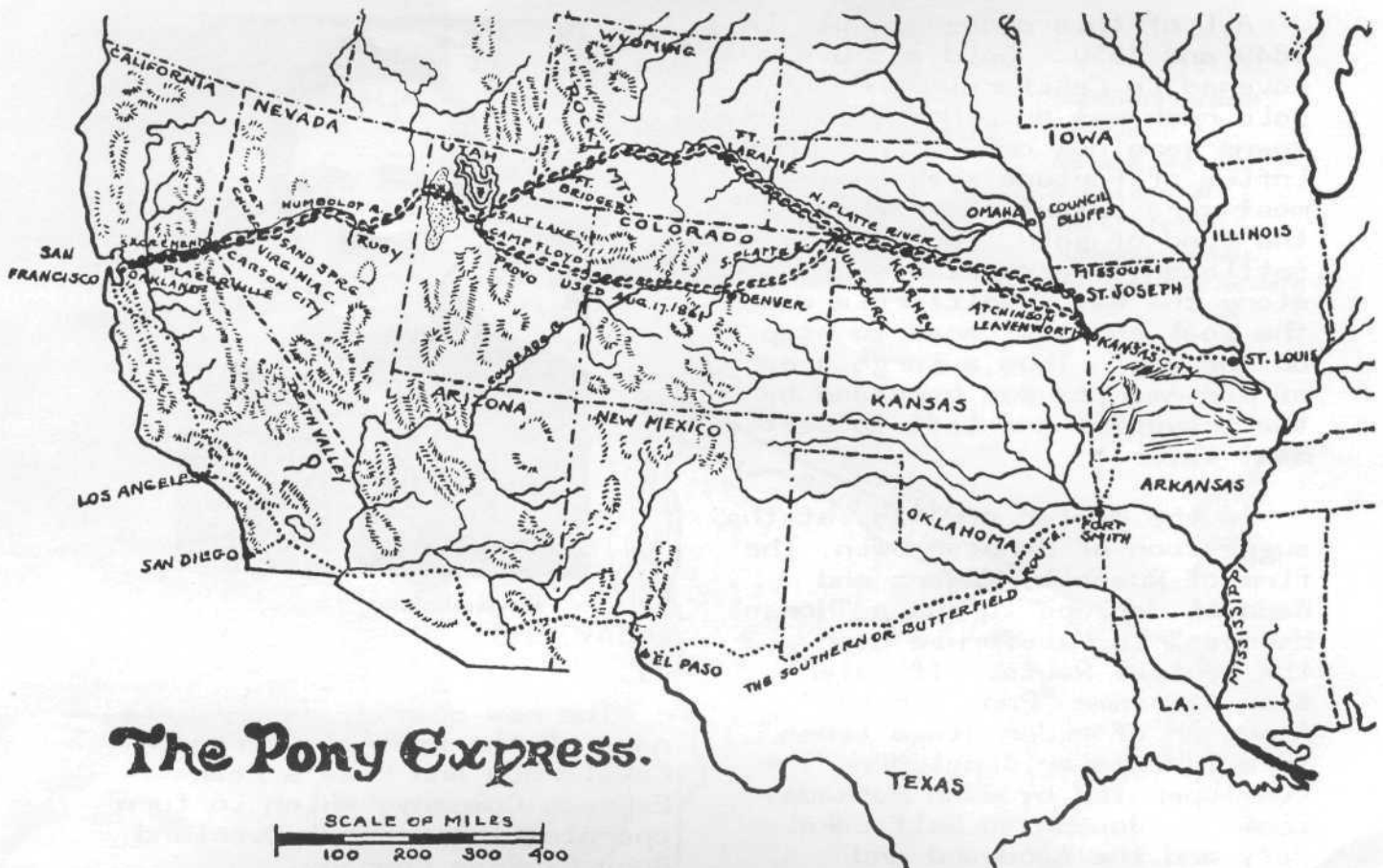
Senator William M. Gwin of California.

Butterfield people, his idea was not acted upon. Senator Gwin is also well known for his ownership of a rich gold mine in Calaveras County, near Camp Seco.

In February of 1860, the House Postal Committee advertised for proposals for carrying the Californian mails overland, contractors to select their own routes, but with letters required to be delivered within 20 days. Much consideration and debate was given to the carrying of the mails to the west during this period. In an article in the ALTA CALIFORNIAN dated March 23, 1860, the Overland Mail Question is discussed at length. On the following page is the text of that article.



"It is generally believed here that the present session of Congress will entirely recognize the present California mail contracts. It is believed that the present Isthmus mails will be abolished, and the whole service be transferred to the overland routes. Reliable information comes to us from Washington that the most probable change will be to direct the Butterfield Company to start henceforth from New Orleans, via Little Rock and Fort Smith, Arkansas, El Paso or else by Galveston or San Antonio, Texas, to San Francisco, by the Southern Route, and establish another route from St. Louis to St. Joseph, Pike's Peak, Salt Lake, Carson Valley and Placerville. Each of these mails to be tri-weekly, alternating so as to form a daily service, carrying the whole mail matter. It is estimated that the saving to Uncle Sam by the adoption of these routes, will equal nearly a half a million dollars. This plan has another recommendation that will go far towards making it successful. It compromised the objections of the extreme men of both sections, each party getting a route on equal basis. There is however, a third party at Washington which looks to an increase of the semi-weekly service of the Butterfield Company to a daily, and altering the terms of the contract so as to allow the contractors to select their own route. It is understood that Mr. Butterfield is now in Washington working to that end, with expectations of success, the compensation to be increased to one million per annum. The announcement of Russell, Majors & Co., the well known contractors on the Salt Lake route, that they intend, in April, to start a horse express to Placerville, via Great Salt Lake, has caused a fluttering among the friends of the Butterfield route. It appears the scheme originated with Mr. Butterfield himself, in this city, about three months ago. At that time Charles M. Stebbins and the Great Overland Mail Chief were in consultation on the subject of a regular horse express to California running from the terminus of the telegraph line on this end to the commencement of the Street line on the other, in ten days carrying important dispatches and packages, at the rate of about \$50 per pound, and news dispatches for the press at a high figure. They estimated upon the expense of the enterprise and were resolved upon its execution, but it was deemed advisable first to extend the telegraph line about fifty miles beyond its present limit. The proprietor backed out, and when Stebbins, a month later since, went to Washington to arrange matters he was surprised by the news that Russell, Majors & Co., contemplated a 'horse express' upon the same basis, carrying valuable packages, by the Pike's Peak and Salt Lake route, which they calculated to run in ten days, or two days less than the lowest calculation of the Butterfield Company. The latter have since changed their plan somewhat, and from all that can be gleaned here Stebbins and the Telegraph Company have withdrawn from the undertaking; but Mr. Butterfield is not so easily discouraged. According to the popular statement, he goes so far as to swear that Russell, Majors & Co. shall not carry off the laurels heretofore gained by quick time on the El Paso route. It is hard to decide in advance which will win. Butterfield's rivals are rich, able and energetic people, plenty of cash, plenty of stock, and ample credit along the route, to defy competition. They are playing a bold game for a fat contract to carry a tri-weekly mail to Placerville, and are not the set of persons to give up without a sharp contest. If their horse express enterprise is successful, the contract is sure; if the Southern route is proved the quickest, then they lose it. But Butterfield understands all this, and will do all in his power to prevent success in the first case and defeat in the last."



The firm of Russell, Majors, & Wadell was engaged in high freighting businesses and employed over 7,000 men, owned 6,000 freight wagons, and 75,000 head of oxen. In 1858, they transported Johnston's army to Salt Lake City to suppress the threatened uprising of the Mormons. Thus, they had proven their reliability in dealing with government business. Thereafter, much of their business consisted of hauling freight to the various government military posts.

St. Joseph, Missouri and Leavenworth, Kansas were the outposts of civilization in this time. The Missouri River was a major freight and passenger transportation route. Council Bluffs and Omaha were the heads of navigation. Business life was active along the river, with the towns on its banks being the outfitting points for the regions beyond. At Kansas City, Leavenworth, Nebraska City, and Omaha thriving cities arose, servicing many thousands of freight wagons and westward bound colonists.

All of this changed a bit in 1849 and 1850. Gold was discovered in California and the gold rush was on. Normally busy towns were now crowded with the influx of fortune seekers. As most were intent on reaching the land of gold, very few settlements were established along the way. California was the goal and who cares to stop on the way. Thus a large area of mid-America was bypassed by the travelers and left to settlement later.

In the Winter of 1859, at the suggestion of Senator Gwin, the firm of Russell, Majors and Waddell decided to run a "Horse Express" to California over the Central Route. It later took the name "Pony Express". A number of older stage lines were taken over, including the line operated by John Hockaday from St. Joseph to Salt Lake City and the Woodward and Chorpensing line from Salt Lake City to Sacramento. (more on this line will appear in a future issue).



Alexander Majors

The new company assumed the name of the Central Overland California and Pike's Peak Express Company, which in turn operated the Central Overland Pony Express Company.

The promise to run a Pony Express was made at Washington, D.C. by William H. Russell, who later placed the idea before his partners, Alexander Majors and Waddell. They objected, saying that it would not pay the cost of its operation. Senator Gwin then assured them that the Federal Government would reimburse them for any losses incurred in the operation of the Express.

During the winter of 1859 to 1860, stations were established at convenient distances of from 12 to 15 miles apart. Horses and supplies were acquired and distributed along the route, which ran west from St. Joseph to Fort Kearney, up the Platte to Julesburg, where it crossed the river,

Continued on Page 29

OVERLAND MAIL COMPANY,
VIA LOS ANGELES.
NOTICE.

ON AND AFTER
the first day of July, 1859,
the Coaches of the Overland
Mail Company will leave the office, corner of Washington
and Kearny streets, (Plaza,) as follows:

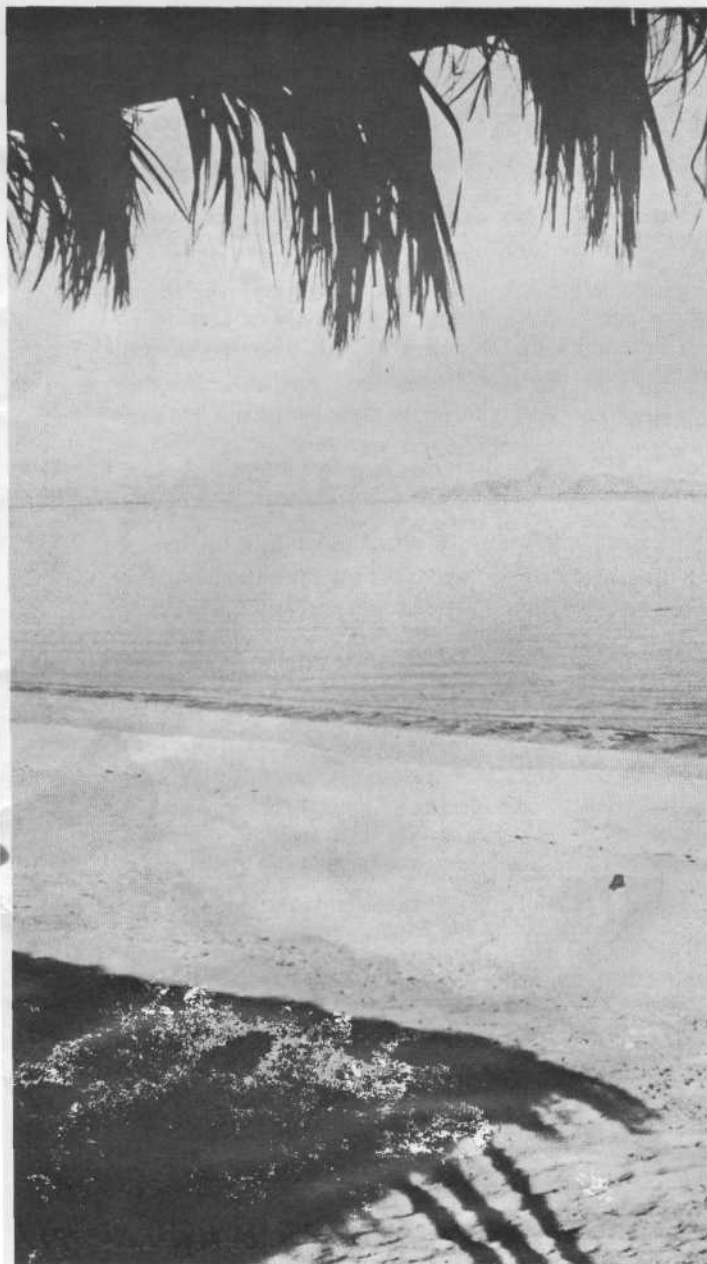
THROUGH MAIL,
TO ST. LOUIS AND MEMPHIS,
.....VIA.....
LOS ANGELES & INTERMEDIATE STATIONS,
MONDAY and FRIDAY AT 12 M.
FARE—From San Francisco to Fort Smith, Ark., or to ter
minus of Pacific Railroad,
One Hundred and Fifty Dollars.
WM. BUCKLEY,
Superintendent.

175-17

An Advertisement of Early Stage Run by the Overland Mail Co. Over the Southern Route.

BAJA'S ENCHANTED ISLANDS

by Piet Van de Mark



MEXICO'S LONG peninsula called Baja California has lured me to her mountains, deserts and shores many times. The vacation my wife and I took along the Gulf Coast about 200 miles below the border was one of the most relaxing times I have spent in Baja.

I had camped in Bahia Ambrosia several times before, but always gone on south in the morning, past the chain of six small islands stretching 40 miles down to Punta Final where the road bends west. This time I wanted to explore these islands in a leisurely fashion. We had brought along a wide-beam 14-foot aluminum skiff with an 18-horsepower outboard to do just that.

Packing and planning for a trip into Baja takes time, even though you have been there many times before. The reason for this is obvious: once south of the tourist areas near the border, you are on your own. The further you venture into Baja, the more important it becomes that you are well prepared. This is not the place for a discussion on camping in Baja. It is basically like wilderness camping anywhere else; just be extra sure your gear is complete and in good order. I find a checklist very helpful when packing.

We crossed the border at Mexicali in the morning, getting our tourist cards and Mexican auto insurance at the line. Unlike mainland Mexico, car permits are not required for Baja and clearing customs requires only minutes.

I generally stop in San Felipe, at the end of the pavement 125 miles below



Mexicali, to buy last minute supplies and have a final civilized meal at Arnold's Del Mar Cafe. Arnold Hellin is a good man to know in San Felipe. If you need a place to stay, gas, water, cold beer, or pandulce—that delicious Mexican pastry, Arnold will steer you in the right direction. He will also have the latest information on road conditions and an educated guess about the weather.

Below San Felipe are 50 miles of graded road to Puertecitos, a collection of 130 trailers and houses built by Americans who want to get away from it all, but like the security of the colony. There is a bar and cafe here. Gas and water can usually be purchased, but do not count on it.

Puertecitos is the end of the good graded road. With just 17 miles to go, you may think you are almost at Bahia Ambrosia, however, if you are new to this sort of driving, this will prove to be the hairiest 17 miles you have ever driven. The first time over it will take several hours, including some well-deserved sightseeing, but after the initial panic wears off you will drive it in about two hours.

You will need a pickup, carryall or Jeep in good mechanical order to handle the road with security. We brought our skiff atop the specially constructed camper for good reason: boat ramps are nonexistent below Puertecitos, and the road is not suited to trailer-pulling. Besides, the skiff is easy for two people to handle and well suited to the job ahead.

If you have ever dreamed of having an eight-mile wide bay of shimmering blue water all to yourself, you have found your dream at Bahia Ambrosia. At night, when the moon rises out of the bay, you will lie in your bedroll and marvel at the countless stars the smog has hidden so well. Not a night will pass without the wierd howl of coyotes in the hills beyond the firelight.

The sunrise over the Gulf of California is short and almost always spectacular, a beautiful way to start the day. If you enjoy photography as much as I do, you are in your element here. I am usually up with the first light, staggering around in the pre-dawn glow, tripping over rocks, and trying to get my mind in gear so that when I finally get to the right place at the right time, I can take advantage of the situation and create at least one of



Baja California's beaches are uncrowded, clean and washed by clear blue water.

those memorable once-in-a-lifetime sunrise photos.

Just at dawn the bay is so still that you will hear the porpoises playing offshore. That is quite a view over your morning coffee. But the distant view of the islands is even more exciting.

In a light skiff this island tour can be made in one day, though you will have little time for sightseeing. So, if you have room in your boat, and think you might want to stay out for several days, chuck in a bedroll and some extra chow. So, we loaded that and extra gas, water, life-jackets, parts and tool kit, tackle, cameras and set forth across the glassy bay.

Around the south end of Bahia Ambrosia lies Isla Huerfanito. Little Orphan Island is all alone less than a mile from shore. Though outcast from the other islands, Huerfanito is not lacking for company. Her sheer rocky coastline is home for countless thousands of sea birds. Pelicans, gulls, terns, cormorants, and the stately black frigate bird all make their home there.

The second island, five miles south and perhaps three miles offshore, has a fright-

ening name: El Muerto, The Dead Man. How this came to be is a matter for speculation. If you have an active imagination, you might pass between El Muerto and shore and see the form of a corpse, lying on its back, head to the south, arms folded across his chest. Local fishermen will tell you that the pre-Spanish Indians buried their dead on these islands. Who knows? It remains one of Baja's many mysteries.

El Muerto has several small coves with sandy beaches on the west side. Any one would make a good campsite, with good protection from the wind and ample wood for fire. As we sailed into one of these coves, the little bay was like glass compared to the light chop of the open water. The remains of a huge fish had been washed up on the beach. We discovered it was a shark, once perhaps 20 feet long. The jaws were about 30 inches across and filled with rows of serrated teeth; the longest measured 2-3/8 inches.

We fished briefly from the island, catching cabrilla, striped pargo, and even the ever-present trigger fish. You must get used to the idea of throwing fish



back since you will generally be able to catch hundreds every day. It adds a bit of sport and makes the release faster and more humane if you bend over the hook's barb with your pliers.

Unlike Huerfanito, El Muerto has vegetation and soil similar to that found on the peninsula's shore. Cardon, something like the giant saguaro cactus of the American Southwest, cholla, and ocotillo can be seen. Wildlife is limited land birds and reptiles, including, it is reported, rattlesnakes. Sea birds are found along the cliffs over the water and ospreys perch among the highest crags.

Isla Coloradito lies another three miles to the south. Colorado, also the name of the river that flows into the northern tip of the gulf, means reddish in color. This little red island is well named. Like Huerfanito, Coloradito is just a huge rock with no beach. However this trip we found another deterrent to landing—the island was completely surrounded by sea lions.

As we approached, they came out to greet us, or, more precisely, to make sure we knew our place—in the boat. They

swam about the skiff barking and playing, occasionally brushing against the bottom, but never coming near the prop. Sea lions are not the most cooperative photo subjects. It is difficult to get close enough to them on the water to get a clear result, especially from the low angle of a small skiff. When a boat approaches shore, they all dive in. The most successful method is to climb above them with a telephoto. They will soon relax, and permit extraordinary pictures to be taken.

Four miles below Coloradito is Isla Cholludo, which abounds with birds and wonderful rock fishing from the little bass, or *cabrilla*, up to the giant grouper. There are many small rocks scattered throughout this area that are alternately covered and exposed with the tide. Though fishing is good around them, even a light skiff can run aground or damage a prop unless a watchful eye is maintained. By this time, you may want to get out and stretch your legs; the place to do so is four miles south and is the largest island in the chain.

Isla San Luis, also called Salvatierra on some charts, is about three miles long.

Yuma Ferryboat, Continued from Page 15

provisions was saved. Everything that had arrived in a wagon train from San Diego the day before went up in smoke.

As if the fire were not enough the post was rocked by a severe earthquake on November 29 and on December 1 the ground was still shaking so badly as to interfere with letter writing. The temblor so frightened the garrison that sentries ran from their posts and huddled on the parade ground. Gigantic cracks opened in the ground, the river behaved in a mad fashion and far to the south a large column of smoke and steam arose. Large fragments slid down from Chimney Rock and the express rider en route to the post from San Diego reported that his mule had trouble keeping on its feet.

Great was the rejoicing in camp on December 3 when the steamer "Uncle Sam," the first steamer to navigate the river to Fort Yuma arrived with about 20 tons of commissary stores from the schooner "Capacity" then lying downstream some 120 miles. The "Uncle Sam" was only 65 feet long and some 10 or 12 feet wide. This ship sank in June, 1853, at Ankrim's Ferry while being cleaned for the installation of a new engine.

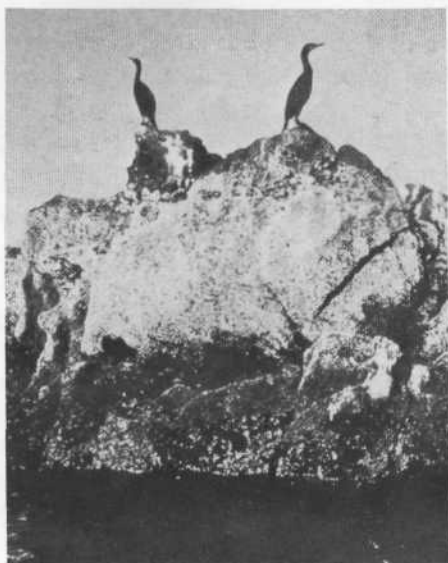
After the fire a more substantial Fort Yuma rose from the ashes. Adobe buildings were begun but work proceeded slowly. Orders for new barracks were issued but countermanded and it wasn't until late in 1854 that 35 wagons drawn by 90 mules with a force of 35 carpenters and masons set out from San Diego to build the post under the supervision of D. B. Kurtz. By June, 1855, work was well under way continuing at a brisk rate well into the year despite the heat, the weather being rated as cool in October of that year with the thermometer not over 100 in the shade.

The heat at Fort Yuma was proverbial. The three most wide spread stories concerning it were that a dog once ran across the parade ground on three legs, yelping at every jump, the

ground being so hot that it burned his feet. The hens at Yuma laid hard boiled eggs. (Eggs did fry up in the heat which gave rise to this yarn.) Then there was the tale of the old soldier who died at Fort Yuma and went to hell. He returned to the post the next night to get his blankets! However Dr. Elliott Coues who spent some time at Ft. Yuma in 1856 maintained he had been hotter in Washington, D. C., Quebec, Canada, and New York City than he had been at Yuma. On the afternoon of June 16, 1859 the thermometer registered 119 degrees, the hottest in nine years.

At the outbreak of the Civil war soldiers of the 6th and 4th Infantry were stationed at Yuma. By this time the post was fairly substantial. Water was no longer hauled in a cart from the river. The buildings were of adobe plastered inside and out. There were about 23 structures surrounding the flat barren parade ground "where not one single blade of grass, or vine or tree worthy of the name is seen . . ." Redoubts, semi-circular outposts composed of earthen embankments lined with willow fascines, where barbette guns were mounted were constructed in October and November of 1861. These were finished by Company I, 1st California Volunteers, and the lunette to the east which guarded the ferry was called "Ft. Butte."

Like all frontier posts, once the menace of Indian ambush was lifted from the trails the soldiers guarded, the forts ceased to have a legitimate reason for their military existence. Fort Yuma was no exception. On July 17, 1884, the acting secretary of war advised President Chester A. Arthur that Fort Yuma no longer was necessary as a military reservation. Accordingly on July 22, 1884, the President transferred Fort Yuma to the department of the interior and General Order No. 80 issued on July 28 officially informed the army that the post ceased to exist. On March 5, 1892, Fort Yuma became a part of the Yuma Indian reservation.



Cormorants perch on a rock before diving for fish into the clear waters of the Gulf of California. Right, another fisherman baits his hook. All varieties of fish are plentiful along the Baja coast.



Like the other islands off the Baja coast, it is of volcanic origin. The semi-circular rim of about a third of the original crater rises to 729 feet at the southeast end of the island. A tiny lagoon, its outer edges formed by sand bars, is located west of the crater. At low tide one can dig up a delicious clam dinner in short order. The bars that form the lagoon merge and stretch off to the west toward Bahia de San Luis Gonzaga on the mainland where two small tourist fish-camps are located. This bar is exposed for more than a mile at low spring tides.

Another bar, said to be dry at times, connects Isla San Luis with its neighbor a mile to the east, La Encantada. This Enchanted Island that gives the popular name to the entire chain, deserves its mysterious title. This island is a solid volcanic plug, or core, of greying basalt, rising abruptly from the sea to 478 feet.

If your first approach to La Encantada is under a cloudy and windblown day, as ours was, you, too, will feel a shiver run down your spine. At the northwest end, the cliff has fallen away to form an amphitheater as sheer and tall as a 30-story

skyscraper. Outlying rocks add to the unearthly image.

If you work your way around the island a few hundred yards south of the amphitheater, you will find two lava caves half exposed at low tide. They are perhaps 25 feet in diameter. If your boat is small and your spirit bold, you can paddle into the eerie darkness for about 200 feet until you reach a tiny wet, rocky beach. Tooth snails cluster along the waterline, and the large black murex crawl along the tawny sand bottom. An occasional bat flips by overhead, lending the traditional finishing touch to an already spooky situation.

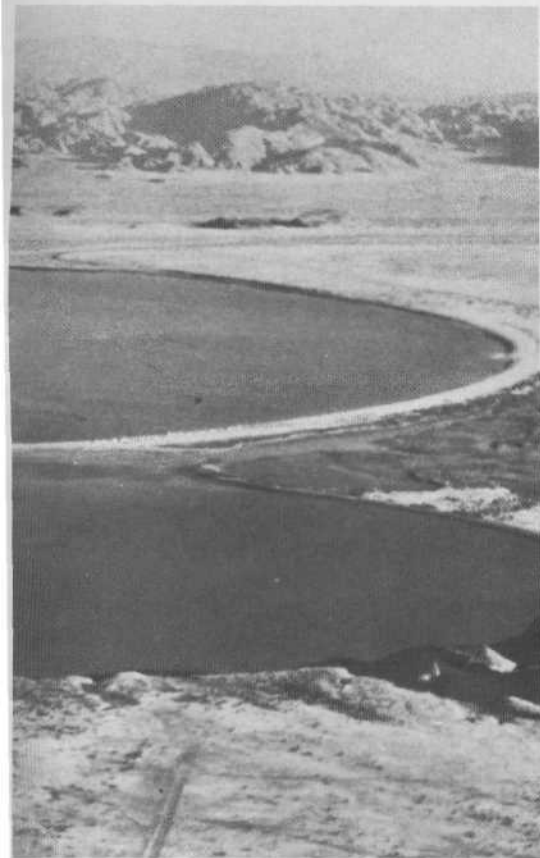
La Encantada is an ideal island to explore with a skiff, but if you enjoy a good hike, or care to camp, San Luis offers more comfortable quarters. The wide, shallow bay on the northwest offers the best camping. Should you leave your boat unattended make certain that you have the tide figured out and that the craft is well secured to something above high tide. Incidentally, a handy thing to have with you is the Tide Calendar available for \$1.00 from the Bureau of Mimeo-

graphing and Multilithing, University of Arizona, Tucson, Arizona 85721. You will find ample driftwood for cooking and a cheery fire on San Luis. The light volcanic pumice that covers the beach several feet deep above high tide can be used to fashion an effective shelter from the wind.

It has been suggested that these islands were first called enchanted by the natives of generations past because of the abundance of the weird floating rocks. After a storm, the pumice can be found all along the adjacent coastline of Baja.

One of the most inviting places where the pumice washes up is to be found about 13 miles south on Punta Final. About five miles west of the tip of the point in a crescent bay is the little resort called the Villa Mar y Sol. Clustered around a small lodge are a couple of cabins, a handful of trailers, a road eventually passing Bahia Ambrosia, and a very nice airstrip.

At this writing, the Villa Mar y Sol offers only very limited services and warm hospitality. Be sure to try the pompano

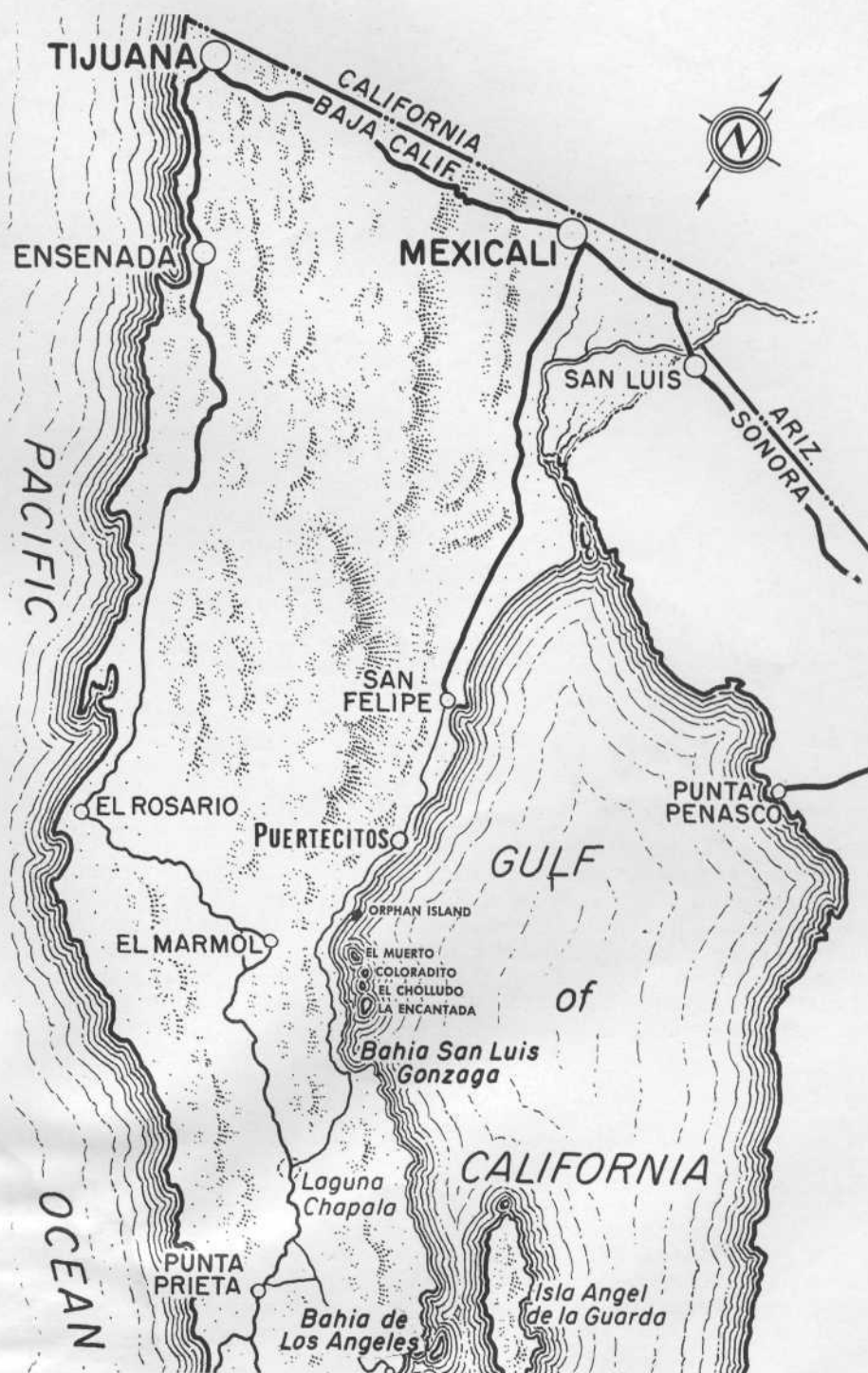


Inquisitive sea lions frolic on the rocks and swim around boats at Isla Coloradito. Although friendly, they keep their distance.

fishing from the shore right in front of the lodge. If they are running you will catch enough of these delicious little fighters in a matter of minutes to feed the entire camp. A silver spoon usually produces good results.

The shelling is good everywhere in the Sea of Cortez, but if you believe you have collected everything at Bahia Ambrosia just try the beach at Punta Final. You will be in for a surprise.

By the time you have sailed your way to the Villa Mar y Sol, you will have sampled the fruits of Baja and you should be thoroughly hooked. What probably appeals to you is the unspoiled virgin land, uncluttered by man's careless hand. Those of us who appreciate this are fortunate indeed, to have Baja California at our doorstep. I suppose this writing is slanted to appeal to those who share our feelings for Baja, to the fellow who will bury his beer cans and leave things as they were. For you, this brief journey among Las Islas Encantadas can be the beginning of a series of expeditions into the heart of the enchanted peninsula, Baja California. □



Late in the afternoon the pack mules, groaning under their loads of gold, came to a halt on the summit, and as the sound of the tinkling bell on the lead mule died away, the two men sat down to rest.



Don Joaquin and His Gold Mine

In a cave near Montezuma's Head in the Estrella mountains south of Phoenix, Arizona, lies a treasure of 50 bars of gold and 30 bags of gold nuggets, according to Indian tradition. John D. Mitchell here recounts the gruesome story of this treasure as told today among Pima and Maricopa Indians. It is the tale of a man whose love of his gold brought death to the only other person who knew of its secret hiding place, yet who himself died without benefiting from it or revealing his secret.

By JOHN D. MITCHELL
Illustration by John Hansen

DEEP in the heart of the Estrella mountains, south of Phoenix, Arizona, stands the tumble-down ruins of an old rock house. The walls are several feet thick and the loopholes around the top are mute evidence of the purpose

for which the house was built—to protect the occupants against Apache Indians. In the bottom of the wild rocky canyon nearby are the partly caved workings of an ancient gold mine.

There is a tradition among the Pima and

Maricopa Indians now living in the vicinity of the St. Catherine mission on the east side of the mountains, that their ancestors worked in the mine and that it belonged to an old Spaniard by the name of Don Joaquin Campoy, from Guadalajara, Mexico, and that he left a great treasure buried in a nearby cave.

According to the stories told by these Indians, the mine had been worked for a number of years, when in 1847 Indian scouts raced their ponies from village to village with the startling news that the American Army of the West was headed down the Gila river toward the Pima villages.

Rumor had it that these tall strangers had designs on the mines of the country and that honesty was not one of their characteristics. Becoming greatly alarmed at these wild and unfounded rumors, Don Joaquin decided to abandon his mine and flee to his beloved Guadalajara. He could return north again when the strangers had been driven from the country, and resume work at his mine in peace and safety.

After a sleepless night he made his plans to discharge the crew, start the Mexicans

on their way to Guadalajara, and the Indians back to their homes in the valley, then bury the treasure in some secret place in the mountains until he could return in safety for it.

In his possession were 50 bars of gold recovered from the ore taken from the vein, and 30 bags of gold nuggets from the placer operations in the canyon below where the rich vein outcropped. Who among his villainous crew of miners could be trusted to help him bury the gold and where should he hide it?

When the crew had been sent on their way, Don Joaquin chose an old Maricopa to help him load the 3,000 pounds of gold on the backs of 15 mules. When the last pack was in place and all was in readiness, the mules were headed up the steep trail toward Butterfly peak where they hoped to strike another trail leading down the high ridge past Montezuma's Head, which is near the south end of the range.

Late in the afternoon the pack mules, groaning under their loads of gold, came to a halt on the summit, and as the sound of the tinkling bell on the lead mule died away, the two men sat down to rest. Far below them to the west at the bottom of the deep box canyon, at the end of a zig-zag trail lay the old rock house and the mine workings. Below them to the east lay the green valley crossed by the Salt, Gila and Santa Cruz rivers that shown like silver threads in the setting sun. Far beyond the valley to the northeast the hoary head of the Four Peaks stood silent guard over the upland plains.

The little pack train made its way slowly down the winding trail toward Montezuma's Head and when about half way down turned off the trail to the west and entered a short box canyon. They presently came to a halt in front of a cave. After the treasure had been unloaded and packed into the cave, the old Indian silently dug a deep hole in the soft dirt and guano that had accumulated near the back end.

The sun had long since gone down behind the ragged edge of the western world and the canyon lay dark and shadowy ahead. This was to be the last resting place of the treasure. The hole completed, the heavy bars were dropped in first and then the leather bags of placer gold. When the last bag dropped with a thud the old Maricopa fell forward into the hole on top of the gold—struck dead by a club in the hands of Don Joaquin.

Hurriedly filling the hole with bat guano and dirt, the old man paused to view his work with grim satisfaction, and then, after marking the spot on a map that

he carried with him, headed the pack train down the trail past Montezuma's Head and out onto the flat country at the south end of the range.

Don Joaquin overtook the miners at the little butte that stands in the valley only a short distance southeast of the Estrellas where they had gone into camp for the night. As they sat around the campfire a feeling of confidence unmingled with remorse seemed to comfort the old man.

At sunrise the next morning Don Joaquin was found dead in his blankets. The body was laid to rest at the foot of the little butte and marked with a cairn of stones that may be seen there today.

Pima and Maricopa Indians claim that the map fell into the hands of one of the Mexican miners upon the death of Don Joaquin and that about 30 years after the signing of the Gadsden Treaty, this Mexican miner, then an old man, came north with the map in an effort to relocate the mine and treasure. Owing to the fact that the Apache Indians were then on the war path and the Maricopas and Pimas refused to lead him to it, he returned to Mexico without accomplishing his purpose.

Many people including the writer have seen the old rock house and the mine workings in the canyon below it. The vein is a true fissure cutting gneiss with a strike N. 30° east and dips 40° to the southeast. Some free gold was observed in the 18-inch vein at the top of the shaft. From all indications on the spot work must have been carried on over a long period of time both in the shaft and open cuts and in the placer operations in the canyon below the mine.

It is believed that some of the older Indians know the location of the cave, but because one of their tribesmen was killed there, refuse to go near it or direct any one else to it. However, they say that two young Indians, riding after cattle many years ago in the wild lands around the southern tip of the Estrellas, suddenly were overtaken by a storm and were forced to seek shelter in a nearby cave. The storm raged on and the wind howled down through the hills from the north.

The two cowboys decided to spend the night in the cave to protect themselves from the cold. About midnight the storm abated and they were startled by a rustling noise just outside the entrance and by a weird white light that suddenly appeared from the floor near the back of the cave. The noise outside ceased and the light disappeared as suddenly as it had come.

Two golden owls and their brood have taken up their abode in the old rock house

perched on the canyon wall near the mine and lizards sun themselves on the rock fence across the canyon below the mine. Time and erosion have dimmed the many crosses chiseled in the boulders that line the trail that leads from the mine to the valley below.

The Army of the West, after trading with the friendly Pimas, passed down the valley and over the hills. Don Joaquin in his lonely grave by the little butte sleeps on. The mine in the deep canyon at the end of the zig-zag trail is still unworked and the treasure lies undisturbed in the cave. So is the story of Don Joaquin and his gold mine told time and time again.

Water Witching
No Water . . . No Charge
Also, we Dowse
for Minerals and Oil

**CHARLES W.
SHAW**

(619) 262-2260

1205 46th St., San Diego, CA 92102

=====
CLASSIFIED ADS
=====

* * * * *

WESTERN & Latin Americana
Send \$1.00 for rare book
catalogue.

Jane Zwisohn
524 Solano Drive NE
Albuquerque, New Mex.
87108

* * * * *

MAGAZINES FOR SALE:
Desert, Treasure, Western
rare back issues for sale.
Send want list to:

Harold Moody
Box 803
Project City, Cal. 96079

* * * * *

Figtree John Was a Bluffer



he valley sun beat down with its ultraviolet rays on the 136 year-old head of Fig Tree John and his fat wife, probably his third of fourth, as they traveled the desert road by buckboard. Ahead of them lay the Indian village which is now the thriving city of Palm Springs.

John and his wife were dressed in their best for it was fiesta time. John wore an old blue army uniform with large brown buttons, a cast-off from some northern soldier during the Civil War. On his head, at a precarious angle, perched a tall, stove-pipe hat, his most highly prized possession. Leaning against the seat was the cane he affected as part of his "formal" costume and beside him sat his squaw, fat, sweaty, reeking of garlic and dressed in bright calico with a red bandana about her head.

This is a picture of Fig Tree John and his wife, both now gone to their Happy Hunting Ground.

One hundred and thirty-six years is a long, long time for a man to live, but Fig Tree John was that age when he died in 1927. Most of his life was lived in the vicinity of Palm Springs and he knew it when not a single white man lived there. He had acted as guide and scout for General Fremont; a fact which entitled him to more prestige than his fellow tribesmen.

His real name, as far as one can learn, was Juanita Rayon. When ending with an "a," a word such as his first name denotes the feminine gender, but John insisted it be spelled that way as that was the name bestowed upon him by his parents and it would be disrespectful to change it. His nickname, Fig Tree John, was bestowed upon him because he was the first man to plant fig trees in Coachella Valley and there were many about the rancharia near Salton Sea where he lived.

I recall seeing him once when the Indians held their annual pow-wow at the home of Mrs. Eliza Tibbetts, in Riverside. He sat at the end of a long table in her shady yard. The table was heaped with barbecued meat and delicacies enjoyed by the natives, but not even at the table would he remove his "topper." This was his emblem of dignity. When Mrs. Tibbetts said grace, he looked

straight ahead, never batting an eye. His features, in repose resembled the unbending texture of the granite rocks of the hills among which his life was spent.

His thoughts? Who can know?

Perhaps he thought of his past glories, when acting as scout and guide to the famous explorer, General Fremont. Again his mind may have reverted to the days when the Indian was lord of all the land west of the Rockies, long before the white man came. Mayhap he looked at the palefaces and thought, "We beat one off and always two more came to take his place."

In his attitude to the white man, he never unbent. His domain was vast, limited only by the distant horizon of mountains. Any infringement on what he considered Indian territory, he bitterly resented. The spring at his ranch was fenced. His friends were permitted the use of his blue, clear waters, but no

strangers. His word was law for many years.

But time passed. As members of his tribe learned the white man's ways, he withdrew even from tribal members. Fig Tree John's suspicions of the white man never were completely allayed. His dislike, however, did not prevent him from saving the life of a hereditary enemy. The man had made a trip into the desert in mid-summer and almost perished from heat and lack of water. Staggering into Fig Tree John's ranch more dead than alive, the Indian succored him and nursed him back to life. Usually, though, he resorted to threats of violence to keep the white man from his place, enforcing his commands with a show of a 44-49 Winchester. The gun was never loaded, but trespassers didn't know that.

In the deluge of 1905-7, when the Colorado River jumped its channel and formed the Salton Sea, Fig Tree John's original ranch was covered by the rising



waters. He then moved to Agua Dulce Springs. He could bluff the white man off his property but he couldn't stop the waters!

All Indians love to trade and John was no exception. He took keen delight in concluding a sharp horse trading deal and it was seldom anyone got the better of him. He could tell the approximate age of a horse by the way it walked or trotted. If he needed any further proof, he propped its mouth open with a short mesquite stick and examined its teeth. If its teeth were unworn and sound, it was probably a two-year-old, but beyond that, their molars began to show age by the manner in which they were worn down. You couldn't fool Fig Tree John.

If food were scarce, Fig Tree John traveled to the different settlers' homes and told them he needed food. Usually they divided their own meager supply with him. When he was flush with a few extra dollars, he went to a store and bought his produce, buying one article at a time and paying for it before deciding on the next. That way he figured he wasn't spending so much.

Fig Tree John spent much time in the Indian village which is now Palm Springs. He took part in the council of the Cahuilla and offered his advice, but that was before the white man had learned of the health-giving quality of desert waters and desert sunshine.

Tourists often asked to take Fig Tree John's picture—rigged out in his old army uniform, top hat and cane, but he didn't grant the favor without extracting a price. By this he maintained his dignity and his sense of not giving anything of himself for nothing.

He was not a "Bad Injun" as fictionists have pictured him, but he most certainly did hold resentment toward his white brothers—and perhaps he had reason. Other members of the tribe accepted the restraints imposed upon them with much complaint, but Fig Tree John was of a different caliber. He would not accept the fate dealt to his tribe. He wanted no change in his way of life. He feared only one thing—that the white man would run him from his home. Instead, flood waters did it.

Fig Tree John is gone, but his memory, like the fig trees he was the first to plant in the valley, lingers on—a colorful part of Coachella Valley's history. □

Pony Express Continued from Page 20

then to Fort Laramie and Fort Bridger to Salt Lake City, Placerville, Folsom, Sacramento, and then on to San Francisco by boat. St. Joseph became the official Eastern terminus and Sacramento the Western.

The mail was to be carried in four compartments of a mochilla, a covering made of heavy leather. The letters were to be securely wrapped in oiled silk, for protection from the weather. The mochilla was to be transferred from pony to pony and went through from St. Joseph to Sacramento and then to San Francisco by river boat. The pockets containing the mail were locked and opened only at military posts and at Salt Lake City, Carson City, Placerville, Sacramento, and San Francisco. Other points were later designated by the company.

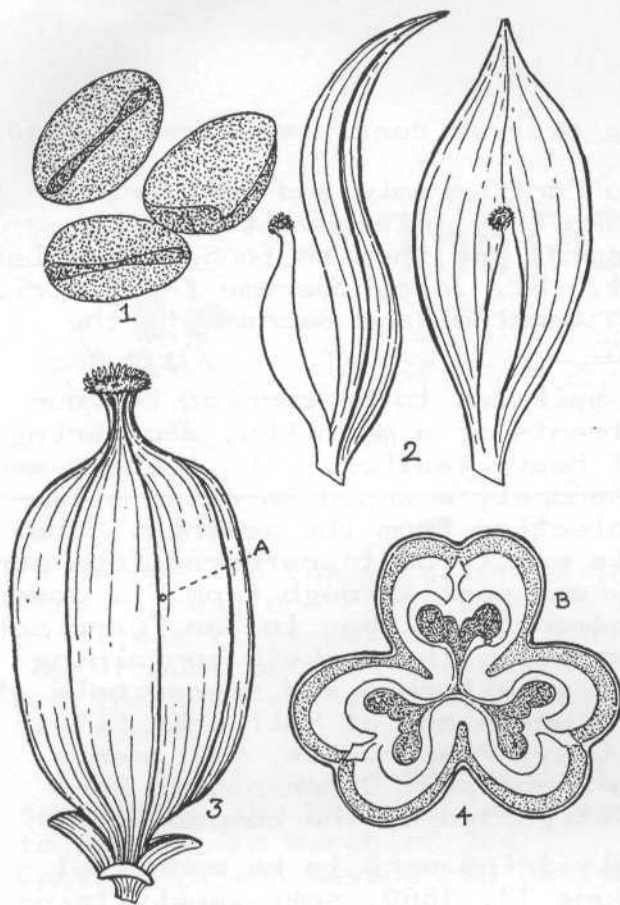
Weekly trips were to be made, but after June 13, 1860, semi-weekly trips were made.

The average weight of a Pony Express rider was One Hundred Twenty-Five pounds. They were usually dressed in a buckskin suit, high boots, and carried a sheath knife and Colt revolver for protection, although they generally depended on the speed of their ponies to keep them out or ahead of trouble.

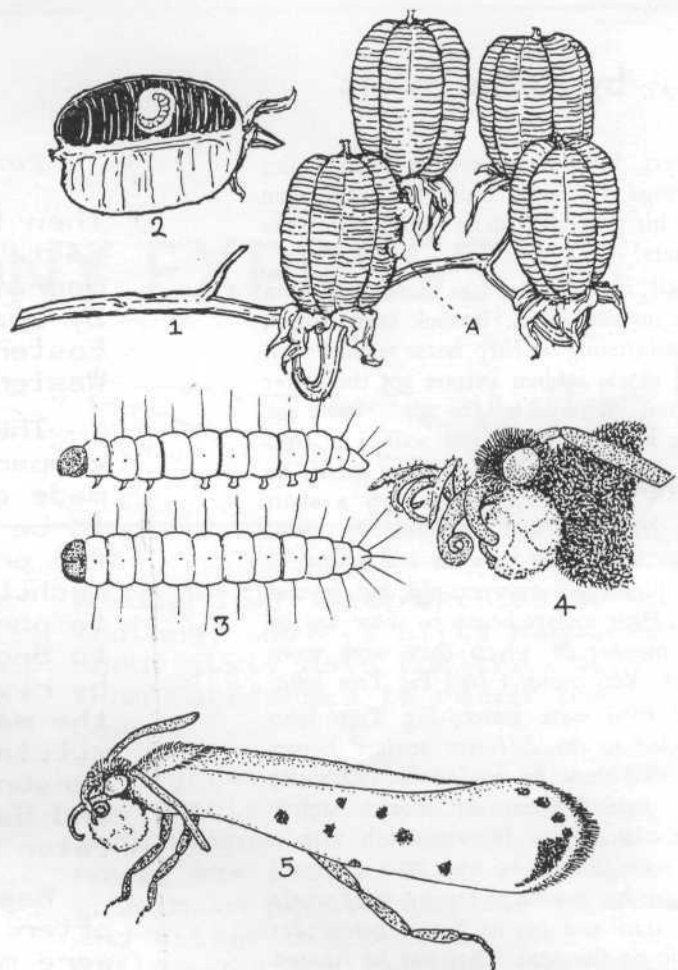
Every man, upon entering the employ of the Pony Express Company, was presented with a leather bound Bible and was required to sign the following pledge:

"I,, do hereby swear, before the Great and Living God, that during my engagement, and while I am am an employee of Russell, Majors & Waddell, I will, under no circumstances use profane language; that I will drink no intoxicating liquors; that I will not quarrel or fight with any other employee of the firm and that in every respect I will conduct myself honestly, be faithful to my duties, and so direct all my acts as to win the confidence of my employers. So help me God."

Continued in the June Issue



Essential parts of the yucca flower. 1—Pollen grains greatly enlarged. 2—Two views of pollen-bearing stamen. 3—Ovule with hole (A) made by ovipositor of yucca moth. 4—Cross-section of ovule showing place (B) where *Pronuba* deposits her egg. Drawn from fresh flower by J. D. Lauder milk.



Stages in *Pronuba*'s life. 1—Branch of ripe yucca pods with drops of gum (A) where grub has bored through wall. 2—Grub in its cell among the seeds. 3—Young grub. 4—Head of moth with ball of pollen. 5—Whole moth with pollen ball. Figs. 1, 2, 3 drawn by the author. 4, 5 redrawn after William Trelease.

Yucca Moth

... A DESERT ROMANCE

By J. D. LAUDERMILK

OLD PROSPECTORS tell tall tales about the "whinnydiddle," the "Arizona giant-ant" and the Wal-pai-tiger of forgotten canyons where radium in the rocks makes them shine like neon signs and brings on attacks of arthritis in the sleeper who is so foolhardy as to unroll his pack within range of their baleful influence. Perhaps there are such—the desert is big, wild and wonderful and anything is to be expected. But this story about the yucca and her moth is not only true but more fantastic than any yarn concocted of too much black coffee and desert solitude.

To get this story going, let's suppose you are an English person. Once through

a kind Providence you had been allowed to spend a season in the southwestern desert. You saw the yuccas bloom. You saw them in the full blaze of the noonday sun and against the purple sky at night. Naturally, you didn't ever want to leave the desert, but at length came the time when you had to go. In order to bring some of the desert home you took some yucca seed. You probably gathered those seed one day when a single swish of rain hung in the sky like a horse's tail and the desert seemed too good to be anything but some kind of gloriously fantastic dream.

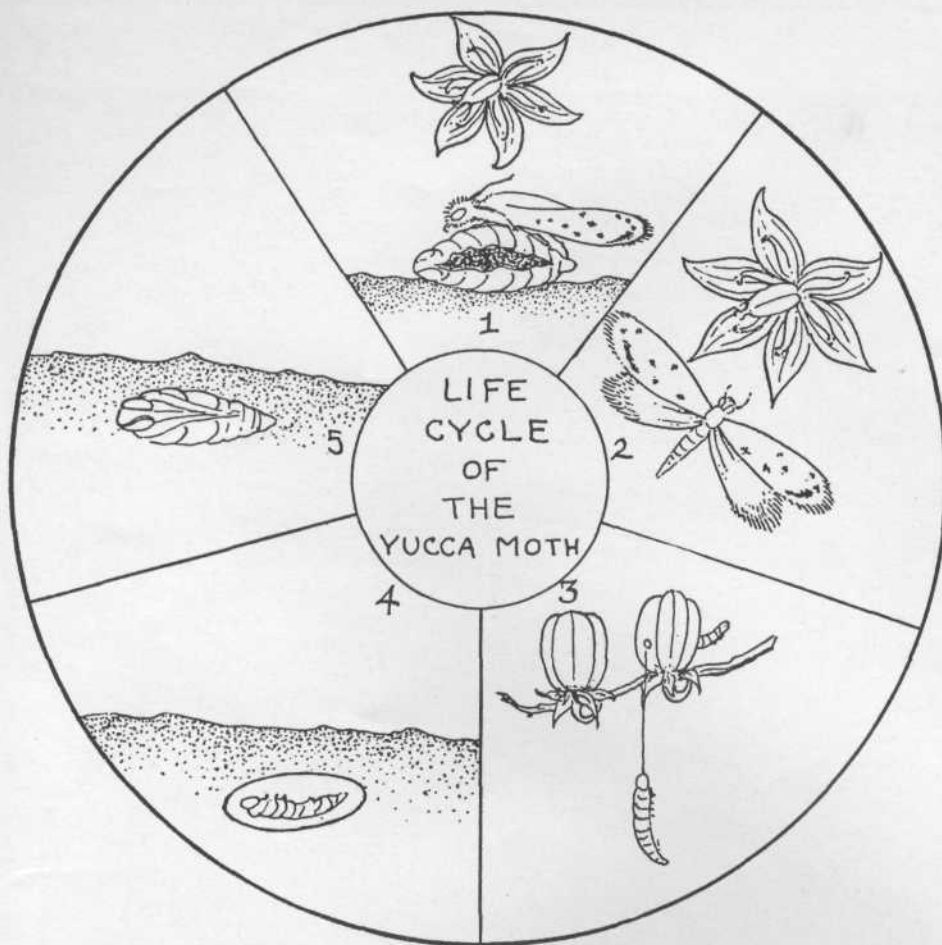
Finally, you got back to Cornwall or Devon and planted the seeds. You pampered them and they responded but it was

Yuccas don't "just bloom." If it were not for a tiny creature rarely seen by humans we wouldn't have any spires of Yucca blossoms in the spring. But for three million years a mutual benefit association between Yucca and *Pronuba* has assured the continued existence of both. Here is the story of the strange relationship between a flower and a moth—a life drama so mysterious and so compulsory—that we wonder, can a flower talk to a moth?

from seven to ten years before they shot up those giant stalks of asparagus which you knew would soon turn into grand, white spires of flowers.

You were much disappointed when seed gathering time came; there were no seeds, because there are no yucca moths in England. Although English seed catalogues list plenty of species of yucca, they list no yucca moths.

Pronuba is a clumsy name for such a tiny and interesting little lady in her white evening dress and with a romantic pair of black eyes that shine like microscopic jewels when you hold your flashlight in just the right position. Actually, you don't see her very often, but she and her sisters



Life cycle of the yucca moth. 1—Yucca flower opens and about the same time the moths emerge from the chrysalids. 2—The moths visit flowers to collect pollen and lay eggs. 3—When yucca pods are almost ripe the grubs bore their way through the walls and lower themselves to the ground. 4—The grubs dig in, spin cocoons and sleep until spring. 5—In late spring, just before or about the same time the yucca blossoms, the grubs change into the chrysalis form and the cycle is complete. Original drawing by J. D. Lauder milk.

drift in by the hundreds when the yuccas bloom. In the dusk of the late spring evening when those columns of fine white flowers look like rows of giant candles, *Pronuba* goes about some of the most important business of the desert—fixing things so that when later in the season the flowers fade, the yucca will set seed to make more yuccas and so on, in exactly the opposite of what an economist calls a "vicious circle." Here everything works to perfection; the moths need the yucca as much as the plant needs her.

Yuccas belong to the lily family, which is only another way of saying "tops" in the plant kingdom. They are not ancient plants in the geological sense. In fact, the earliest found so far are some fossils from the Tertiary deposits from the gulf states (roughly 3,000,000 years ago). Their flowers are highly specialized; cross-fertilization is the only method they will have a thing to do with. The yucca flower is so constructed that any old-fashioned system, which may have been perfectly all right back in the Jurassic (say, 9,000,000 year ago) is absolutely taboo. Now, some really ancient plants like the pines are so

designed that the wind carries pollen from flower to flower and gives fertility to the seed. This is a satisfactory method but very extravagant because of the amount of pollen wasted.

The yucca flower is rather curious; when it is mature the stamens (which produce the pollen) stand out and well away from the pistil, which leads into the ovule where seeds are formed. Not only is this so, but the pollen itself is surrounded by a kind of sticky gum so that it can be removed only with difficulty.

The great majority of flowering plants depend on insect guests to act as pollen carriers; in fact, they generally offer a bribe by furnishing free drinks and refreshments to the bees, flies, moths and butterflies who line up at the fountain, powder their noses with pollen and then drop in at the next stand and do exactly what the flowers want. It's a kind of joke flowers play on the bugs.

Well, a yucca is like most of the *angiosperms* (plants with inclosed seeds) in requiring an insect go-between, but in this case things are more complicated. No fancy spread of nectar is offered for the

yucca secretes very little and the insect she entertains, *Pronuba*, in all probability never takes a drink nor eats throughout her short gay lifetime. I refer to this dainty individual as *her* because, apparently, the males just loaf around and try to have a good time while the females go about making more moths and more yuccas.

Now obviously a flower can't talk to a moth—or can she? After all, scientists have to translate the recordings of their instruments into human values, and what do we know about the finer senses of either flowers or insects. In any case, there seems to be an understanding between the flower and the moth so that the insect knows that the welfare of her descendants is irrevocably tied up with that of the yucca; no moths, no yuccas.

Fertilization of the yucca flower goes like this: *Pronuba* first goes to a mature flower and climbs up a stamen. Here she collects some pollen. She works this up into a tiny ball which she tucks up under her chin. She visits several flowers, perhaps three or four. By this time the pollen ball is bigger than her head. Now she goes to another flower and opens up negotiations. Her operation here is that of laying her eggs. She begins by inserting her ovipositor, a long, thread-like apparatus with a sharp point, straight through the wall of the pistil, about a third of the way down from the top or stigma. She lays 20 or 30 eggs. Each egg is put directly into an ovule. After each egg is laid she carefully pulls out her ovipositor and climbs up to the stigma where she makes payment by ramming in some pollen grains. This insures that the flower which now has a consignment of eggs is going to be fertile and set seed. As the eggs hatch and the grubs grow, so does the yucca capsule. Since the grubs will eat only a few seeds in any case, the plant will have plenty left.

It takes only a week or 10 days for the eggs to hatch. Then the grubs begin to eat. By the time the pod is ripe they bore their way through the wall and fall to the ground. This probably takes place at night. Very likely, the grubs instead of falling, lower themselves by means of a strand of silk. Next, they dig themselves into the ground and spin cocoons made of silk and dirt; here they sleep until the following spring.

Just a few weeks before the yuccas bloom, the grubs change into the chrysalis form. Now this chrysalis, which is neither worm nor insect, digs its way to the surface of the ground. Right away, the moth inside cracks the shell of the chrysalis case and steps out into the sunshine a mature moth. Its wings are limp and wet but soon stiffen and with some kind of curious memory stored up with the entire complicated process, she is now ready to begin all over again the work her mother carried on before, in the same way and with the same accuracy.

Each species of yucca seems to have a



Freshly opened yucca flower. The large ovule is shown in the center surrounded by the petals. Each petal carries a stamen at the tip of which is the anther with its load of pollen. Photo by Dick Freeman.

different species of *Pronuba* for its partner. Since *Yucca whipplei* and *Pronuba maculata* were the only combination handy for this story, I concentrated on that aspect of this curious romance. At any rate, the same thing is true for all species of yucca from California to the Carolinas.

It seems only right that an account should be given of what happened to those pollen grains after *Pronuba* paid her bill at the yucca flower. When the moth pushed in those little bundles of biological dynamite, things began to happen right away. In response to the chemical composition of the fluid in the pistil (sugars probably) the pollen grains put out their tubes, microscopic filaments which forced their way directly through the tissues of the pistil. At length, this terrific adventure for such tiny and delicate organisms was complete. They came into contact with and penetrated the yucca cells which were to become the seeds. The action of the pollen was to fill this egg cell with encouragement, ambition, impetus. It began to grow and the result was a perfect seed ready to be scattered on the ground, to take root and grow and, after six or seven years, put out another set of flowers which would again connive with a new set of moths to do the whole mysteriously complicated business all over again.

The details of this case were pieced together by Dr. Charles V. Riley in 1892, and Dr. William Trelease in 1893. These men were both from the Missouri Botanical Garden at St. Louis. Their reports on the mysterious workings of the yucca moth make interesting reading. The entire picture may not even now be complete. Sometime, more evidence will be added to this romantic tale of the yucca and her insect partner.



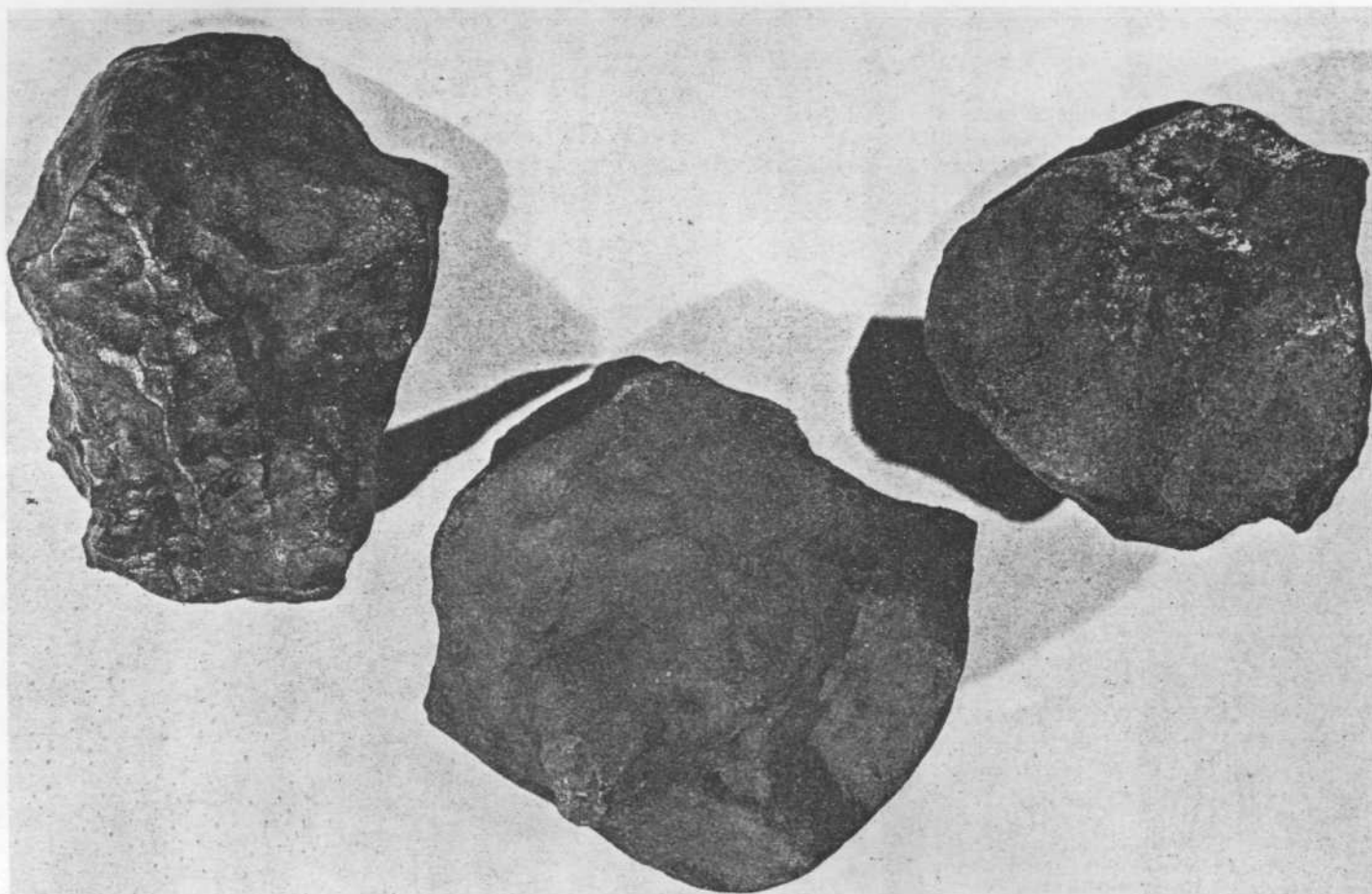
Dating from the 1870's, Hatheway's Frontier Shop is the oldest active commercial building in Julian. It is on the main street.

Desert visits Julian continued from Page 7

All tour participants were then treated to a demonstration of an operating 5 stamp mill. The mine owners were kind enough to fire the mill up and run some ore through the system.

At the conclusion of the tour, we departed for Julian. A few minutes later we arrived downtown. Time for a quick bite of food and some of that great Cherry Cider as you can only get there. Then on to the museum.

Julian is fortunate to have a small but comprehensive museum of its history. Admission is free, but donations are suggested. Be sure to save an hour or so for a visit to this museum. And if time permits, the town of Julian is well stocked with historical buildings, too numerous to name here. For more detailed reading on the town and its mining activities, we suggest a copy of "The Mines of Julian" by Helen Ellsberg, available from the Desert Magazine Bookstore for \$2.95 plus tax and postage or at the museum in Julian.



Three typical examples of stony meteorites, covered by a fusion crust and showing different degrees of pitting. Specimens, left to right, are from Ranson, Kansas 8 pounds, Harrisonville, Missouri 12 pounds, Holyoke, Colorado 12¼ pounds.

How to Recognize Meteorites

If you were out collecting mineral specimens on the side of a hill, and stumbled over a meteorite, would you recognize it? Probably not. Although the earth's crust is sprinkled with these rare prizes, few of them ever are brought in. Like many other rare stones, they have a very drab exterior and the average person on a field trip would not give them a second glance. The accompanying article by H. H. Nininger, one of the leading authorities on meteorites, is designed to help the rockhound in his quest for one of these stones from the sky.

By H. H. NININGER

METEORITES have been pelting the surface of the earth for millions of years. Many of them have been recognized and recovered, but I daresay literally millions of them still lie near the place where they fell. In most instances they appear to be ordinary stones and few people recognize them for what they are.

I have found meteorites in all kinds of places. More than once I have observed them being used as door stops by people who had not the slightest idea as to the character of the stone. I've seen them used as weights on the lids of pickle jars, pork barrels, milk crocks. More than one farmer has discovered that they made a good anvil, and I once saw one built into a garden

wall. In central Mexico I found the Xiquipilco Indians using meteorites as hammers to roughen the grinding surfaces of metates on which they ground their corn.

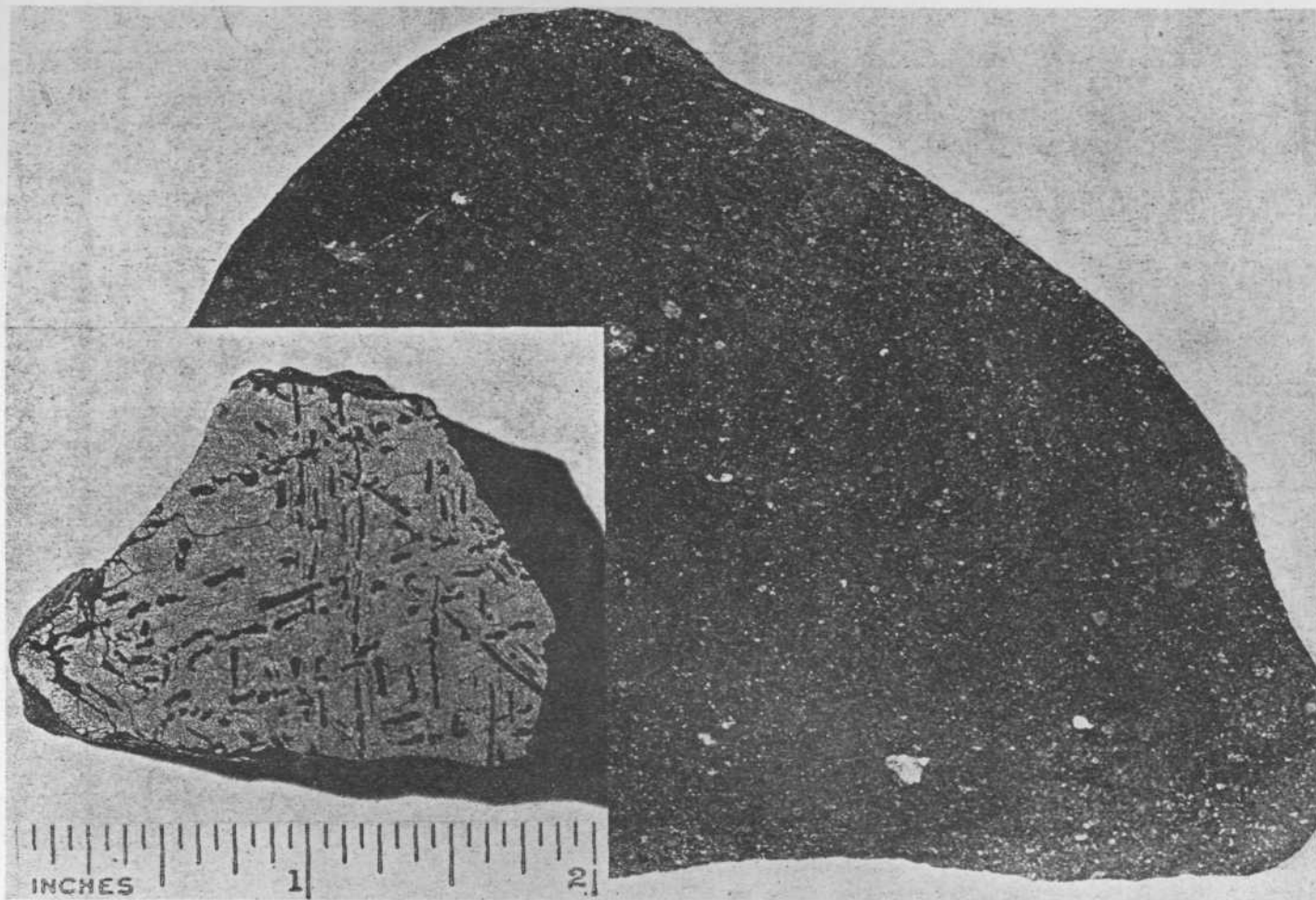
While it is seldom possible to identify a meteorite by looking at its drab exterior, with the same precision that a botanical specimen can be classified, still there are certain characteristics which if understood, will at least give the finder a clue.

Next time you are on a field trip, keep an eye open for "sky-stones" and here are some suggestions that will help you:

Distinguishing Features and Tests

KINDS. Meteorites are of two principal varieties, stony and nickel-iron. A stony meteorite consists mainly of rock material, but in most cases has numerous small grains of nickel-iron distributed all through it. The nickel-iron meteorites are almost solid nickel-iron or steel. These latter are about three times as heavy as ordinary rocks of the same size. The stony meteorites are about one and a half times as heavy as ordinary rocks of the same size. However, there are several kinds of terrestrial rocks or minerals which are quite as heavy, or even heavier, than the stony meteorites. Some of these are magnetite, hematite, limonite, pyrite, chalcopryrite, galena, and certain varieties of basaltic lava. These should not be confused with meteorites.

Another feature of all meteorites is the peculiar crust, covering their surfaces and known as the fusion crust, which has been formed by melting at the surface as they plunge through



Good specimen of stony meteorite (large photo). The white grains, large and small, are nickel-iron, embedded in a dark stony matrix. The rounded inclusions are chondrules. They are peculiar to meteorites. They are fragments of crystals of various minerals which appear to have been rounded by friction. This specimen is a slice of the Arapahoe, Colorado, meteorite. Inset—Etched slice of C. Diablo meteorite in which bars of dark Shreibersite (nickel-iron phosphide, found only in meteorites) are very prominent.

the atmosphere. When a large shooting-star blazes across the sky, leaving in its wake a train of fire, this train consists of a stream of sparks, which are molten bits or detached fragments of the meteorite, stripped off by the resisting air. This powerful resistance finally slows down the meteorite to a point where it ceases to burn. At this moment the mass is naturally covered with a layer of this molten or fused material which solidifies and becomes the hard black crust which one sees on freshly fallen meteorites.

Stony meteorites contain lumps of material which are harder to melt than the remainder of the mass. These metallic grains and other hard lumps give the stone an uneven surface. This unevenness shows under the fusion crust, making the meteorite appear much as a lump of concrete would look if it were given a coat of paint. Someone has likened the surface of a brown stony meteorite to the crust of cracked wheat bread. It is a very good comparison. I have found this peculiar crust the best mark by which to recognize meteorites.

There is a third group which is intermediate between the stony and the metallic; these are known as stony-iron or iron-stony meteorites. They consist of about equal portions of stony and metallic material. In these the nickel-iron may be arranged in a network of irregular bands or it may be in the form of more or less disconnected masses embedded in a stony matrix. These metallic constituents may be in the form of very small grains or in larger lumps like those in the one from Estherville, Iowa.

COLOR. Meteorites are dark in color. If lately fallen to the earth they are usually covered with a black crust, regardless of

the color of their interior. In the majority of cases the interior is gray and cement-like in appearance, but they are sometimes dark inside as well as outside.

After meteorites have lain on or in the soil for a few years the black crust is changed to a rusty brown color by the formation of iron rust (oxides of iron). Since meteorites do not fall frequently in any locality, it naturally follows that the majority of those to be found are of this brown color and not black as described above. It is therefore most important that you know how to recognize these old residents.

SHAPE. Meteorites vary greatly in shape. In fact, they are usually characterized by two peculiarities which help in their identification. First, they seldom have sharp corners or edges. This is because the extreme heat of friction while they are coming through the atmosphere flames off any sharp points or edges, leaving them dull and rounded, just as when a broken piece of ice is passed through a flame. Second, they are irregular in form and they seem always to present the appearance at first sight of an individual, isolated and complete in itself. Upon closer examination, however, they usually show evidence of having been broken from a larger mass and subsequently fused over. The accompanying illustrations give a fair idea as to the shapes of certain specimens. Occasionally a meteorite is definitely cone-shaped. This is due to its having traveled in a straight-forward position without turning over. The majority of meteorites, however, travel in a tumbling fashion and do not have a chance to be carved into a symmetrical form.

THUMB MARKS. In many meteorites there is another

characteristic which is quite useful for identification. We refer to the peculiar pittings or "thumb marks" which indent the surface of many. These pits are caused by the unequal melting of the substance of the meteorite, in combination with the violent air blast which drives off the molten material as fast as it is formed. The pits are shallow, with rounded edges. They are of various shapes and sizes but often appear like marks made by pressing the finger tips into plastic clay. After one becomes familiar with these markings, they may attract attention to specimens which would otherwise escape notice. It should be mentioned, however, that pittings which are very similar are often produced by running water, with its load of sand and gravel, and by a sand-blasting action of the wind in desert regions. A careful inspection will reveal that the fusion crust is absent from such specimens.

CHONDRULES. For the great majority of stony meteorites, chondrules are an important identification mark. These are rounded bodies of various sizes which differ from sand grains and from all other rock structures to some extent. They resemble oolitic structures more closely than any other feature of terrestrial rocks. Generally, chondrules are of many different sizes in the same stone. They may be so small as to require a lens to see them, or they may be several millimeters in diameter. A common size is about like a pin head. The color is usually white or gray but sometimes brown to black.

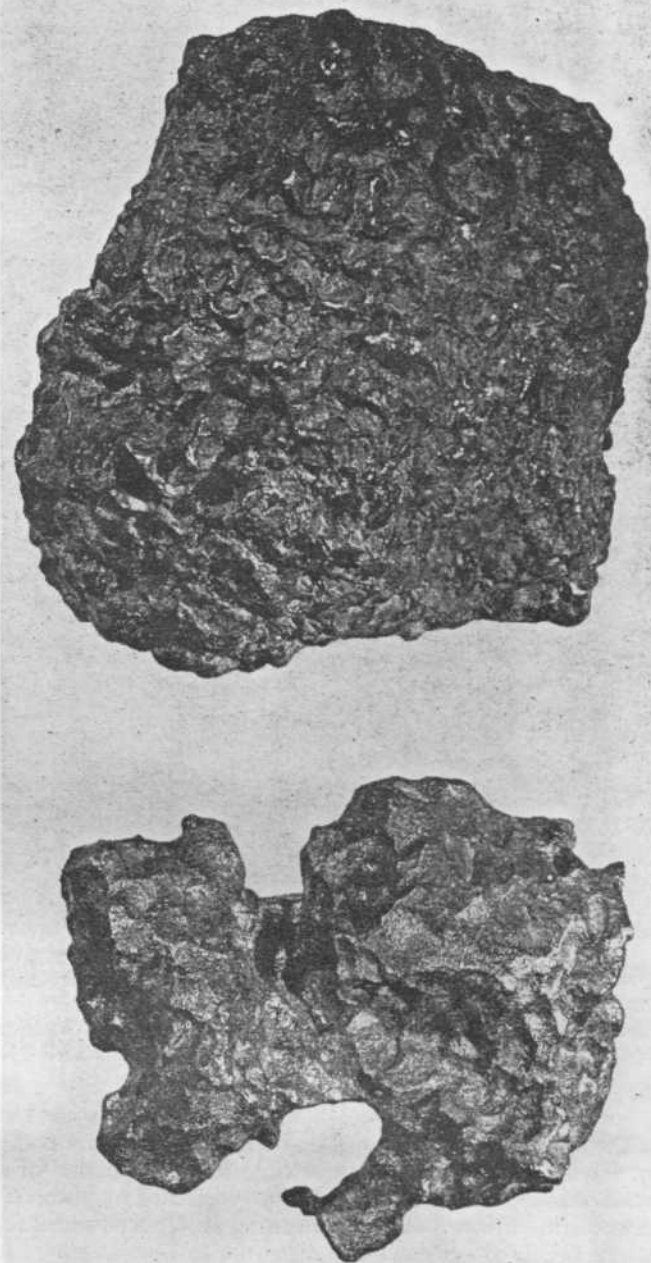
In some meteorites, such as Richardton, these chondrules are loosely embedded in a fragmental matrix so that on a broken surface they stand out conspicuously. In others, they break with the matrix, in which case it is often necessary to polish a small surface in order to see them. A 10-power hand lens is very useful in looking for small chondrules. While the great majority of known stony meteorites are chondritic there are several varieties which are not. Therefore, one cannot depend on this feature alone.

NICKEL TEST. Favorite test for meteorites is the search for nickel. In metallic meteorites, in the stony-iron forms, and in all of the chondritic meteorites so far examined, nickel is present. Also, it is present in some of the achondrites; but not in all of them. Nickel is always found where there is metallic iron. Take a sample and, if it is stony, crush it finely in a mortar. Boil in dilute nitric acid for about two minutes, cool, and add ammonium hydroxide to render it alkaline. Filter and treat the filtrate with a few drops of dimethylglyoxime. If nickel is present there will develop a bright pink color. This is a test which will reveal even a slight trace.

EMERY WHEEL TEST. This test may be applied to any heavy, dark-colored rock. Hold a corner of the stone against a revolving emery wheel, such as is used in auto repair shops; and when it is ground to a depth of a quarter inch, look for bright specks of a steel-white metal. If these are present, a sample of the specimen should be sent to a testing laboratory. Care should be taken to distinguish between true metallic grains and certain glittering crystals or flecks of minerals such as mica, pyrites, quartz, etc. Experience and a good 10-power lens will, as a rule, enable one to detect the difference, especially if care is taken to turn the specimen about and view it in light from different angles. Finally, if necessary, it is always possible to distinguish the metallic grains by prodding one with a sharp steel needle and observe under the lens whether it crumbles or is ductile. Nickel-iron is quite ductile and will not crumble.

The magnet is useful in distinguishing nickel iron from almost any of the minerals except magnetite. A small amount of the stone may be crushed, taking care not to use more than is necessary. The magnet will then pick out the metal if present. The nickel-iron grains may be readily distinguished from magnetite by placing them on an anvil and testing them for malleability by hammering. Unfortunately, this test will not distinguish nickel-iron from native iron which rarely is found in basalt, nor from furnace iron which is often found in slag.

There are, however, some meteorites in which neither the



Above—A much-pitted nickel-iron meteorite from Henbury, Australia.

Below—A pallasite or iron-stony meteorite composed of nickel-iron reticulum, the meshes of which are filled with olivine.

grinding test nor any other described would be sufficient, for some meteorites contain no metallic iron whatever. These usually also lack chondrules. In such cases the fusion crust is the best mark of identification. To recognize this, one must become thoroughly familiar with its appearance as it occurs on the various types of meteorites. In other words, it is a job for an expert in the study of these bodies. In fact, the beginner should never be satisfied with his own judgment on any specimen until it has been verified by a specialist, because once a mistake is made and not corrected it continues to be the cause of mistakes on the part of other persons who see the specimen. One great reason why there is so much ignorance concerning meteorites lies in the fact that throughout the land there have been several spurious or false meteorites on exhibition. Each such exhibit leads to the misinforming of thousands of persons.



Chronicle

Milestones, Magic, Myths, and Miscellaneous of the Great American Desert

TUCSON, ARIZONA

The City Council has been asked to approve a private fund raising effort to collect \$240,000 for restoration of a Steam Engine now rusting away in Himmel Park.

The group proposes to restore the steam locomotive to operating condition and use it on possible excursions to Phoenix, Bisbee and Nogales.

LOS ALAMOS, NEW MEXICO

Geothermal experts at Los Alamos National Laboratory have created the world's hottest and deepest hot-dry-rock geothermal reservoir 2 miles deep on the flanks of a dormant volcano, a spokesman says.

The reservoir, from which heat energy is extracted, lies in the Jemez Mountains near Los Alamos, 10,000 to 12,000 feet below the surface in hot granite. Although a research project, the reservoir initially generated 35 megawatts of thermal energy while venting steam and hot water to the surface.

This energy could provide electrical power for a community of 7,000 on a sustained basis.

John Whetten, the laboratory's program manager, said, "This is the largest underground hydraulic fracturing experiment ever achieved at such high pressures. The size of the reservoir exceeded our most optimistic expectations.

The reservoir was created in one of two deep well bores. Whetten said Monday that the next step is to connect the two wells to create a convective, closed-loop system.

To produce heat energy, researchers drilled two deep wells in hard, hot granite, then pumped cold water under pressure down one borehole. The pressurized water fractures the rock and creates a very large heat-exchange reservoir that heats the water before it is pumped back to the surface through the second hole.

Depending on the temperature, the hot water could be used to drive turbines for electricity, for food processing and other industrial uses or for direct space-heating.

HAWTHORNE, NEVADA

The Lucky Boy Mine is being prepared for reopening, after being closed down for almost four decades. The old silver and lead mine, dug deep into the foothills of the Wassuk Mountains is a few miles Southwest of Hawthorne.

The original length of the tunnel was 6,200 feet, and they are in 5,500 feet now. A small vein of ore which runs 100 ounces of silver per ton was found while clearing the tunnel, but the mine can do better than that. This mine produced silver ore that went over 2,000 ounces per ton in the past.

Do Ah Shon Goes to the Trading Post

By SANDY HASSELL

Pen sketch by Charles Keetsie Shirley
Navajo Artist

When Old Greedy strode into the trading post her bulk seemed to fill the place and there was a slight backing away of all the Indians in the store. Goldtooth the trader tightened his lips and lowered his eyebrows. He knew there was hard trading ahead. The rug that she had brought to trade was wrapped in a flour sack and carelessly thrown over her arm instead of being discreetly tucked under her shawl like any other Navajo woman would have carried it.

Her handclasps with all of her acquaintances were short. No one wanted to hold her hand long even if they hadn't seen her for months.

The Indians themselves had given her this name. None of them liked her for she had many bad points. She talked in a loud voice and nagged her husband, Hosteen Funmaker, until he would no longer help her when she was trading a rug. She wasn't careful with her skirts when she got on and off a horse. Oftentimes she had exposed her leg as far up as her knee. She had insisted on Hosteen building their last hogan too close to a water-hole that many other Indians in that district used. This caused lots of confusion. When they brought their flocks here to water every other day they often got mixed with Old Greedy's. Getting mixed wasn't so bad but when they were separated Old Greedy always wanted to claim a sheep that didn't belong to her. Anybody could tell she didn't own it, for all the other sheep in her flock would try to fight it. And what if someone should die in that hogan, and then abandon it? It certainly would be embarrassing watering their sheep that close to a Chinde hogan. And she had even been known to slap her little girl when she should have thrown water on her. Yes, Old Greedy was *do ah shon*.

After shaking hands a smoke was in order. She could get this out of the little box on the counter that had a hole in the top about the size of a dollar. With the aid of a teaspoon that hung on a string she could fish out the makings and a match. Gold-

tooth kept an eye on her for these spoons had a habit of disappearing everytime Old Greedy made a visit to the store.

After her smoke was finished she was ready to trade. All the Indians gave way for her when she laid her

rug on the counter. Before he unwrapped it Goldtooth knew to a dollar how much he was going to pay her for it.

There was very little difference in any rug she made. They were all about the same size and weave, and just over the borderline of being acceptable. If they had been any poorer Goldtooth wouldn't have bought them. The neighbors thought the worst part about her rugs was that she never bothered to change the designs in any of them.

Goldtooth placed the rug on the scales. The Indians liked to see their rugs weighed even if he didn't buy them by the pound. If he had bought this one by the pound he would have deducted a pound for the sand and clay, another one for the water—it was very damp—and a pound for the grease in the wool, for she never

The Indians called her "Old Greedy."



washed her wool clean. Her rugs were the poorest and dirtiest of any that his weavers made. She thought the heavier they were the more they would bring.

She looked to see how many pounds it weighed and then examined the scales carefully although she couldn't read and knew nothing about how the scales worked.

Goldtooth unwrapped the rug and spread it on the counter. He didn't even bother to measure it. "It is a nice rug, *Sumah*." He called all women who had children mother. He could offer an Indian as little as he wanted for a rug but he must never say that it was a poor one.

He made his customary offer and hoped that she would refuse it. He knew that he would be lucky if he could sell it to a tourist for that price. It would be half an hour or longer before Old Greedy would accept his offer so he gave his attention to other Indians who wanted to trade. One offer was all he ever made her for a rug. To add any more to that would be inviting trouble.

After the usual lapse of time the offer was accepted and the trading was on. Every article she bought she protested that he was charging her too much, even the five-cent spool of thread. When she bought the ten yards of cloth for a skirt she counted each yard on her fingers as it was stretched between the two yellow tacks on the counter. But what she didn't notice—or any other Indian, was that Goldtooth was deducting the width of four fingers from each yard of cloth as he measured it. She insisted that he give her an extra yard of cloth the same as he did all the other women, but his ears were closed.

Before her money was all spent she must buy some wool for another rug. Did Goldtooth have a sack that she could put it in? Yes he had two sacks but they both had holes in them. She could put the two together and they would hold wool very nicely.

Old Greedy never saved wool from her own sheep to make her rugs. She would rather sell it and buy wool from Goldtooth at the same price she received for hers. He always kept wool for weavers who had no sheep or those who had run short. In buying wool Old Greedy insisted on spreading it on the floor and picking the best. Each handful was thoroughly shaken so there would be no sand in it. Of course she had to pack the wool in the sack as tightly as possible. Everybody knew that the smaller space it took up the less it would weigh.

The room where the wool was kept adjoined the store. She was told to go

in and fill her sack. Ah, she was in luck again for there were stacks of five pound sugar sacks on a shelf by the wool bin and on a shelf above were some small bags of salt. The last five times that she had bought wool there had been sacks of sugar there and each time she had put one in with her wool. The last two times she had added a small bag of salt. The first sack of sugar she took she thought Goldtooth was going to catch her for he had poked his finger into the wool sack where the sugar was, but he didn't say anything. This source had kept her family well supplied with sugar for she could get a sack each time she bought wool. Sometimes she bought wool when she didn't need it just to get the sugar.

The sack was filled and carried out for Goldtooth to weigh. He always complained about the dirt she left on the floor but when he weighed her wool he was always nice. She was pleasant also and tried not to complain about the price that he charged for wool.

The wool was placed on the scales and a couple of big bars of yellow soap were put on top. Yes he was go-

ing to give her these for he wanted the wool washed good and clean in the next rug she made. She liked this for he never gave any of the other weavers but one bar of soap.

Goldtooth was very slow about weighing the wool and she was getting nervous. "Yes, *Sumah*, it weighs just 20 pounds"—this included two gunny sacks, two bars of soap, a five pound sack of sugar and a small bag of salt—"and at 20 cents a pound that makes just four dollars. That is what I pay for wool and that is what I sell it for to you. You know if I charge more than what I pay for it that would be cheating." To prove that he was telling the truth about what it weighed and his multiplying was correct he had her daughter Nettie read the scales and look at the figures that he had put down on a paper sack.

After all Goldtooth wasn't such a stingy trader even if he hadn't given her an extra yard of cloth. Hadn't he given her two bars of soap and let her get away with a sack of sugar and a bag of salt? "Yes, my son, that is right. I am glad to know that there is another honest person around here beside myself."

Hard Rock Shorty

of Death Valley



"Naw, there ain't no orchards around Death Valley," Hard Rock Shorty was explaining to the motorists who had just stopped at the Inferno store to "get some fresh fruit."

"Ain't water enough in Death Valley tu grow fruit. An it spoils comin' in on the freight wagon—so we jest eat prunes, dried prunes from over th' other side o' the mountains. Got lots o' prunes if you want 'em."

But the visitors did not want prunes. They were from the East they said, and they had been told that you could always get fresh fruit in California.

One of the women in the party was quite insistent that she must have some California oranges.

"They jest ain't here," Shorty finally exclaimed in exasperation.

"We tried growin' 'em once—that is Pisgah Bill did.

"Got the idea he could graft orange buds on them ironwood trees that grow up in the wash. So he took a correspondence course in fruit graftin' an' then he made a trip out to Redlands to get some buds from real orange trees.

"Looked like it wuz a good deal at first. Them buds lived and Bill wuz quite proud o' himself. Every day he'd make a trip up the wash to see how his "orange grove" wuz comin' along. But them buds growed purty slow and it was three years before them young orange grafts produced a blossom. Ironwood's awful slow growin' yu know.

"Two oranges set on the tree that first year, an Bill wuz the happiest man yu ever saw. But he kinda lost his enthusiasm in the fall when them oranges was still about the size o' marbles. It took four years fer them oranges to git ripe—and when Bill finally picked one o' them he broke three teeth tryin' tu take a bite outta it. Lady, yu jest can't grow oranges on ironwood trees—an' that's all the kind o' trees we got 'round here."

Mines and Mining ..

BOISE, IDAHO

GOLD DISCOVERED IN TREES

Money isn't exactly growing on trees in central Idaho's forests, but a scientist has found proof the roots of Douglas firs are tapping gold from potentially promising deposits beneath the ground.

Ben Leonard's findings aren't likely to ignite a new gold rush. But his discovery of gold in sapwood from the conifers could become a valuable tool for mining companies eager to find the precious metal.

Leonard, a scientist for the U.S. Geological Survey, said he found unusually high concentrations of gold and other minerals in the trees and plants that grow in the central Idaho mountains.

The Denver-based scientist who holds a ph.d. in geology said his plant analysis has produced promising evidence that commercially viable gold, molybdenum, tungsten and tin deposits might be lurking underground in a study area on U.S. Forest Service land at Red Mountain near McCall.

Leonard will present a map outlining the extent of his findings. But he cautioned that the research represents "merely the initial exploration" in the area.

MAJOR GOLD DISCOVERY NEAR COULTERVILLE

The Red Cloud Mine, located in the Kate Kearney Mining District near Maxwell's Creek (Coulterville) is the site of a very significant gold strike, according to mine owner Ray Schilber.

The 120 acre property was active during the 1885-1895 era. It has 2 shafts, one 700' deep.

Schilber reported the discovery of a major ore body estimated to contain \$200,000,000 of gold at today's prices.

GOLD PANNING CHAMPIONSHIP

Karl's Silver Club, Sparks, Nevada has been selected as the site of the 1984 (24th Annual) Tropico World Championship Gold Panning Contest. This contest was previously held at Knott's Berry Farm in California. The contest will take place on August 24, 1984.

SONORA, CALIFORNIA

The 5th Annual Mining Fair and Exposition of the Western Mining Council, Tuolumne County Chapter, will be held on May 26 and 27, 1984 at the Tuolumne County Fairgrounds.

Some of the featured events will be a Gold Panning Contest, a Single Jack Contest, Gold and Mineral Displays, Mucking Contest, and a lot more.

If you plan on attending, try to stop and visit the Sierra Railway Museum in near-by Jamestown. It is now owned by the State Park System and is just getting going.

ALLEGHANY, CALIFORNIA

Officials of the Lucky Chance Mining Company have announced that full-scale mining operations will begin this year at the company's Sixteen-to-One gold mine. The mine has been a long time producer.

Great Way to Save Your Back Issues of Desert Magazine



The best way that we know of to preserve and protect those issues you want to save—*Desert Magazine's* handsome, durable binder in brown vinyl with gold *Desert* logo imprint. Keeps your back issues in order for easy reference when you want to plan your next trip or research clues to that lost gold mine. An attractive addition to your bookshelf, too.

Each binder holds twelve issues.

Order Yours Today!

Please send _____ *Desert Magazine* Binder(s) @ \$6.00 + \$1.00 postage & handling.

☐ Payment enclosed \$ _____

☐ Charge to my VISA or Mastercard

☐ VISA ☐ MASTERCARD

ACCOUNT NO. _____

EXPIRATION DATE: _____

Signature _____

Name (PRINT) _____

Address _____

City _____

State _____ Zip _____

Desert Binders

Post Office Box 1318
Palm Desert, Cal. 92261

COMING SOON IN DESERT

PEG LEG REVISITED

DESERT VISITS JOSHUA TREE

HISTORY OF THE OWENS VALLEY ACQUEDUCT

THE PONY EXPRESS PART II

A LOOK AT THE DESERT'S UNIQUE WEATHER

BLOOD REVENGE OF THE NAVAJO



Desert

Magazine • Since 1937

REPLACEABLE SUBSCRIPTION FORM

Desert

☐ Check here if you wish this issue replaced.

P. O. Box 1318, Palm Desert, California 92260

☐ ENTER A NEW SUBSCRIPTION

☐ RENEW MY PRESENT SUBSCRIPTION

NAME _____

ADDRESS _____

_____ ZIP CODE _____

☐ SEND GIFT SUBSCRIPTION TO:

NAME _____

ADDRESS _____

Sign Gift Card: "From" _____

NAME _____

ADDRESS _____

Sign Gift Card: "From" _____

One Year \$15.00

☐ PAYMENT ENCLOSED

☐ ALSO SEND DESERT'S 12-ISSUE HANDSOME BROWN VINYL BINDER FOR

Date Binder(s) with Year(s) ☐ Undated

DESERT MAGAZINE BOOK SHOP

AVAILABLE AT LAST

LOST MINES & BURIED TREASURES ALONG THE OLD FRONTIER

by

John D. Mitchell

A reprint of the book originally published by Desert Magazine in 1953. Features stories on 32 lost mines and treasures of the Desert including such topics as Pegleg's Black Nuggets, Lost Pick Mine, Lost Breyfogle.

Hardbound. Map on Inside Cover
\$12.00

LOST MINES OF THE GREAT SOUTHWEST

by

John D. Mitchell

Contains many stories on lost mines and treasure in the Great American Southwest. A must for the student of lost mines and treasures.

Paperbound \$10.00

ARIZONA ADVENTURE

by

Marshall Trimble

An action packed collection of true tales of early Arizona including lost mines, history, cowboys and much more.

\$5.00

THE STORY OF INYO

by

Willie A. Chalfant

A reprint of a 1922 history. One of the best coverages of early day Inyo County by a member of one of the outstanding early day families.

Over 400 fact filled pages \$12.50

CALIFORNIA FAVORITES COOKBOOK

Compiled by

Al and Mildred Fischer

A collection of more than 400 California inspiral recipes covering such topics as Fruits, Early California, Sea Foods, Wine Cooking and more.

\$3.50

ARIZONA COOKBOOK

Compiled by

Al and Mildred Fischer

A collection of over 350 authentic Arizona recipes including Indian Cooking, Mexican, Strictly Western, Cooking with Cactus, and Outdoor cooking.

Spiralbound \$3.50

TREASURE HUNTING

by

Harold T. Wilkins

The treasure hunters own book of worldwide Land Caches and Bullion wrecks. A Rio Grande Press reprint of the Classic book on lost treasures. Almost 400 pages of hard to come by information.

Hardbound \$15.00

NEVADA TOWNS AND TALES Volume I - North

A collection of essays, stories, history, etc. written by many persons about the Towns, Counties, Events, people, and such around Northern Nevada.

8½ x 11" Softbound \$9.95

DESERT MAGAZINE BOOK SHOP

Pioneering in Silver City

H. B. Ailman's Recollections of Territorial New Mexico 1871-1892

Edited and Annotated by Helen J. Lundwall

Harry B. Ailman, like thousands of other adventurous young men, came west to seek his fortune in the late 1860s. He is set apart from these countless others not just because he struck it rich, but because he left an invaluable firsthand account of his trek west and of his life as a miner, merchant, and banker in southwestern New Mexico. Discovered and published nearly a century after it was written, this memoir is an authentic and detailed account of the hard work, persistence and luck required to succeed in commerce in that era. Accompanying the engaging text are ten sketches, sixteen photographs, and four maps.

Ailman's story will appeal to all interested in authentic pioneer voices. It is an invaluable source of information on mining and commercial development in southwestern New Mexico.

Helen J. Lundwall is the librarian at the Public Library of Silver City.

April 1983 214 pages, illustrated
5 1/2 x 8
Cloth: -0685-3 \$17.50
Paper: -0686-1 \$9.95

Published in cooperation with the Historical Society of New Mexico.

GHOST TOWNS OF THE NORTHWEST

Norman D. Weis

Among the sixty-two ghost towns described, nearly twenty are "unknown," seldom visited, never before written about, mysterious in origin and location. The author has researched and studied the remains of these "unknown" sites and talked with those old-timers who could be found. The book, describing the ghost towns of five Western states, will appeal to anyone who appreciates a good story, as well as to insatiable searchers for remnants of the Old West.

Illustrated with 252 photographs, and 17 maps.

Cloth \$11.95 ISBN 0-87004-201-7

HELLDORADOS, GHOSTS AND CAMPS OF THE OLD SOUTHWEST

Norman D. Weis

Come with Norman D. Weis on a 7,000-mile tour of the Old Southwest. See the weathered ruins of 67 ghost towns and abandoned mining camps — some famous, others little known, and one never before mentioned in written history.

A lively, humorous text and 285 stunning black-and-white photos recall the roaring times when miners dug for gold, silver, or coal in California, Arizona, Nevada, New Mexico, and the southern portions of Colorado and Utah.

Cloth \$9.95 ISBN 0-87004-243-2

THE BLACK ROCK DESERT

Sessions S. Wheeler

The unknown people who, thousands of years ago, lived beside a large lake and left behind puzzling evidences of their cultures; the first white explorers; the forty-niners who followed Lassen's "Death Route"; the desert's vicious Indian war; lost mines; and the history of the basin's big ranches are all included in the fascinating story of an unusual part of our earth, Nevada's Black Rock Desert.

"Buck" Wheeler is widely known as an authority on Nevada history and geology. THE BLACK ROCK DESERT is his 4th Caxton book.

Paper \$5.95 ISBN 0-87004-258-0

Under the Mountain

by Molly Knudtsen

This collection of vignettes about life in Central Nevada is much more than a historical document. Says Knudtsen, "These are the stories neighbors and families tell, where fact grows just a little larger than life. This is the stuff of legend." The author shares her experiences of riding horseback through some of the rich archaeological areas of the valley. She divulges the secret of converting flour, yeast, and potato water into the perfect loaf of bread. And through colorful anecdotes, she passes along the legendary accounts of Colonel Dave Buel. "Molly Knudtsen has developed a collection of gems and has strung them along Central Nevada's bracelet of charm... Under the Mountain is more than a book; it is an experience." —Nevada State Journal. ISBN 072-9, 130 pgs., illus., \$10.50

Nevada Place Names: A Geographic Dictionary

by Helen S. Carlson

A curious passion for attaching names not only to towns but to every physical landmark has existed in all ages of man. It took Helen Carlson fourteen years of research to uncover the origin of some of Nevada's most obscure place names: Horse Heaven, Alcatraz Island, Purgatory Peak, Starvation Flat, and Puny Dip Canyon, to name a few. The book contains historical fact peppered with folklore, and sometimes frustrating leads that end in mystery. "A treasure trove for the Western history aficionado." —Long Beach Independent Press-Telegram. ISBN 041-9, 282 pgs., \$15.00

The Journals of Alfred Doten, 1849-1903

Edited by Walter Van Tilburg Clark

A truly unique documentation of the early West by Alfred Doten, an influential newspaperman on the Comstock Lode. Doten's personal diary provides an intimate look at the California Gold Rush, the Nevada Silver Rush, and the decline of the mining frontier. Equally as important, the journals are filled with intimate details of the man's private life, providing an insight into the daily events of the time that formal histories can never impart. "A unique and immensely valuable document for the social history of the frontier West. No other record is so filled with the sharp, immediate, blunt facts of life on the mining frontier. Bursting with the stuff of real life... an extraordinary chronicle." —Sacramento Bee. ISBN 032-X, 2,381 pgs., 3 vols., illus., \$25.00 each volume or \$60.00 for set with slipcase.

The Nevada Adventure: A History (5th ed.)

by James Hulse

A history of one of the most colorful states in the Union. Hulse traces man's experience through the rugged terrain of Nevada from prehistory to the atomic age, including Nevada's dramatic growth in tourism and industry and the state's concern for ecology and human rights. Hulse also follows the early explorers of the Great Basin and the ordeals of the first immigrants. "An excellent summary of the state's past." —Book Exchange. ISBN 067-2, 282 pgs., illus., \$9.00

Desert Magazine Book Shop

A Gift of Books Will Be Remembered Long After the Occasion is Forgotten.

Name _____

Address _____

City _____ State _____ Zip _____

I enclose \$ _____ (check, money order or charge)

MY CHARGE: ☐



☐



Credit Card No. _____

Expiration Date _____

Month/Year _____

MasterCharge _____

Interbank No. _____

Signature _____

(charge not valid unless signed)

California residents add 6% sales tax

Enclose Self-Addressed, Stamped No. 10

Postage/handling \$1.50

Envelope for Our FREE 10-Page Catalog.

TOTAL _____

Ordering Information

Use the convenient order form. Print all information clearly.

On orders exceeding \$20.00 United Parcel Service is used, requiring a delivery address and NOT a box number.

All orders shipped in padded containers or cartons. Add

\$1.50 postage and handling per order. NOT each item.

Normally, we ship within 48 hours of receiving your order. In the event of a delay exceeding two weeks, you will be notified as to its cause.

California residents please add 6% sales tax. Prices are subject to change and supplies limited to available stock.

Mail today to:

Desert Magazine Book Shop P.O. Box 1318, Palm Desert, California 92261

