Desert

MAGAZINE OF THE SOUTHWEST

JANUARY, 1975 75c

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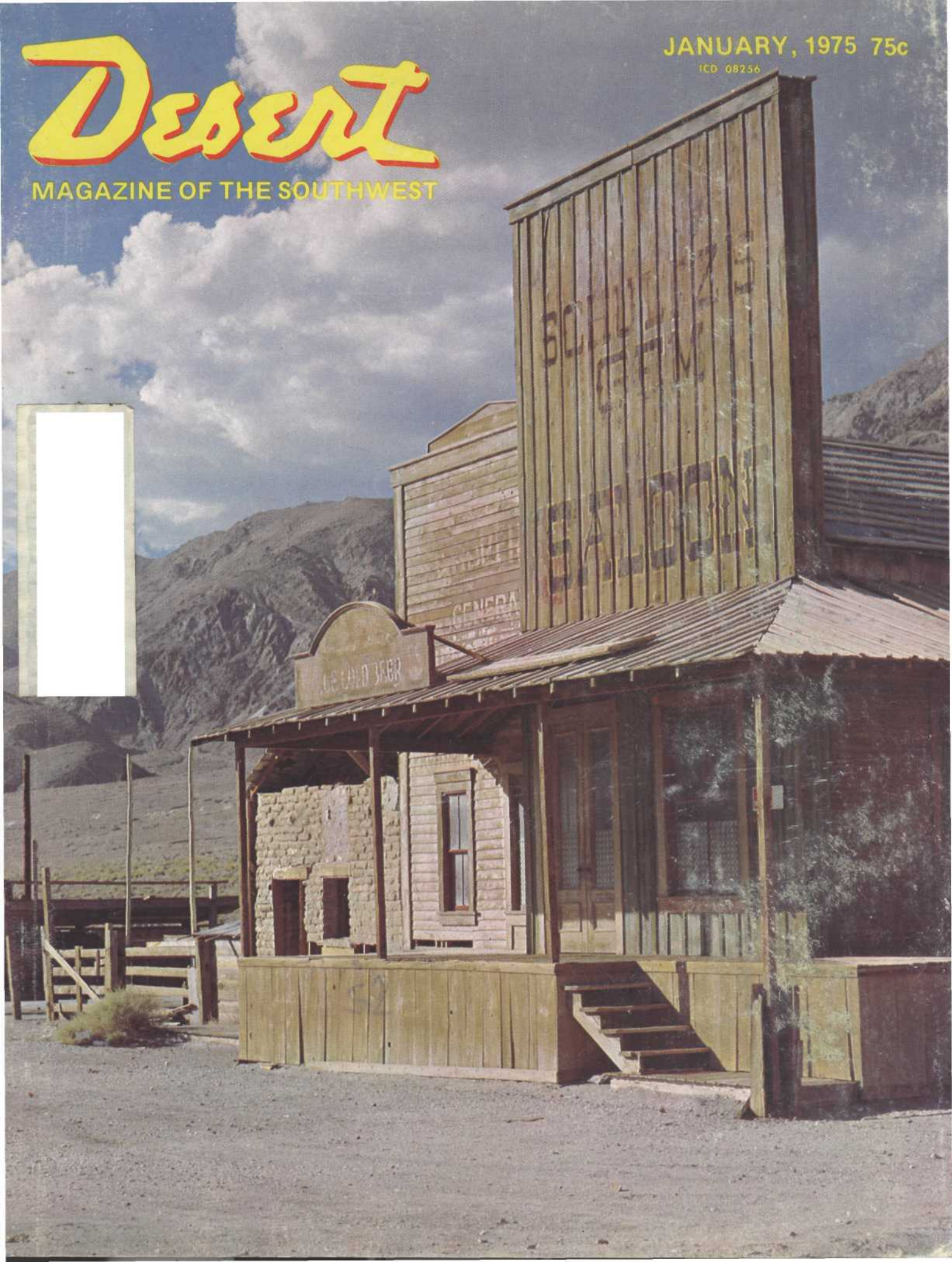

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Desert MAGAZINE

Volume 38, Number 1 JANUARY 1975

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THE COVER:
The old saloon facade at Dolomite, near Lone Pine, California. Photographed by George Service, Palm Desert, California.

FEATURES

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EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: 74-425 Highway 111, Palm Desert, California 92260. Telephone Area Code 714 346-8144. Listed in Standard Rate and Data. SUBSCRIPTION RATES: United States, Canada and Mexico; 1 year, $6.00; 2 years, $11.00; 3 years, $16.00. Other foreign subscribers add $1.00 U. S. currency for each year. See Subscription Order Form in this issue. Allow five weeks for change of address and send both new and old addresses with zip codes. DESERT Magazine is published monthly. Second class postage paid at Palm Desert, California and at additional mailing offices under Act of March 3, 1879.

Books for Desert Readers

SOMEWHERE OUT THERE . . .
Arizona's Lost Mines
and Vanished Treasures
By Kearney Egerton

Oh, the vanished bonanzas! Arizona has lots of them—the Lost Frenchman, the Jabonero Waybill, and the Silver Pish-la-ki, Organ Grinder's Ledge, the Hassayampa Strongbox, the Monterrey Loot, the Lost Escalante, the Blond Mayo, the Sierra Sombrera and dozens of others, including the most sought-after mystery mine in North America—the Lost Adams Diggins.

How richly the names roll off one's tongue. What pictures are conjured up by stories like desert trails—grown dim with time, that cross and re-cross and lead up canyons and across mountains that seem to be the same.

The classic protagonist of a lost mine story is a wanderer who has once seen—or heard of—a rich lode or a glittering placer. But like a desert mirage, shimmering in the distance, it forever eludes him. Sometimes he's the sole survivor of a party of miners, surprised and attacked by Indians while they washed gold ore. Sometimes he's a migrant hermit, pursuing a way of life in the wilderness, far from the day-to-day humdrummery of store or office.

There are stories about lost mines that are like the stories about Ulysses. They have become classic. The mists of the years have given them added mystery and fascination. Stories that have endured so long must have a mother lode of truth. The cast of characters of these stories is panoramic.

Stories of forgotten Jesuit treasure are among the most fascinating of lost mine legends. Historians scoff at the stories, saying the Jesuits neither mined nor hoarded gold, but folklore says that the Tayopa silver mine in the Sierra Madre—the most extensively hunted lost mine in North America—was a Jesuit mine. Old stories say when the Jesuits were expelled from the Southwest in 1767, they covered their mines and buried their bars of gold and silver believing they would return.

The Lost Adams Diggings—placer gold in a hidden canyon somewhere in the Apache fastnesses of Eastern Arizona—is the greatest lost mine tradition of them all. The story has endured for more than a century and a whole subculture has grown around it.

It's all there—in *Somewhere Out There*—a beautifully illustrated book with 23 stories of lost mines and vanished treasures. Paperback, 64 pages, $3.50

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BELOVED WAS BAHAMAS
A Steer to Remember
By Harriett E. Weaver

If you enjoyed *FROSTY, A Raccoon to Remember*, you'll love this appealing story by Harriett Weaver, the author or *FROSTY*. She has deftly woven reality with fiction in a dramatic and tender story of a boy, his pet and the devotion they had for each other.

Set in California's northwest—in a section of giant redwood country rich in beauty, fronting the Pacific and bordered by the great Klamath River, this is where fifteen-year-old Brad Hale lived and raised Bahamas from a weak little calf, given to him because no one expected it to survive.

Through the boy's tender care and careful nurturing, the calf grew strong and big. But strength was not the steer's most compelling quality. Because he was loved, he was loving; because he was so gently tended, he was probably one of the gentlest steers that ever lived.

There were bad days when the family's fortunes had sunk so low that Bahamas' future was a gloomy prospect. Times were bad due to prolonged heavy rains and layoffs in the forest. A heartbroken Brad was forced to face the possibility that Bahamas would be slaughtered for beef.

Then came the worst natural disaster to hit California since the earthquake and fire of 1906. The magnificent redwood country was ravaged by flood—a tearing, raging flood that swept away everything in its paths—trees, animals, humans.

Bahamas, who had known only trust and love, could not comprehend Nature's sudden violence. Separated from Brad and the security of his own private pasture, he responded to the memory of both, and showed beyond all hoping what trust and love can do.

Harriett Weaver is a masterly story teller, and in this tale of a boy and his pet against the elements, she has Bahamas not only a steer to be remembered, but his story a book to be remembered and cherished.

Hardcover, 181 pages, $5.95.

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BOOKS OF

COLORFUL DESERT WILDFLOWERS by Grace and Onas Ward. Segreaged into categories of red, blue, white and yellow for easier identification, there are 190 four-color photos of flowers found in the Mojave, Colorado and Western Arizona deserts, all of which also have common and scientific names plus descriptions. Hardcover, $7.50.

HOW AND WHERE TO PAN GOLD by Wayne Winters. Convenient paperback handbook with information on staking claims, panning and recovering placer gold. Maps and drawings. $2.50.

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THE SALTON SEAYesterday and Today by Mildred de Stanley. Includes geological history, photographs and maps, early exploration and development of the area up to the present. Paperback, 125 pages, $1.50.

ROCKS AND MINERALS OF CALIFORNIA compiled by Vinson Brown, David Allan and James Stark. This third revised edition will save you hours of time by the description and pictures of rocks and minerals found in this state. Color pictures with clearly developed keys show you how to identify what you have found and gives you the fine tools to increase your ability as a field collector. Paperback, well illustrated with photos, locality maps, charts and quadrangle map information. 200 pages, $4.25.

GHOST TOWNS AND MINING CAMPS OF CALIFORNIA by Remi Nadeau. An excellent book on California ghost towns. We recommend it highly. Paperback, $3.75.

RELICS OF THE WHITEMAN by Marvin and Helen Davis. A logical companion to **Relics of the Redman**, this book brings out a marked difference by showing in its illustrations just how "suddenly modern" the early West became after the arrival of the white man. The difference in artifacts typifies the historical background in each case. The same authors tell how and where to collect relics of these early days, tools needed, and how to display and sell valuable pieces. Paperback, well illustrated in color and b/w, 63 pages, $3.95.

NEVADA GHOST TOWNS AND MINING CAMPS by Stanley W. Paher. Covering all of Nevada's 17 counties, Paher has documented 575 mining camps, many of which have been erased from the earth. The book contains the greatest and most complete collection of historic photographs of Nevada ever published. This, coupled with his excellent writing and map, creates a book of lasting value. Large 9x11 format, 700 photographs, hardcover, 492 pages, $15.00.

INSIDE DEATH VALLEY by Chuck Gebhardt. A guide and reference text of forever mysterious Death Valley, containing over 80 photographs, many in color. Included, too, are Entry Guides and Place Name Index for the convenience of visitors. Written with authority by an avid hiker, backpacker and rockclimber. 160 pages, paperback, $4.95.

FROSTY, A Raccoon to Remember by Harriett E. Weaver. The only uniformed woman on California's State Park Ranger crews for 20 years, Harriett Weaver shares her hilarious and heart-warming experiences of being a "mother" to an orphaned baby raccoon. A delightful book for all ages. Illustrated with line-drawings by Jennifer O. Dewey, hard cover, 156 pages, $5.95

OLD FORTS OF THE NORTHWEST by H. M. Hart. Over 200 photos and maps. Exciting pictorial history of the military posts that opened the West. Hardcover, beautifully illustrated, originally published at $12.50. New Edition $3.95.

CORONADO'S CHILDREN by J. Frank Doby. Originally published in 1930, this book about lost mines and buried treasures of the West is a classic and is as vital today as when first written. Dobie was not only an adventurer, but a scholar and a powerful writer. A combination of legends and factual background. Hardcover, 376 pages, $3.95.

BAJA [California, Mexico] by Cliff Cross. Updated to include the new transpeninsula highway, the author has outlined in detail all of the services, precautions, outstanding sights and things to do in Baja. Maps and photos galore, with large format. 170 pages, $4.95.

OUTDOOR SURVIVAL SKILLS by Larry Dean Olsen. This book had to be lived before it could be written. The author's mastery of primitive skills has made him confident that survival living need not be an ordeal once a person has learned to adjust. Chapters deal with building shelters, making fires, finding water, use of plants for food and medication. Buckram cover, well-illustrated, 188 pages, revised edition boasts of 96 4-color photos added. $3.95

AMERICAN INDIAN FOOD AND LORE by Carolyn Neithammer. The original Indian plants used for foods, medicinal purposes, shelter, clothing, etc., are described in detail in this fascinating book. Common and scientific names, plus descriptions of each plant and unusual recipes. Large format, profusely illus., 191 pages, $4.95.

GHOST TOWNS OF THE NORTHWEST by Norman D. Weis. The ghost-town country of the Pacific Northwest including trips to many little-known areas, is explored in this first-hand factual and interesting book. Excellent photography. Best book to date on ghost towns of the Northwest. Maps, hardcover, heavy slick paper, 319 pages, $7.95.

THE DESERT IS YOURS by Erle Stanley Gardner. This is the late author's fifth book written on the desert but the first that is devoted to the western desert of the United States. With parties of hunters and companions, he proves to be the true adventurer, combing the vast reaches of trackless land, and shows how the good outweighs the bad in the perils of the desert. Hardcover, well illustrated, 256 pages, $7.50.

DEATH VALLEY GHOST TOWNS by Stanley Paher. Death Valley, today a National Monument, has in its environs the ghostly remains of many mines and mining towns. The author has also written of ghost towns in Nevada and Arizona and knows how to blend a brief outline of each of Death Valley's ghost towns with historic photos. For sheer drama, fact or fiction, it produces an enticing package for ghost town buffs. Paperback, illus., 9x12 format, 48 pages, $1.95.

LOST MINES & BURIED TREASURES ALONG THE OLD FRONTIER by John D. Mitchell. The second of Mitchell's books on lost mines which was out-of-print for many years. Many of these appeared in DESERT Magazine years ago and these issues are no longer available. New readers will want to read these. Contains the original map first published with the book and one pinpointing the areas of lost mines. Mitchell's personal research and investigation has gone into the book. Hardcover, 240 pages $7.50.

SOURDOUGH COOKBOOK by Don and Myrtle Holm. How to make a sourdough starter and many dozens of sourdough recipes, plus amusing anecdotes by the authors of the popular **Old Fashioned Dutch Oven Cookbook.** A new experience in culinary adventures. Paperback, 136 slick pages, illustrated, $3.95.

MY CANYONLANDS by Kent Frost. A vivid account of the early exploration of Utah's Canyonlands by the author who spent his entire life exploring America's new national park and who presently runs a guide service through the scenic country. Hardcover, artist illustrations, 160 pages, $6.95

MEXICO Guide by Cliff Cross. All new, revised edition with excellent information of trailer parks, hotels, camping space; tips on border crossing, shopping, fishing, hunting, etc., as well as the history, culture, and geography. 210 maps, 675 photos, 195 pages, $4.95.

OWYHEE TRAILS by Mike Hanley and Ellis Lucia. The authors have teamed to present the boisterous past and intriguing present of this still wild corner of the West sometimes called the I-O-N, where Idaho, Oregon and Nevada come together. Hardcover, 225 pages, $7.95.

THE WEST

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DESERT, The American Southwest by Ruth Kirk. Combining her knowledge of the physical characteristics of the land, and man's relation to the desert from the prehistoric past to the probable future, with her photographer's eye and her enthusiasm for a strange and beautiful country, the result of Ruth Kirk's work is an extraordinarily perceptive account of the living desert. Highly recommended. Hardcover, beautifully illustrated, 334 pages, $10.00.

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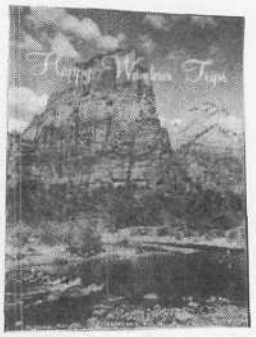
CALIFORNIA STATE PARKS by the Sunset Editors. A comprehensive guide covering the northern coast and redwood country, the Sierra Nevada and northern mountains, the San Francisco Bay area, central valley and foothills, the central coast region, the southern desert and mountains. Area maps and photos. 128 pages, paperback, large format, $2.95.

DESERT PLANTS FOR DESERT GARDENS by Patricia Moorten and Rex Nevins. Compiled for better understanding and appreciation of plants indigenous to the desert region, including proper design for desert gardens, container plants, pool areas and complete landscaping. Paperback, illustrated, 113 pages, $3.00.

ON DESERT TRAILS by Randall Henderson, founder and publisher of Desert Magazine for 23 years. One of the first good writers to reveal the beauty of the mysterious desert areas. Henderson's experiences, combined with his comments on the desert of yesterday and today, make this a MUST for those who really want to understand the desert. 375 pages, illustrated. Hardcover, $7.50.

LOST MINES OF THE GREAT SOUTHWEST by John D. Mitchell. The first of Mitchell's lost mine books is now available after having been out of print or years. Reproduced from the original copy and containing 54 articles based on accounts from people Mitchell interviewed. He spent his entire adult life investigating reports and legends of lost mines and treasures of the Southwest. Hardcover, illustrated, 175 pages, $7.50.



BACK ROADS OF CALIFORNIA by Earl Thollander and the Editors of Sunset Books. Early stagecoach routes, missions, remote canyons, old prospector cabins, mines, cemeteries, etc., are visited as the author travels and sketches the California Backroads. Through maps and notes, the traveler is invited to get off the freeways and see the rural and country lanes throughout the state. Hardcover, large format, unusually beautiful illustrations, 207 pages, $10.95.

DESERT VACATIONS ARE FUN by Robert Needham. A complete, factual and interesting handbook for the desert camper. Valuable information on weather conditions, desert vehicles, campsites, food and water requirements. Information on desert wildlife, mines, ghost towns, and desert hobbies. Paperback, illustrated, 10 maps, 134 pages, $3.95.

THE GREAT AMERICAN WEST by James D. Horan. With over 650 illustrations, many in full color, this is the full western story from the days of the conquistadores to the 20th Century. Many rare photos never published before. Large 9x12 format, hardcover, 288 pages, originally published at $10.00, now only $4.95.

HAPPY WANDERER TRIPS by Slim Barnard. Well-known TV stars, Henrietta and Slim Barnard have put together a selection of their trips throughout the West from their Happy Wanderer travel shows. Books have excellent maps, history, cost of lodging, meals, etc. Perfect for families planning weekends. Both books are large format, heavy paperback, 150 pages each and $2.95 each. Volume One covers California and Volume Two Arizona, Nevada and Mexico. WHEN ORDERING STATE WHICH VOLUME.

SOUTHWEST INDIAN CRAFT ARTS by Clara Lee Tanner. One of the best books on the subject, covering all phases of the culture of the Indians of the Southwest. Authentic in every way. Color and black and white illustrations, line drawings. Hardcover, 205 pages, $15.00.

TURQUOIS by Joseph E. Pogue. [Memoirs of the National Academy of Sciences]. First printed in 1915, **Turquois** has in its third printing (1973) been updated in many ways. Among them are listed currently-operated Turquois mines, more color plates. The book is full of incredible results of research and an in-depth study of this fascinating mineral of superficial origin. Hardcover, 175 pages, beautifully illustrated, $15.00.

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THE BAJA BOOK, A Complete Map-Guide to Today's Baja California by Tom Miller and Elmar Baxter. Waiting until the new transpeninsular highway opened, the authors have pooled their knowledge to give every minute detail on gas stations, campgrounds, beaches, trailer parks, road conditions, boating, surfing, flying, fishing, beachcombing, in addition to a Baja Roadlog which has been broken into convenient two-mile segments. A tremendous package for every kind of recreationist. Paperback, 178 pages, illus., maps, $7.95.

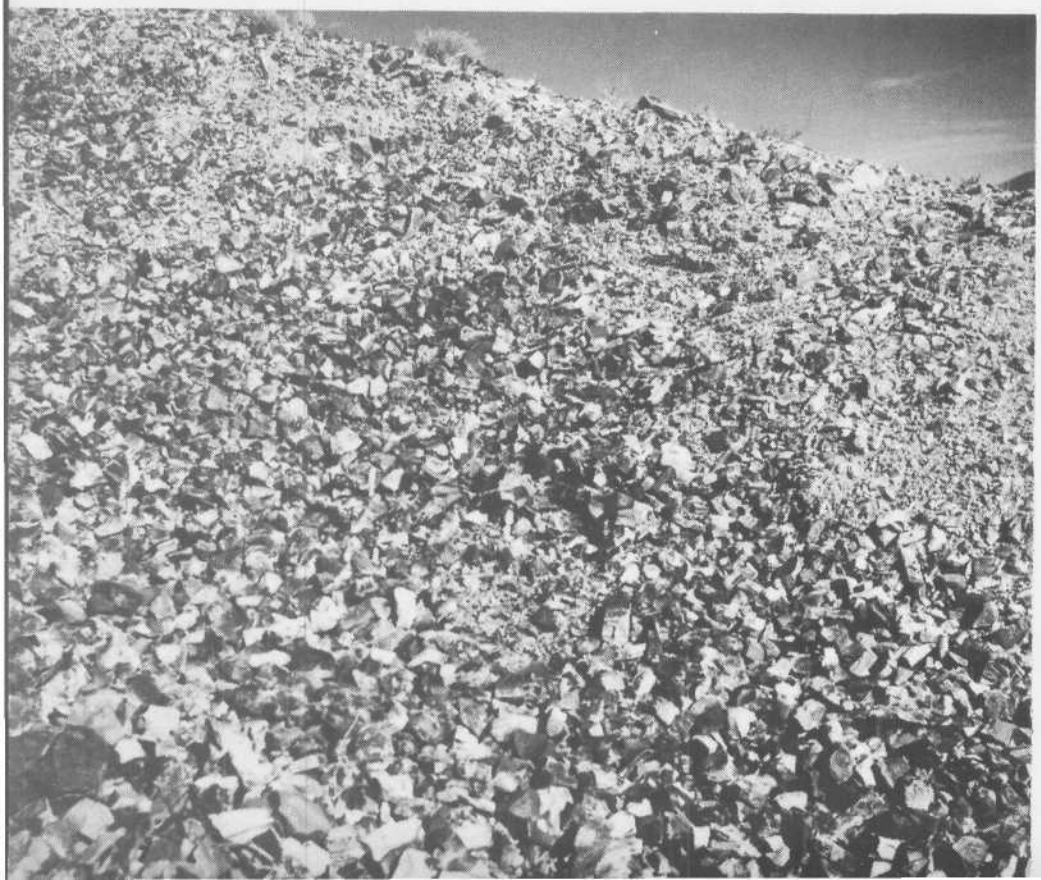
WILY WOMEN OF THE WEST by Grace Ernestine Ray. Such women of the West as Belle Starr, Cattle Kate and Lola Montez weren't all good and weren't all bad, but were fascinating and conflicting personalities, as researched by the author. Their lives of adventure were a vital part of the life of the Old West. Hardcover, illustrated, 155 pages, $7.95

Samples of wonderstone from the Fallon deposits show some of the pattern effects. Specimen in upper left is red and yellow—from Yellow Hill. The other three specimens are in shades of purple and pink—from Rainbow Mountain.

by MARY FRANCES STRONG

WONDERFUL

What is Rainbow Mountain made of? Purple, plum and red wonderstone which is tumbling down the talus slope. The hardest part of collecting is selection because of the abundance of so much attractive material.

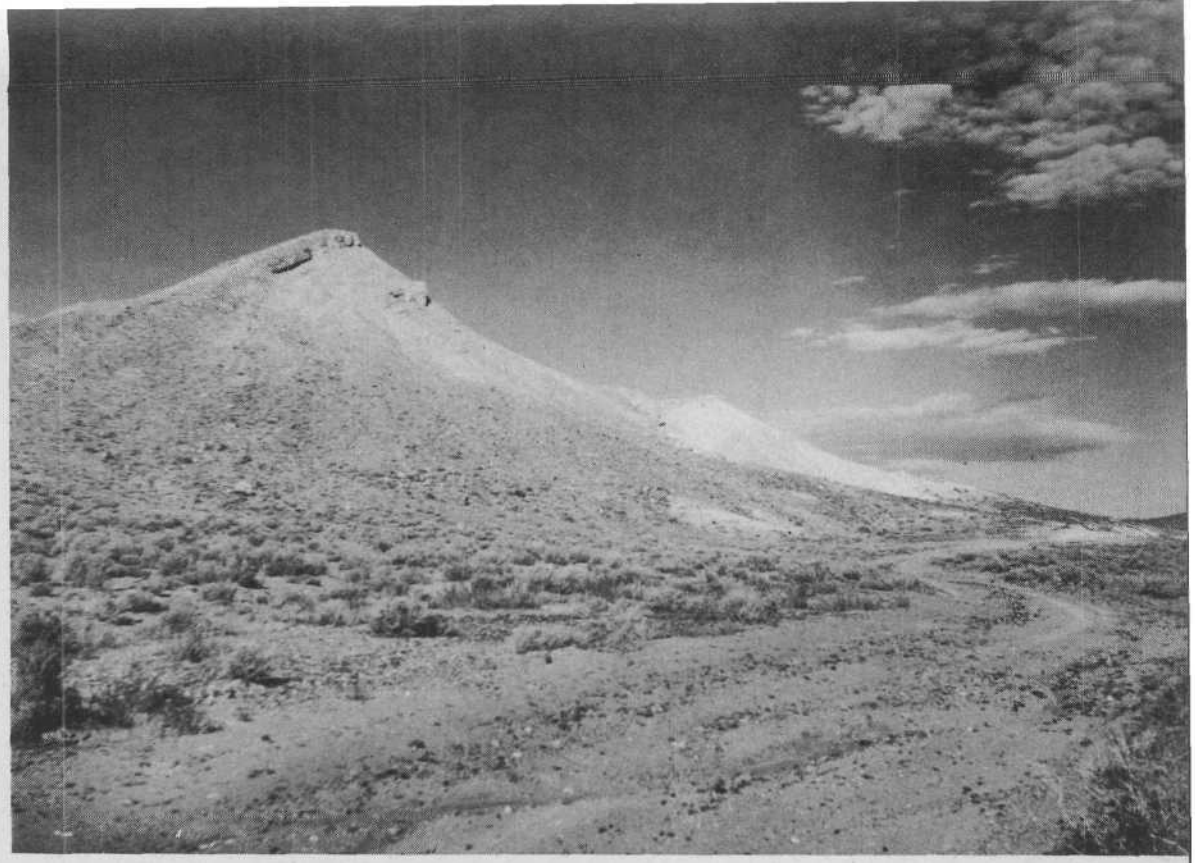


OLD MOTHER NATURE has provided the rock collector with many beautiful gemstones. But, she must have been "doing her thing" when she created wonderstone. Wild and weird are its flashy colors and intricate geometric designs. Running the gamut of the color spectrum, with no two patterns exactly alike, wonderstone has risen from the ranks of dimension stone to a place among the fine cutting materials of the West.

In the early days of the lapidary hobby, wonderstone was used only for bookends, penstands, spheres and other massive objects. Eventually, new materials to work with were eagerly sought and cabochons of wonderstone made their appearance. Careful cutting of high-grade material can produce some very unusual designs.

Wonderstone is a form of the common volcanic rock rhyolite—a rather porous rock, generally deposited in large flows. It is this porosity and subsequent "cracking" of the large mass which sets the stage for transformation to wonderstone, if favorable conditions exist.

When such a deposit is subjected to



At "Yellow Hill," in the Lahontan Mountains, tons and tons of yellow, brown and red wonderstone will be found on the talus slopes. This is a good locale for a base camp when exploring the region.

Photos by Jerry Strong

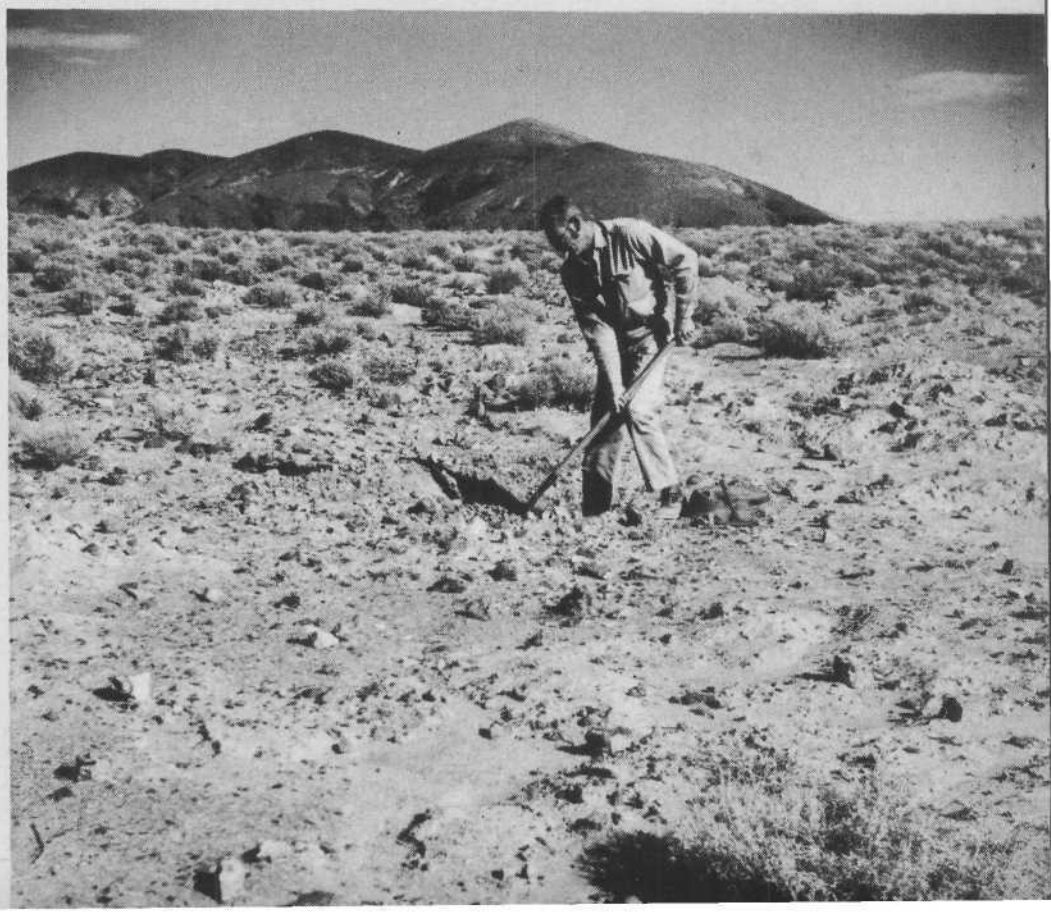
WONDERSTONE

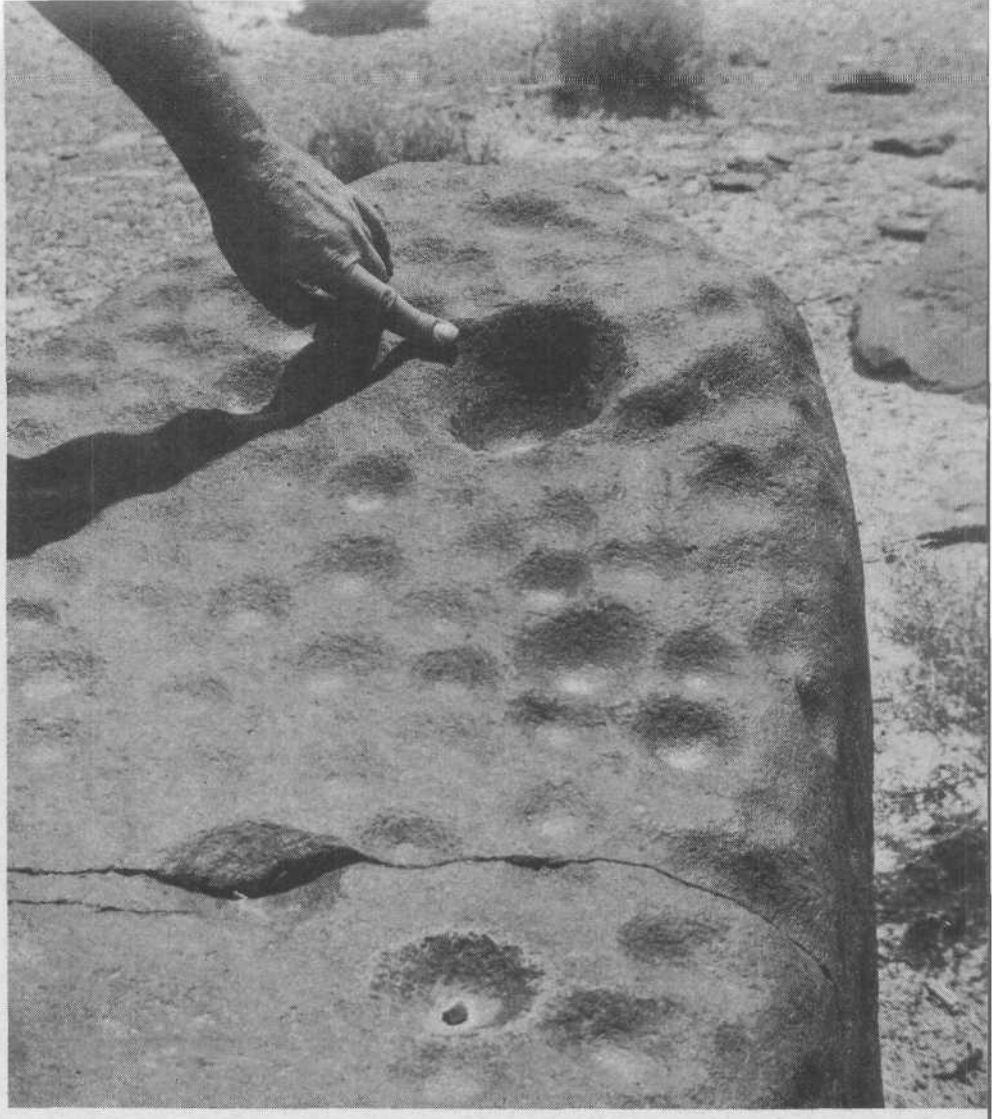
the infiltration of mineral-laden waters, it will absorb the mineral oxides—commonly, manganese and iron along with dissolved silica. The latter mineral must be present in a sizable quantity if the material is to polish well. The amount of absorption will determine the degree of color. Successive infiltrations are responsible for the many-hued and varied patterns.

Nevada seems to have more than her share of wonderstone. Of special note are deposits in the Trinity Range west of Lovelock (*Desert*, July 1973), two locales near Fernley, a large deposit southeast of Fallon, and two deposits of exceptionally good quality near Tonopah. At one of the latter, wonderstone occurs in beautiful shades of blue. Unfortunately, collecting is not permitted at this private claim. In recent years, club groups have visited this area without permission. Such disregard for private property, on the part of a few, certainly tarnishes the image of all rock collectors.

Wonderstone commonly occurs in shades of yellow and brown or pink or red. In the latter, it often grades into purple. Pastel shades set off the deeper

Digging in comparatively soft ground on Agate Slope produces colorful specimens of plume and moss agate. This is an added bonus for visitors to the area.





Besides hundreds of petroglyphs and evidence of an aboriginal drift fence, prehistoric Indians left pa has [deep hole mortars] at Grimes Point. The depth of the larger pa has indicates a long period of use.

tones and the result produces outstanding patterns. The exposed surface of rough material looks grainy and often faded. However, sanding and polishing deepens the colors.

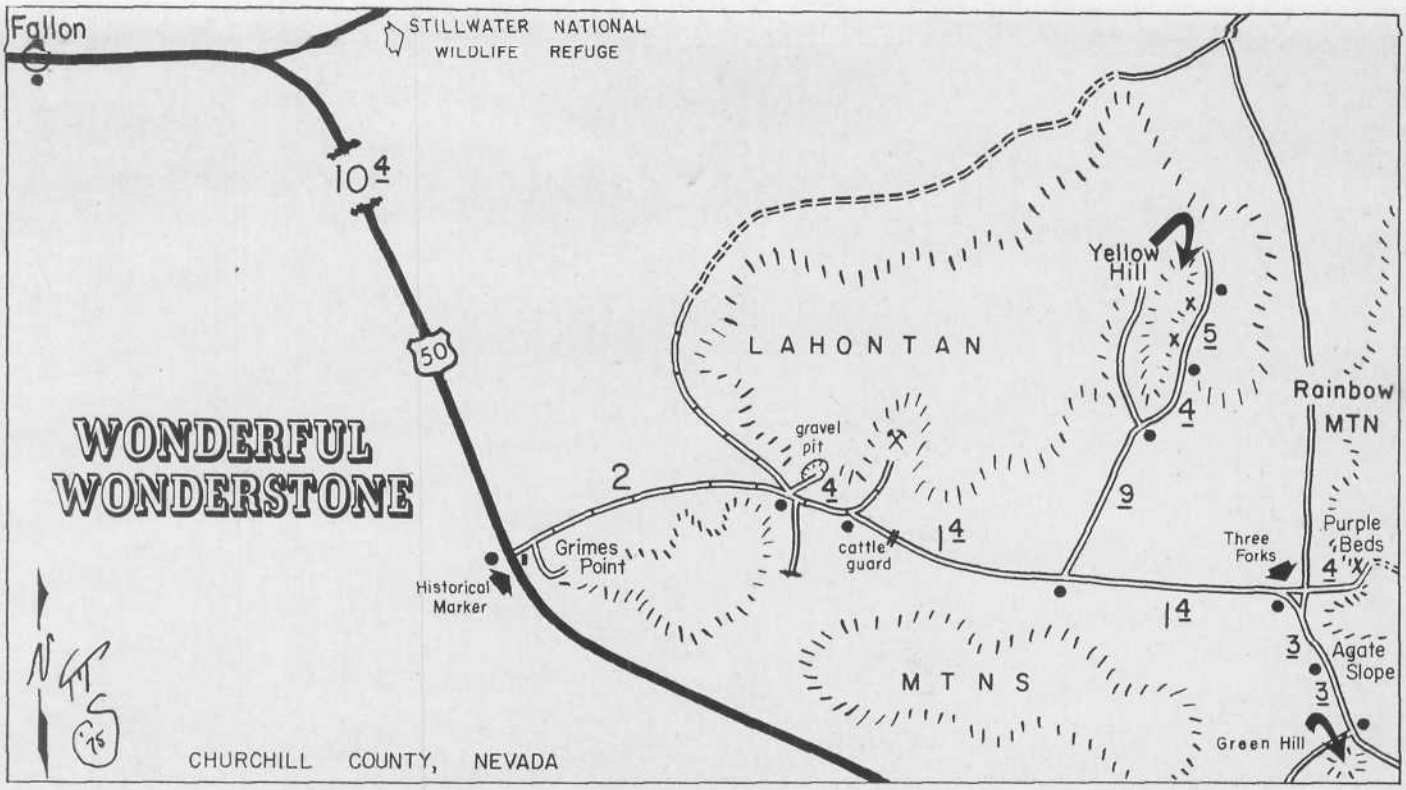
Commercially, deposits of wonderstone have been quarried for use as dimension stone (ornamental building and flagstone). It makes very striking facings for buildings and several examples may be seen in downtown Tonopah. For decorative garden use and fireplace facing, it is extremely attractive. Yet, the various mining ventures apparently have not been profitable. Perhaps the high cost of transportation to a major market has largely been responsible for this.

Nevada's best known location, at least to rock collectors, is the Fallon Wonderstone Area, 10 miles southeast of the city of Fallon. At this location, two promontories—named Yellow Hill and Rainbow Mountain—are entirely composed of wonderstone. Though just a little over a mile separates them, each deposit is of a different color. Their talus slopes have been the "happy hunting grounds" for rock collectors over several decades. Yet, tons and tons of material still remain.

The wonderstone area lies east of Highway 50 from Grimes Point—a marked historical site. Nevada has an excellent program of placing attractive, state-shaped signs at historical points of interest.

Surrounded by a convenient parking space, the plaques give a brief history of the site or event. A great deal about Nevada's colorful history can be learned by taking a moment to stop at these areas. We always find them an excellent excuse for a coffee break. Watch for the Grimes Point marker at the turnoff to the collecting locales.

Grimes Point is a prehistoric rock art site, one of the largest in Northern Nevada. There are over a hundred basalt



boulders covered with petroglyphs believed to date between 5000 B.C. and 1500 A.D. Experts tell us Nevada's glyphs were of religious significance and insured the success of large hunts. They are usually located near seasonal migration routes. The act of making a glyph was a ritual performed by a group leader before each hunt. There appears to have been a strict taboo against anyone "doodling" other than those directly associated with the hunt.

Of particular interest at this site is the evidence of an aboriginal drift fence used for driving antelope and deer. It indicates game was plentiful and several groups must have worked together during the large drives.

Caves wih smoke-blackened walls are found in the hills at Grimes Point. One cave contains faint, red pictographs. No doubt the early Indians camped here seasonally during game drives and the hunting of waterfowl. The many small lakes in the Stillwater Region (now a Wildlife Refuge and Game Management Area) are probably the remnants of a much larger, prehistoric lake.

The road to the collecting area is graded the first two miles. When it curves left to a mining operation in the hills, a sandy, two-track road becomes the route (see map). Though there are sandy stretches, the road is solid underneath. Stay in the tracks, keep a constant speed and there shouldn't be any problems. Trailers may be taken into the area if towed by pickups.

A mile further along, "Yellow Hill" will loom on the left horizon. Solid tracks will be seen leading to its base. Campsites are a matter of choice in this open desert country.

Stepping out of the car, you will find yourself surrounded by chunks of wonderstone in many shades of yellow, brown and red. Walk around, explore the area before you start collecting. Personally, we preferred the material on the eastern side of the hill.

Rainbow Mountain lies just over a mile east of Yellow Hill. Return to the main road and turn left. In 1.3 miles you will come to the junction of Three Forks. This is a good flat area in which to camp unless you have made a base camp at Yellow Hill. Trailers should not be taken beyond this point, as space is limited at the Rainbow Deposit.

Beautifully colored and patterned wonderstone occurs at Rainbow Mountain in shades of purple, plum, pink and assorted combinations. As at Yellow Hill, there isn't any need to dig for specimens unless you so desire. The hardest part of collecting in these locations is trying to make a selection from so many fine specimens.

An added bonus when visiting the wonderstone area is "Agate Slope." The main road goes through a deposit of colorful plume and moss agate. Small chips will be seen on the surface and shallow digging, in comparatively soft ground, produces good specimens of cutting quality.

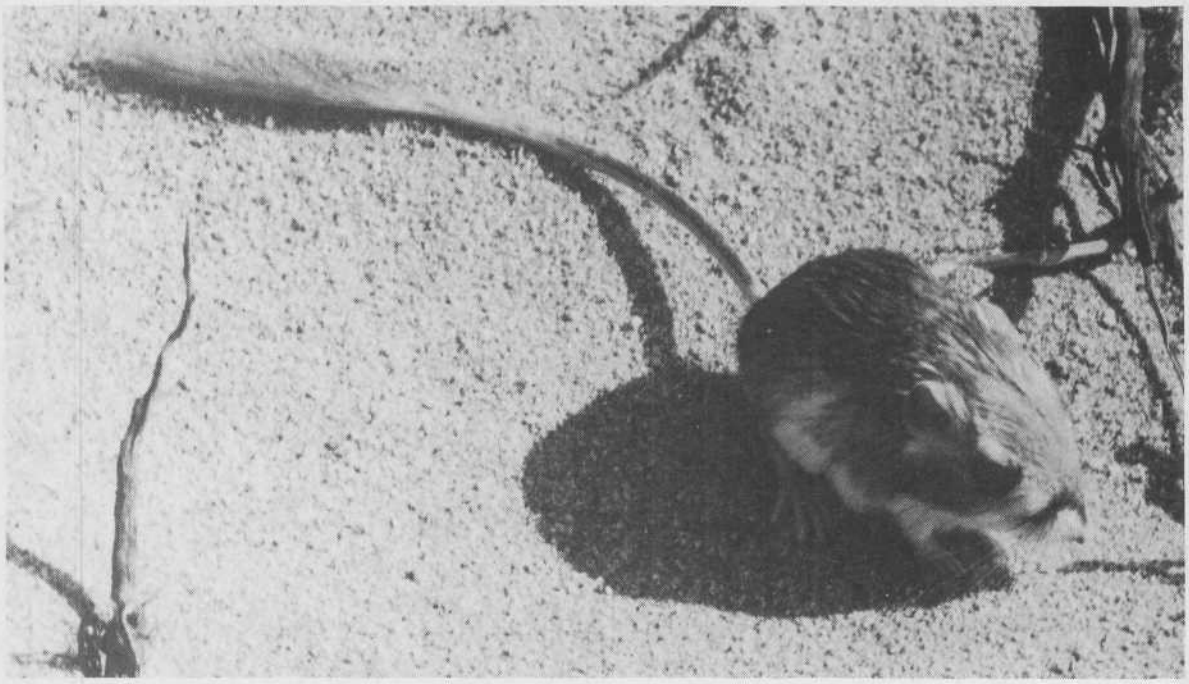
Looking south you will see a "green" hill. If you are doing any rock work, you may find it of interest. The large, green boulders, found on its slopes, would make an attractive wall or fireplace.

A busy vacation trip could be planned in the Fallon area, as there are many points of interest to see. A stop should be made at the Churchill County Museum. They can direct you to several historical sites such as the Pony Express Station and the old ghost town of Rawhide. You might enjoy visiting the "Ghosts of the Carson Sink" (*Desert*, December 1973). Bird-watchers will find a trip to the Stillwater Wildlife Refuge to their liking. Rock collectors could combine a trip to the wonderstone deposits with several days at the Broken Hills wood areas (*Desert*, September 1972).

Nevada has attained international recognition for her famed casinos and nightlife. To the outdoor enthusiast she offers another face. There is room to roam in wild and scenic country, largely unpopulated. Ruins of great gold and silver camps lie in dozens of canyons and on a myriad of hills. A few active mines still ply their trade. Best of all, as far as the rock collector is concerned, Nevada has many fine gem fields and "mountains of wonderful wonderstone." □

KANGAROO

Kangaroo Mice differ from their cousins, the Kangaroo Rats, in subtle ways as the sketch and photo reveal.



Kangaroo Rat

UP IN the Great Basin's high deserts, in the land of sagebrush and blowing sand, live some of the Southwest's oddest citizens. These are the tiny kangaroo mice, off-beat members of the pocket mouse-kangaroo rat clan. Large of head, short of body, they look for all the world as if someone had pushed them together fore and aft before finally hanging on an extra long tail. Measuring only six or seven inches in overall length, of which better than half is said tail, these little fellows make their living as seed eaters, supplementing this diet at times with insects. Yet, the biggest and fattest may weigh no more than five sticks of gum.

Kangaroo mice (once called dwarf kangaroo rats and hence their name *Microdipodops* ("small kangaroo") come in several styles. One is a dark species found in Oregon, Utah, California and Nevada, and known in scientific circles as *M. megacephalus* ("big head"). Another, named *M. pallidus*, for its sandy coloring, lives in Nevada and eastern California, and also has the clan's inflated skull size. Like a kangaroo, these mice have greatly elongated hind legs and big hind feet which they use in a jumping type of locomotion. Their forelimbs are shortened, and while used in walking, are particularly handy for stuffing provender into the big fur-lined pouches on either side of their heads.

The Great Basin, with its extremely arid conditions, high altitudes and big daily and seasonal fluctuations in temperature, is a very tough place in which to live. It is especially so for a little mammal who, because its body is so small in bulk, has a high surface to volume ratio. This means that when the weather is cold, body heat will be lost fast via the surface; when it is hot, heat is taken aboard quickly. Therefore, any physiological adjustment the small animal has to make to handle adverse temperature conditions is bound to be very costly in terms of energy expenditure. And, the limits of what can be handled in temperature extremes are soon reached. Foodwise, too, the situation is not good. The Great Basin sets a spare and erratic table for vegetarians. Leaf and seed production is low at best. Such foodstuff is available only part of the year and, under prolonged drought conditions, may not be available at all for several consecutive years.

Yet, in good times and bad, kangaroo mice hang on, and how they do it is just now beginning to be understood, thanks to the hard work of several biologists. The latest papers about these little-known animals just published by zoologists Michael O'Farrell and Andrew Blaustein bring together information dug out by previous and current researchers, and report on their own work as well.

Home sweet home for a kangaroo mouse, it seems, consists of a short tunnel dug in the sand, generally in a drifted dunes area, spotted with desert shrubs. Only a small territory is maintained around the home burrow, but a relatively large home range is used for seed hunting. Gentlemen *megacephalus* apparently like plenty of room with a circular range of about 7230 square yards, the ladies, not getting about so far, with about half that. Comparative figures for *pallidus* are not around beyond zoologist J. Ghiselin's findings that only about 260 yards occurred between his captures of males and 150 for females. Both kinds defend their nests vigorously with accompanying squeals or scratchy growling sound effects.

MICE

by K. L. BOYNTON ©1974

Kangaroo Mouse
Sketch by Karen Fowler

A tunnel burrow is a fine place to spend the day. Located only a little below the surface, it provides comfort away from the temperature extremes outside, and plugged up tight, makes for a fair degree of safety from prowling neighbors. Along about sunset, there's a stirring inside, the sand door crumbles away, and the resident hops out. The search for food now begins, with the biggest peak of activity about two hours after sunset. But, as those big black eyes indicate, the kangaroo mouse is equipped with nocturnal vision, seeing well as long as there is any available light at all. When night finally closes in, the old nose takes over as major food-locator. The kangaroo mouse hates bright light. Even moonlight cramps his style, for a mouse abroad on the bare desert is easy prey. Partly cloudy skies are best for foraging. With no wind greater than eight miles per hour to blow the sand and stop seed hunting, foraging can go on during the night, working up to a second peak of activity just prior to sunrise.

Zoologists E. Raymond Hall and Jean Linsdale, studying *megacephalus* in Nevada, were intrigued by the kangaroo mice tracks in the sand to be seen in the early A.M. before the day's winds erased them. Standing out clearly were the large imprints of those big hind feet planted down firmly opposite each other, toes pointing out. Even the stiff projecting hairs on the sides of the soles, which give such excellent support in fine loose sand, left their impression. And, written in one set of tracks, was the story of this mouse's adventures during the night.

Here he was feeding, working along with his weight on his big hind feet, forefeet down sometimes, but mostly handling seeds, stuffing them rapidly into a face pocket, maybe pulling a plant part down to reach them. And here, a wiggle track of a beetle ended abruptly, its maker snatched up to land in a cheek bag, too. Hurry! Hurry! Hurry in searching, hurry in finding, hop along a little further, look more, the tracks close together in the mouse's careful searching, forefeet sifting the sand as he went.

But—here's a sudden change in track pattern!

The impression of only one pair of hind feet is there now; the next pair far ahead and far beyond that the next. Big bare distances between their consecutive marks tell of a quick take-off in bipedal leaps into a zig-zag course of landings and kickoffs. The kangaroo mouse, doing full justice to his name, was fleeing for his life, ricocheting across the sands with an enemy (must have been an owl, for no predator tracks are on the sand) in hot pursuit. That he made it to sagebrush safety, the last leap mark clearly shows.

Life-saving ricochet is a fancy form of locomotion that takes the proper equipment, and the whole pocket mouse-kangaroo rat clan has it in varying degrees. Anatomist R. T. Hatt's classic study pointed up the value of the elongated hind legs and their tremendously enlarged transverse muscles that give the lift to the leap. All the way up the body to the nose there are changes in the skeleton that improve balance, make the body more compact and lessen head movement. A long tail itself is important, and many of the most successful ricocheters have tufts on theirs, further aiding balance.

Oddly enough, kangaroo mice, past masters of the art, have a plain tail, but starting at the rump and extending out along the tail for about a third of its length is a swelling. Why this is here has not been determined for sure. It may act

as extra balance helping in bipedal locomotion, or it may be a place for fat storage. However, O'Farrell, in his study of *megacephalus*, did not find any variation in its size when food was scarce and drought conditions prevailed, which would be apt to happen if the mouse were living off its fat. In any event, these mice are first class jumpers—straight up, too. One temporary captive repeatedly leaped out of a 17-inch-tall can without touching the sides at all, although the can was only 10 inches in diameter.

What the night's tracks didn't show was the mouse's argument with a neighbor of another species, namely the pocket mouse. The two just don't get along. In the field they maintain what is termed "constant spacial isolation" which is a polite way of saying they keep their distance or fight. Things get so bad during peak seed collecting times in summer that *megacephalus* says to heck with it. Shifting over to insects almost entirely, he leaves the seeds to the pocket mouse, thus avoiding further energy-wasting trouble. The old animosity carries over into the lab, too, zoologist L.M. Huey reporting that a kangaroo mouse and a pocket mouse in adjoining cages kicked sand at each other through the wire screen partition.

Anyhow, after a night hauling cargo to his burrow, quarreling with the neighbors and fleeing enemies, the kangaroo mouse is back home with his door closed by sunrise. And so to bed, a favorite snoozing position being on his back with forelimbs stretched over his head and his hind ones tucked up on his belly.

Since spring is late coming to the high deserts, family time for these kangaroo mice runs from April to mid-September. Litter sizes average at about three or four. The weather the previous fall and winter makes a difference, for if there has been no precipitation there is no germination of winter annuals and hence a bad food supply situation. In this case, reproduction is cut considerably.

Wintertimes, from evidence so far, it appears that *megacephalus* hibernates. *Pallidus* can, too, if push comes to shove, as anatomists G. A. Bartholomew and R. E. MacMillan showed. Under general winter situations, however, they are active even with the temperature as low as 14 degrees F. unless the sand surface gets wet and freezes hard. Then they stay underground for several consecutive nights.

But this *pallidus* bunch has a specialty of its own for handling adverse conditions, as the team of J. H. Brown and Bartholomew discovered. It seems that this kangaroo mouse can go into a recurrent torpor, a state half way between the long dormancy of hibernation and the short daily torpor that some bats and certain small rodents undergo. In kangaroo mice, this torpor can be triggered either by reduced food supply or by low environmental temperature, and it results in

a great saving in energy expenditure. At 41 degrees F., for instance, the torpid mouse's body processes slow down so far that its oxygen requirement drops to only 1/60th of its need under normal conditions.

In lab tests, food played an enormously important role. If the mice were given seeds in excess each day, for example, not a single one became torpid at 62.6 degrees F. or 42.8 degrees F. Yet, at both these same temperatures, if the seed ration was cut to 1.5 grams all the mice became torpid.

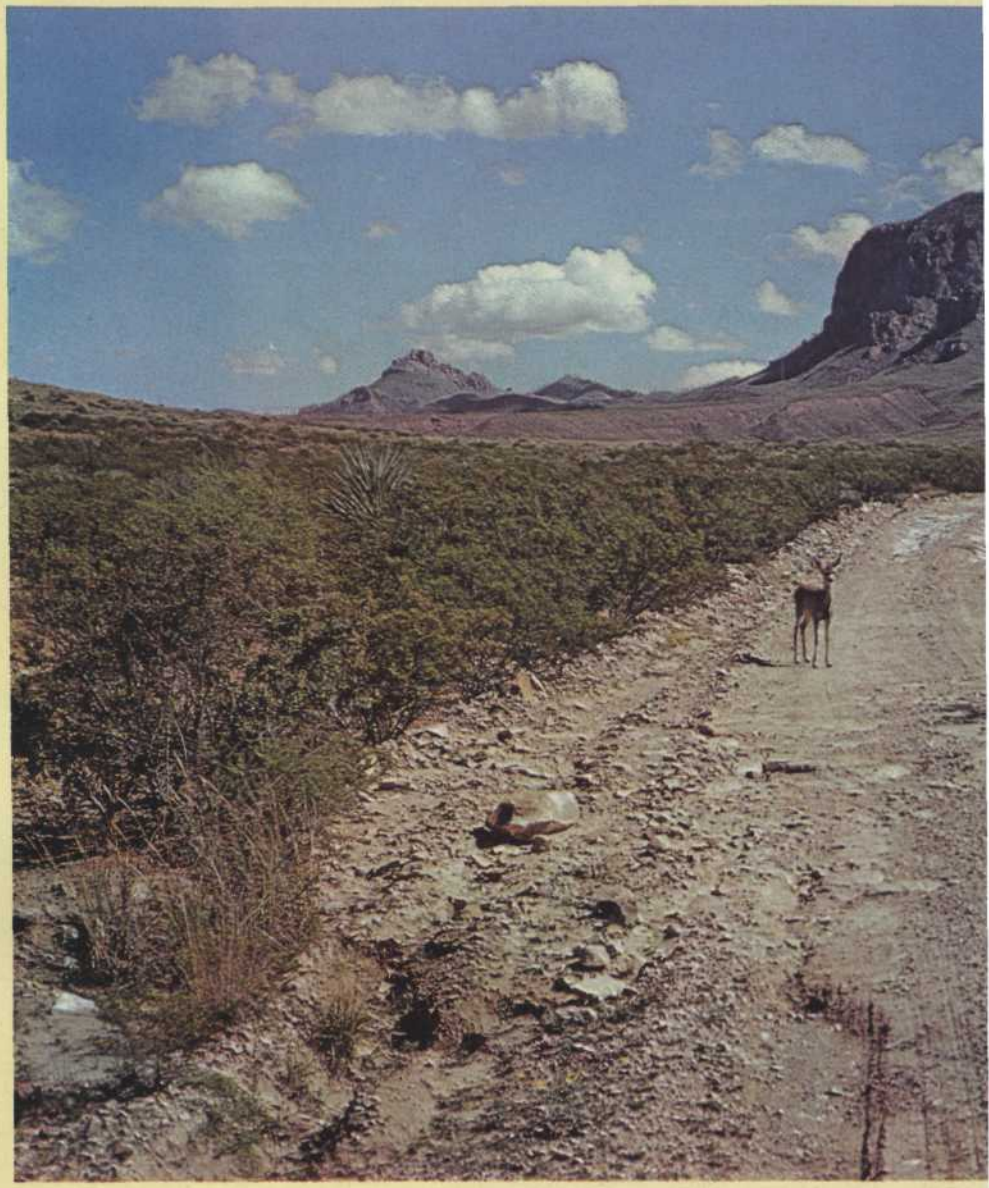
More time was spent in torpor when food was reduced; but at the same temperature, when food was again increased, the time lessened. Torpor periods were usually about six hours to three days in length. When arousal did occur, it was at the beginning of a daily dark period, another energy saving device in nature providing the maximum time for foraging. Surprisingly, the mice were able to come out of their torpor at 41 degrees F., a very low temperature for rodents weighing less than 20 grams, such capability being obviously of survival value in the cold deserts of the Great Basin.

What astonished Brown and Bartholomew most was that at all temperatures and on all food rations, the mice cached stores of seeds in their cages. Even when given only 0.5 grams per day, they stored 1/6 to 2/3 of the food they received. Furthermore, at the end of the experiment, the mice weighed about the same or more than when captured.

The zoologists cogitated on this. True, certain pocket mice can adjust the length of their daily torpor to food supply at a given temperature. But these kangaroo mice do more. They do a complex job of integrating the energy to be gained from erratic food supplies with the cost of activity and the cost of temperature regulation. And they do it over a wide range of environmental temperatures. They can remain in torpor longer on a given food ration, still maintain body weight, and hence keep going under exceedingly rugged conditions. In the Great Basin's high deserts, they adjust their energy output to conserve food during spells of bad weather, or even in the face of complete crop failure.

No wonder these little fellows are such a big success. □

THE BIG BEND



The author, Charles Garrett, is a professional treasure hunter and the owner of Garrett Electronics, a leading manufacturer of metal detection equipment. As a treasure hunter, he has traveled across the United States and to several foreign countries. Of all places he has visited, the Big Bend area of Southwest Texas is his favorite. His affection for this rugged country is evident in the following description of one of the most unique desert areas in the United States.

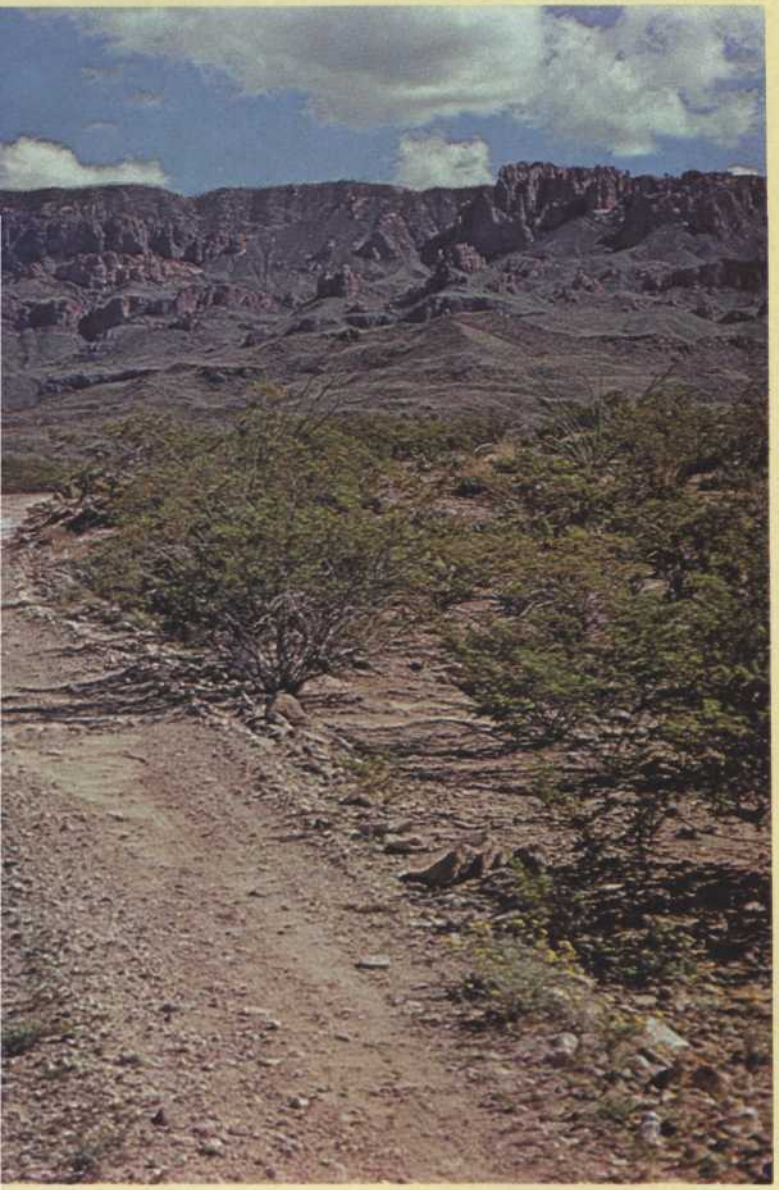
IT IS ALMOST impossible to explain the lure of a rugged, inhospitable wilderness area which has resisted the intrusion of man for centuries. It is a feeling that is deep within any person who can stand surrounded by rock and cacti in the heat of midday and feel a yearning to stay. The Big Bend of Texas is a place where a person can come to terms with life. A person who is insensitive to the "ways of the desert" will be repelled and treated harshly by the environment, while those who respect and understand the different lifestyle will find enjoyable days and nights of restful sleep.

In the evenings, as the camp begins to quiet down for the night and silence comes to Big Bend, it is easy to envision the challenges faced by the pioneers who believed the harsh land held a promise of prosperity for the future. It is easy to understand why they battled with nature and other men in their effort to remain.

Perhaps the uniqueness of the Big Bend area lies in a once stable economy which involved mining, cattle and sheep raising, commerce and, in some areas, farming by irrigation. During the 20 years after the Civil War, settlers came in increasing numbers to the Big Bend of Texas, spurred on by the arrival of the Southern Pacific Railroad in the northern section of the Big Bend and the discovery of the Shafter Mine near Presidio in 1894. Sometime during or immediately after World War I, the Big Bend economy began to pale. After about 100 years of survival of the fittest, the last settlers, homesteaders, miners and cattlemen finally left the Big Bend when the Federal Government was given control of the land as a National Park in 1944. Their attempts at survival have left many marks upon the land, and a history often involving hardship and violence which is not

OF TEXAS

by CHARLES GARRETT



Since they are protected by law in the Big Bend National Park, mule deer such as these often can be seen from the road. They seem to realize they are safe, and will often "pose" for pictures. Color photo by author.

found in other desert areas of the United States.

The story of Big Bend survival is not limited to the efforts of the American settlers to exist in a land of long distances and short water supplies, while warding off the attacks of Indians. Survival in the Big Bend actually began with the Indians trying to survive, thousands of years ago. They starved and died of thirst and were killed by other tribes of Indians long before the first Spanish explorers entered the area in 1212 A.D.

The Indians and the Spaniards left their mark on the Big Bend country as well as did the American settler. Holes worn deep into solid rock mark the Indian campgrounds where the women pounded the roots of cacti into a paste-like food. The ruins of Spanish missions mark the efforts of this exploring race to bring civilization into the near Del Rio, Texas. Some people have area. Man's violent struggle for survival lasted well into the 20th Century. As late as 1918, Mexican revolutionists, who had fled across the Rio Grande, were warring with the American citizens and lawmen of the Big Bend area. From the north came outlaws, cattle rustlers and murderers seeking a country with few residents and many places to hide.

In reality, the land itself is in a battle for survival, and has been for thousands of years. For the most part, the plants that grow in the Big Bend are sharp and spiney or covered with thorns. Otherwise, they would be devoured by the animals who constantly forage to find edible plant life. The tender grasses of the area used to support antelope, but overgrazing during the years of the white man's cattle and sheep business, as well as worsened erosion and land deterioration, have forced the antelope further to the north.

The fight for survival in the Big Bend continues even to this day. It is a battle to assure the continued existence of the area as a primitive desert where mankind can look at nature unchanged over thousands of years. At a cost of millions, the State of Texas purchased 1,100 square miles of land and then deeded it in 1944 to the Federal Government to be maintained as a primitive wilderness area. Today, the struggle for survival involves protecting the land from the thousands and thousands of tourists who visit the park each year.

Although the area designated as a National Park covers more than 700,000 acres, the Big Bend, as described by historians and geographers, covers the entire southwestern portion of the State of Texas, bounded on the south and west by the Rio Grande River and on the east by the Pecos River. The northern boundary is also formed in part by the Pecos River as it wanders out of the State of New Mexico then turns east for hundreds of miles, then turns south to eventually join the Rio Grande River

tried to call this area "The Trans-Pecos Region," but that name, although technically correct, does not have the emotional qualities necessary to describe the Big Bend. There are plenty of people who will not give you exact boundaries for the Big Bend. They will say, "When you feel like you are in the Big Bend, you are in the Big Bend." They are expressing their knowledge that the area is unlike any other desert in the world.

The Big Bend traveler today need not fear the rugged terrain and hot, dry climate as did the early explorers and settlers, as long as he understands the basic rules of desert travel. Well-paved roads will take the tourist to many points of historic and scenic interest. The back-country roads maintained by the National Park Service allow properly equipped motor vehicles an even greater range of exploration. These back-country roads are listed as suitable for all vehicles, or for four-wheel-drive only. When the roads become impassable, they are closed to traffic. For the Big Bend visitor who loves to feel the earth underfoot, the Park Service has established many trails ranging from casual walks to advanced hikes. And, by obtaining a campfire permit and informing the Park Rangers where you will be camping, trips into the unmarked, unchanged areas of the park are available for the experienced and properly equipped backpacker.

Without special permit, overnight camping is allowed only in two campsites: the Chisos Mountain Basin and the Rio Grande Village. Both have gas stations, campgrounds, trailer facilities, fresh water and supply stores, but each offers a different atmosphere.

The Rio Grande Village campsite is located on the edge of the Rio Grande River in a grove of sheltering trees. The Chisos Basin campsite is located at an elevation of 5,400 feet above sea level, providing cooler nights which are free from the mosquitos found in the Rio Grande Village on windless evenings. The Basin campground also has a restaurant for those who like a break from cooking chores, and horseback trips are available year-round through the Chisos Basin Remuda.

The Park Service has established four motor vehicle tours, allowing a tour of several hours or several days. Pamphlets outlining the motor tours, backroad tours and hiking trails are available at many locations in the National Park area. The tours provide a Big Bend experience which includes vast scenic beauty, nature studies of plant and animal life, a wide variety of geological formations and a great wealth of historical information concerning the Indians who, for untold centuries, roamed the badlands of the Big Bend, the Spanish explorers who occupied the territory long enough to establish religious missions, and the Americans who pioneered the settlements, of which remains can be found today. The "tours" are merely maps and plans for you to follow as you please and at your own speed. To see all that is beautiful and historically interesting would take years.

The Big Bend traveler who takes the time to thoroughly enjoy his trip soon learns that the history of this rugged land demands as much attention as the beautiful sights. In this country, the trails of history are today's roads. As you take the Big Bend tours, you realize you are traveling in the same steps as the Apaches, Comanches, Conquistadores,

Many graves mark the landscape of the Big Bend country. Although the names and dates have weathered away on many markers, the grave sites are carefully maintained by the National Park Service.

The author, Charles Garrett, is shown in his favorite vacation and exploring area, the Big Bend of Texas. He is searching for an old bottle dump at a ghost town site west of Terlingua, several miles from the National Park boundary.

cattle rustlers and American pioneers. These early travelers did not strike a trail on the basis of the shortest route; their paths were the only way to get across or between the mountains. Today, with a very few exceptions, the roads follow these old trails named: "Comanche War Trail," "Treasure Trail," and "Contrabando Trail."

As you travel these trails, passing mountains, valleys, dry washes and other landmarks, you will discover that they have often been given names referring to disastrous events or people who died there. Dead Man's Curve, Bone Spring Draw, Calamity Creek, Robbers' Roost, Ernst Gap, Butcherknife Hill, Cow Heaven and Dead Horse Canyon are a few examples. Other names were first given and remain today on the basis of resemblance. Boot Canyon, Elephant Tusk, Mule Ear Peaks—all look like their namesakes.

As a professional treasure hunter, I enjoy exploring these places of historical significance, discovering in long-lost locations the evidence of man in years gone by. It must be remembered, however, the collecting of relics, artifacts, or, for that matter, rocks, plants or animals is forbidden by the National Park Service. As a treasure hunter, I applaud these regulations since I learned long ago that treasures do not have to be collected and taken home to be enjoyed. To locate the grave of an ancient Indian chief and to return to the undisturbed site years later can provide tremendous enjoyment. While near his grave, a person may pause and try to visualize life in the Big Bend as it existed during his lifetime. To realize that his grave is still unmolested is very comforting during our times of rapid social change and ecological crisis.

Stories, legends and folklore surround the scenic beauty of the Big Bend country. The legend of a lost silver mine, missing since the early days of the Spaniards, has given the name "Lost Mine Peak" to the second-highest mountain in the National Park area. According to the old stories, if a person on Easter Morning stands at the ruins of the Mission de San Vicente, across the river in Mexico, he will see the first rays of light fall directly on the mine entrance.

More recent is the story of the old ore lift. In operation from 1909 to 1919, the system of cables, towers and ore buckets transported silver, zinc and lead ore more than six miles from the Corte Madera mine in Mexico to the U. S. terminal, located near Ernst Canyon. The 90 iron buckets were capable of carrying more than seven tons of ore per hour. The remains of the ore lift terminal, cables and some of the buckets can still be located in the area near Boquillas Canyon and in Ernst Canyon (named after M. A. Ernst, an early settler who was killed at this location).

Also located near Ernst Canyon is the Big Tinaja. Pronounced *ten-ah-ha*, the word in Spanish means "large earthern jar." Carved into solid limestone, the "big jar" and several smaller ones hold water long after the occasional rains and flash floods have been quickly absorbed by the thirsty desert. In times past, all animals came here to drink, as did man. On the side of the *tinaja* is a metal ring installed almost a hundred years ago by U. S. Cavalrymen. By tying a rope to the ring, the soldiers could climb in for a swim and then climb out of the deep hole.

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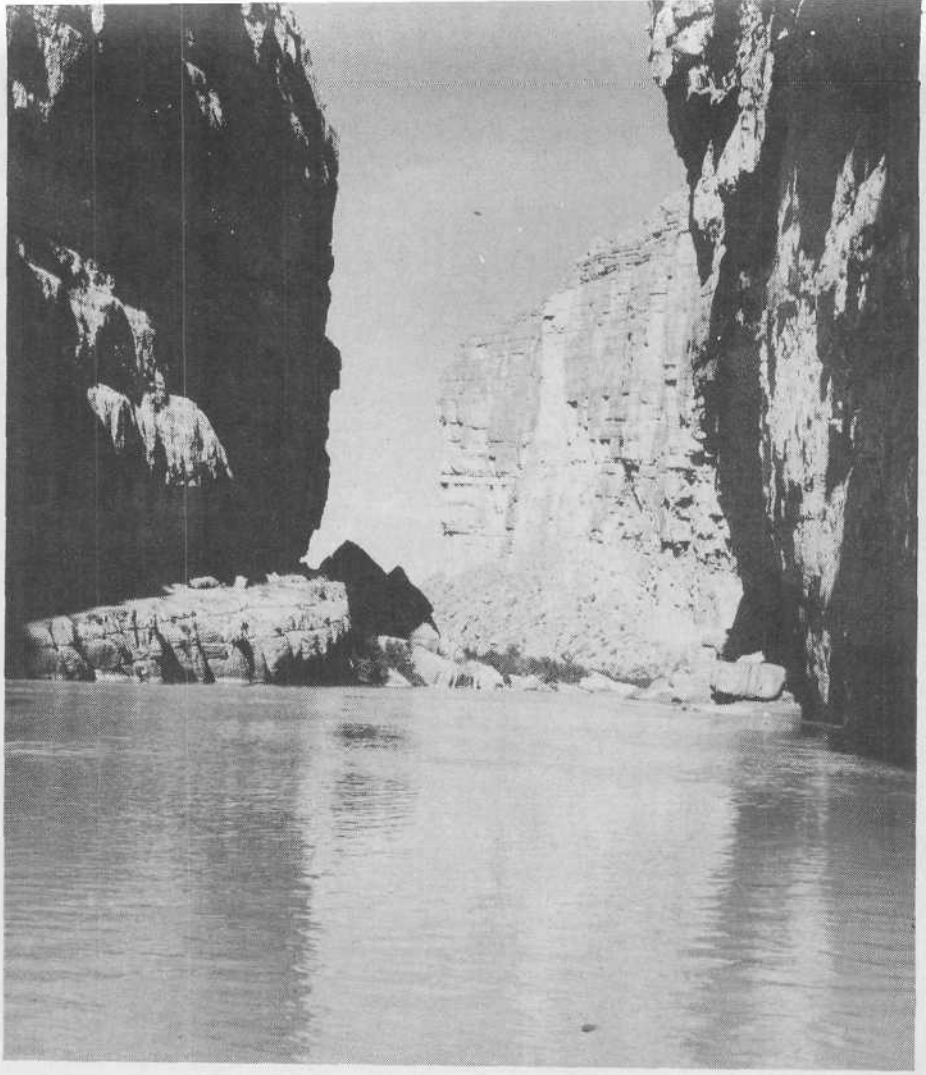


Big Bend National Park is famous for its desert, mountains and river canyons. Perhaps the most famous canyon is Santa Elena, in the western end of the park. In this view of Santa Elena Canyon, the left wall is in the United States and the right wall is in Mexico. Photo courtesy of National Park Service.

Dugout Wells was once described as the "cultural center of the Chisos Mountains." A schoolhouse and small settlement were located there, with the name coming from the construction of the first residence: a hole dug in the ground and covered with wood and then dirt. Today, Dugout Wells is used as a picnic site and is surrounded by high grass, bushes and wildflowers, nourished by the water that still flows from the spring.

If you are situated at Dugout Springs when dawn breaks, you can often catch a glimpse of the wildlife native to the Big Bend. If you are quiet and patient, you may see mule deer, coyotes and javelina. Pronounced "have-a-lena" and also known as the Collared Peccary, this animal is the only member of the pig family native to North America. Present, but not often seen, are mountain lions, gray fox and bobcats. A great variety of birds also gather at Dugout Springs and other waterholes during the hours of dawn and dusk. All game in the Big Bend National Park is protected by law and, through the proper management of land, the grass necessary for the survival of the antelope and other large mammals is returning to the once barren ground. It appears the antelope are returning to their former home in the park area. More and more antelope sightings are being reported, and a few young have been seen.

The promise of an economically stable society did not come true for the Big Bend country, nor for the enduring people who believed such a promise ever existed. But today, the beauty, legend and history of the Big Bend are as endless as the expanse of desert territory itself. Each and every day of its past and every square mile of its territory give the promise of a different story to hear or a new sight to see.

There is only one caution about visiting the Big Bend. If you become involved with its fascinating past and its undisturbed beauty, a part of you will always long to return. □

Desert Plant Life

by JIM CORNETT

EVEN PERSONS normally uninterested in wildflowers fall in love with this plant during spring. The Hairy Sand-verbena (*Abronia villosa*) often forms thick carpets in many desert localities. The rich rose-purple hues stun all onlookers regardless of tastes.

Winter rains are required to bring out this low-lying annual in all its grandeur. Sparse and erractic precipitation may bring forth a few plants, but several inches must fall before the lavender fields arise. As the moisture sinks into the ground, the dormant seeds take in some of this water readying themselves for the onset of warm weather which stimulates germination. If conditions are favorable, the new sprout will break through the sandy soil and begin creeping along the ground. Soon, the xerophyte (plant adapted to arid conditions) will have stems leading in several directions, each of them hugging the ground quite closely.

Botanists call the Hairy Sand-verbena a drought avoider. As May approaches, the plant dries up leaving only its seeds as a reminder of its presence. The seeds, not the plant, withstand the hot, desiccating summer days. Thus, the plant itself actually "avoids" the arid conditions, growing only during the comparatively cooler spring months when ground moisture is still present as a result of winter rainfall.

The verbena is a member of the plant family known as *Nyctaginaceae*. This is quite a mouthful so perhaps it is best to remember the English equivalent, "Four-o'Clock." Unfortunately, this plant is not a true "verbena." Its common name is a misnomer in that the true verbenas are of a completely different family known to scientists as *Verbenaceae*," an appropriate designation. There is some resemblance between a few members of both families, but there are also many differences. Most notable is the fact that in the Southwest all members of the true verbena family are perennials whereas the Hairy Sand-verbena is an annual.

You won't have to search long to find this plant each spring. Any creosote-dotted basin with lots of wind-blown sand is sure to have at least a few of these flowers adorning the countryside. □

Desert GHOSTS by HOWARD NEAL

Jerome, Arizona

LOCATION: Jerome is located 33 miles northeast of Prescott, Arizona, on Highway 89A which connects Prescott with Flagstaff via Sedona and Oak Creek Canyon.

BRIEF HISTORY: The first mining was done in the foothills of Mingus Mountain nearly 1,000 years ago. Indians, who made their home in the Verde Valley, mined blue azurite and used the ore to make dyes, paint pigments and trinkets. By the time the Spaniards came through northern Arizona in the 16th Century, the Indians had made quite a dent on the mountainside. But the Spaniards were seeking gold, and the Indian mines did not interest them.

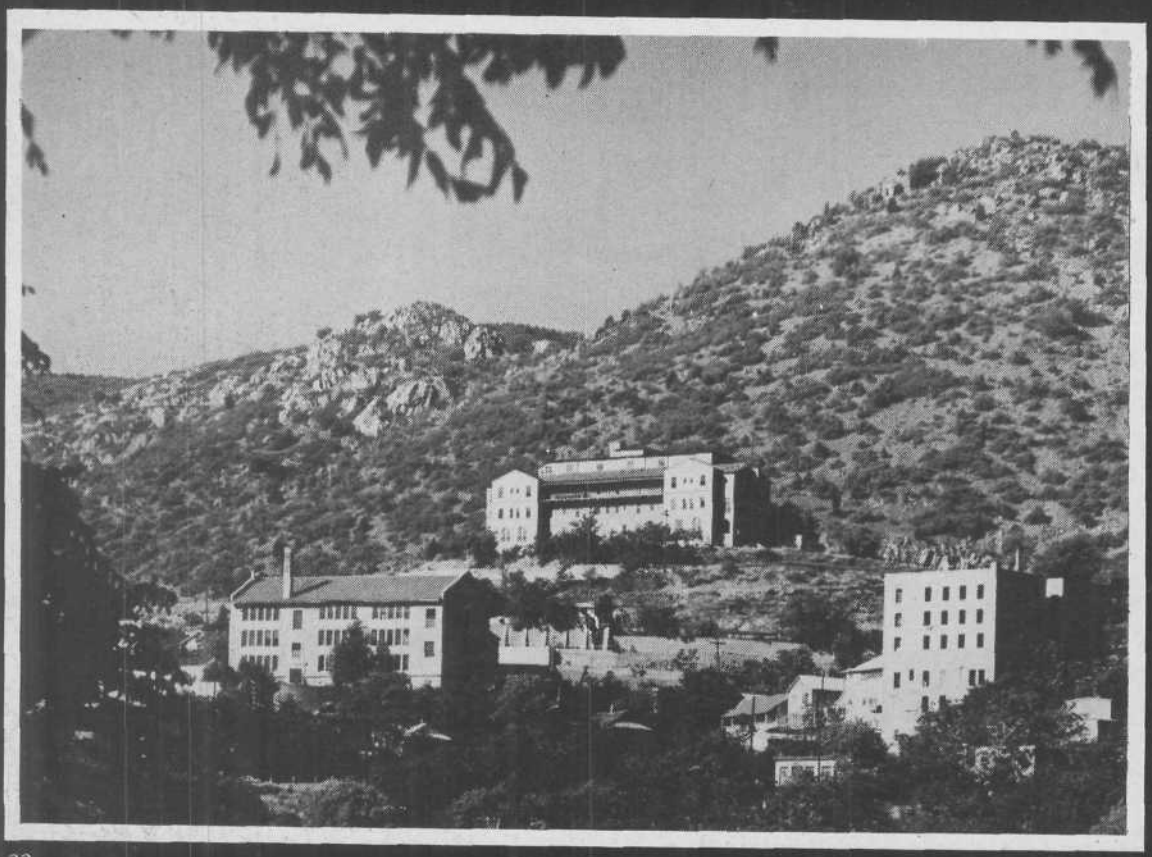
In 1876, the outcroppings did interest another man. His name was Al Sieber, and he was an Army scout. Sieber staked the first claim on what would become known as Cleopatra Hill, a hill which, in the next 77 years, would yield more than a billion dollars in copper, gold, silver and zinc.

That same year, at Sieber's suggestion, Angus McKinnon and M. A. Ruffner also filed claims and started a mine. When they had sunk a shaft some 45 feet, they decided that they had better sell before the vein pinched out. The buyer was Arizona's Governor Tritle. In 1882, Tritle started the United Verde Copper Company and set up extensive mining operations.

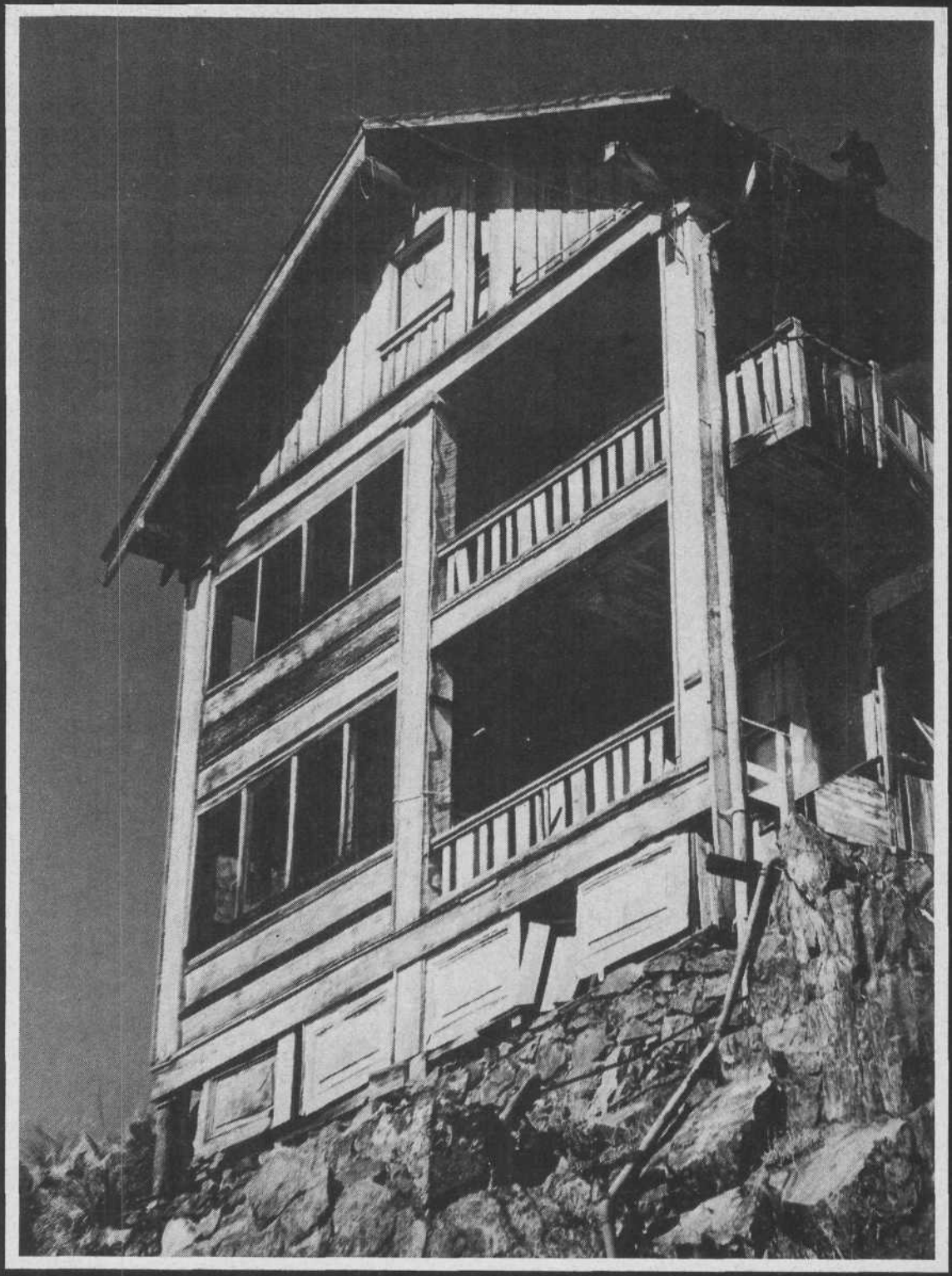
Tritle did not start United Verde alone. He had the help of eastern financiers. One of these was Eugene Jerome who insisted that the mining camp be named for him. His money was used, but he never set foot in "his" town.

When United Verde stock was sold to the public, a Montana mining man named William A. Clark became a very eager buyer. By 1888, he had control and he was running the company well. Under Clark's direction, the United Verde was a bonanza. There was enough gold and silver in the ore to pay expenses, and the copper was pure profit. Clark, later Senator from Montana, became one of the real giants of western mining.

There was more than one bonanza at Jerome, and another mining giant, James S. Douglas, discovered one of them. He calculated that the Verde Fault had caused the prime ore body to slip and that the small claim known as the Little Daisy, down the hill from the United Verde, should be rich. He was right. At the 1500-foot level the vein was found.



Three buildings dominate the skyline of Jerome. The Clark Street School [left] was vacant until 1972, but is now being made into an art center. The United Verde Hospital [top] and the once luxurious Jerome Hotel [right] are now abandoned.



Once palatial homes and apartments, now abandoned, perch precariously on the 30 degree slope of Cleopatra Hill, the townsite of Jerome. Since a dynamite blast in the open pit mine in 1925, the town has been slowly slipping down the hill.

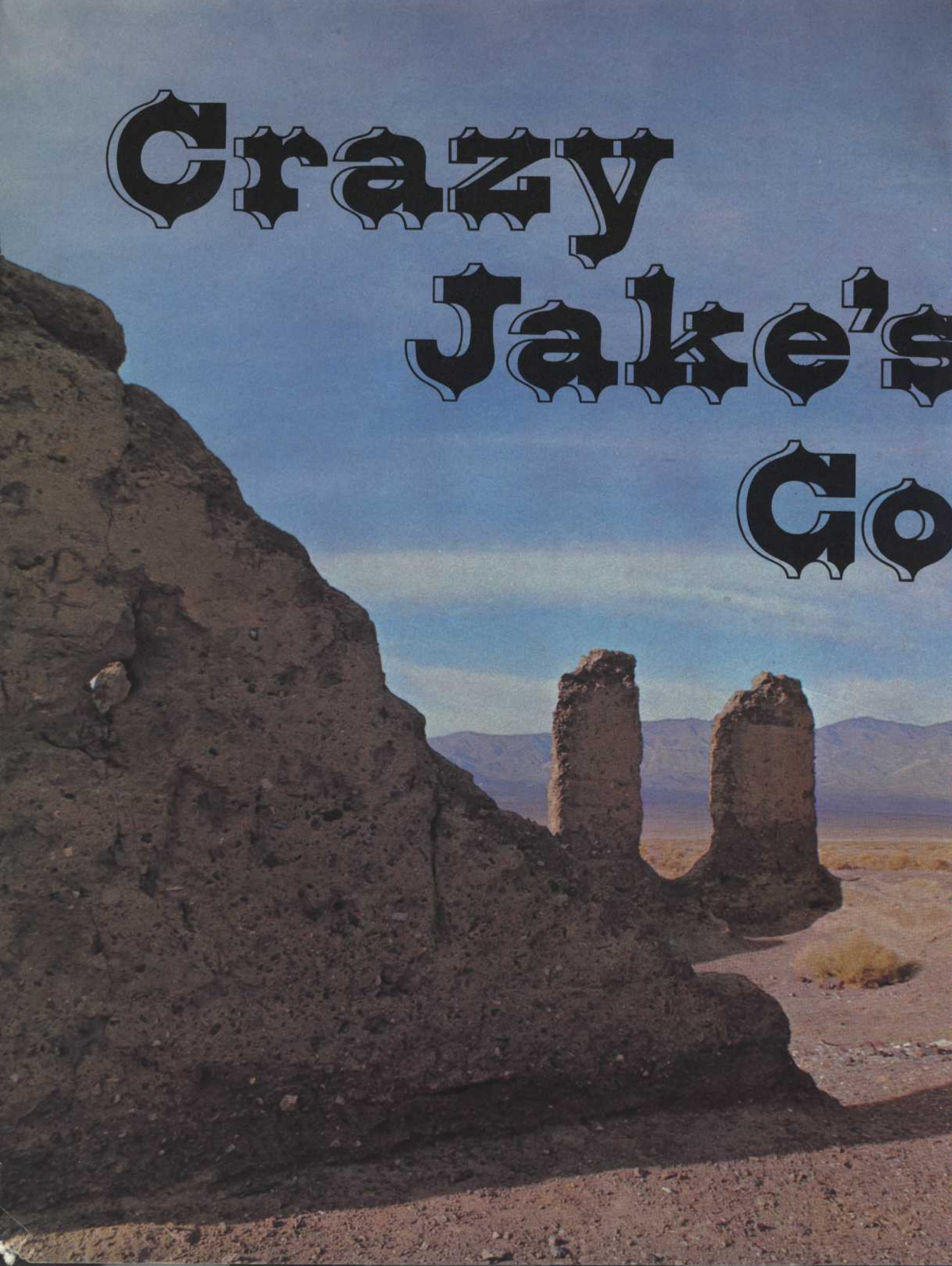
More than $125,000,000 had slid down Cleopatra Hill from the site of the United Verde!

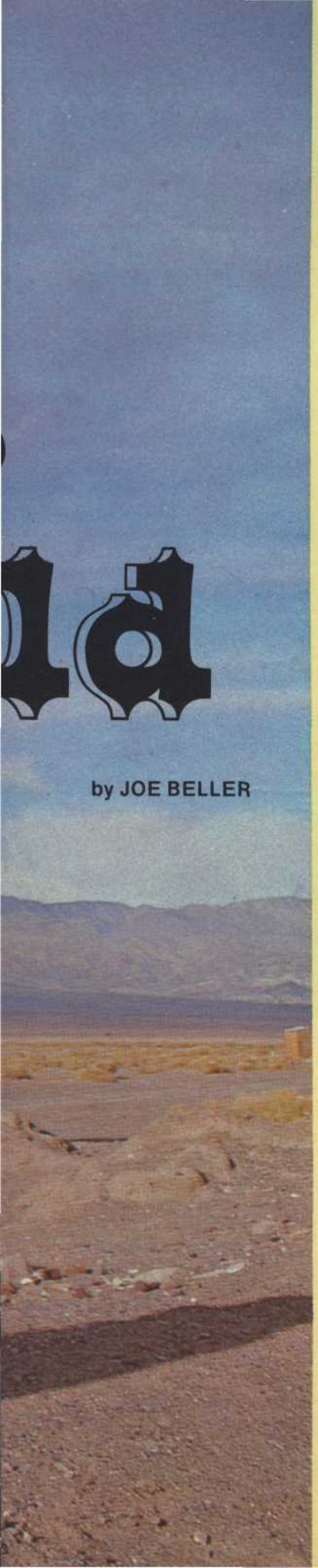
As the United Verde and the Little Daisy succeeded, so did the mining camp. Jerome was incorporated in 1899 as the fifth largest city in Arizona and at its peak, in the 1920s, knew a population of more than 15,000.

Of course, Jerome had its saloons, stores and homes, as did every mining town. Jerome, though, had more. It had wealth, wealthy people and the symbols of class. For more than 50 years, with its posh mansions and fancy hotels, Jerome was a *real* city!

JEROME TODAY: The last mines were closed in 1953 and, by 1960, the population of Jerome had dropped to 243. Lately, though, the community (now billed as "The Largest Ghost City in America") has become an artist's colony and a major tourist attraction. The old Douglas mansion has been turned into a State Historic Park, the town of Jerome has been named a National Historic Park and the population is up to above 300. Today, the charm and history of Jerome are attracting thousands of visitors yearly to the museums and shops of a desert ghost which was once called "The Most Unique City in America." □

Crazy Jake's Co





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by JOE BELLER

Here's a tale of campfire tales, that leads to a bonanza of sorts and the key figure is Seldom Seen Slim, that old "single blanket" prospector from Ballarat, California.

ONLY A handful of the old-time prospectors who were lucky enough to strike it rich lived out their lives in luxury. Many, it is recorded, fell victims to glib-tongued mine promoters and sold what later proved to be valuable claims for a few paltry dollars or a couple of kegs of "snake eye whiskey." The majority were quickly relieved of their pokes in the saloons that lined the streets of boom camps which erupted from the soil wherever a new strike was reported.

Legends concerning those who trudged the gold trail during the West's early days would fill a good-sized journal. Varied accounts of Arizona's Dutchman, Adams, and California's Pegleg have been told, re-told and so overly embellished with each narration that the real facts relating to these old-time sourdoughs and their fabulous lost lodes now lie buried so deeply under the "gang rock" of myth and speculation that the actual truth may never be known.

Due to a romantic nature, we still wish to retain faith in these wondrous tales—tales which can be heard around any campfire wherever a few "desert rats" gather to trade yarns about the old days, of big strikes (almost found) and the breed of men who roamed the unpredictable wastelands of the southwest in search of the "golden mirage."

It was in the setting of such a campfire, flickering amid the skeletons of Ballarat, California's decaying ruins, that I heard the interesting saga of one of these desert prowlers.

The crumbling walls of a Ballarat building where the story of Crazy Jake's gold began. Photo by Edward Neal.

We had spent almost an entire day exploring what remains in the ghost town of Panamint, located high in the mountains bearing the same name. It was late afternoon when we descended the narrow-treacherous trail down Surprise Canyon, and arriving at the one-time supply town of Ballarat, made camp close to an old adobe building said to have housed Shorty Harris of Rhyolite and Bullfrog fame.

We had often visited the deserted camp in the years prior to this account; long before the spoilers found it to make their indelible mark of vandalism on its historic structures; smashing what would crumble and torching whatever would burn.

Ballarat was never really entirely deserted. It had always boasted a population of one. That one was a prospector known about the Death Valley region as "Seldon Seen Slim." Slim, whose real name was Charles Ferge, a loner by choice, lived in an abandoned house trailer at the far end of town.

Making his debut in Ballarat about 1917, the same year the camp was singing its swan song, Slim said he "liked the lay of the land" and decided to hang around a few days. The days quickly turned to months and the months to years (50 in all), yet Ferge stayed on. "Where else," he once remarked, "can I go where I can own a whole damn town?". Slim enjoyed his lonely existence with only a couple of burros and the ghosts of Ballarat's past as company. He was the town's mayor, marshal and fire chief all rolled up in one. He let it be known to all that ventured to this out-of-the-way place that he didn't care for "- - - - - - tourists" nosing about "his town."

Perhaps because of my frequent visits to the camp, Slim finally began to toler-

"Seldom Seen Slim" [Charles Ferge], the last of the "one blanket" prospectors.

ate my presence, even grunting a "howdy" occasionally. He spoke when he felt like it, which wasn't often. I found, however, that a pack of iced beer could often loosen his tongue. During our brief discussions, I also learned that Slim was undoubtedly the most adept prevaricator ever to venture into the area. His fables, made up of whole cloth, would put to shame the imagination of Baron Munchausen himself. Slim's yarns seemed so convincing that it is said that he once had veteran treasure hunter, Frank Fish, combing the hills as far north as Rawhide, Nevada, in search of an imaginary "buried stage robbery loot."

Slim was not the rough, cantankerous cuss that he appeared to be. Those who knew him could easily sense the humorous imp that lurked deep under that sun-baked hide of his. Slim's pleasures were few; his greatest enjoyment was derived when he could entice an unsuspecting "city dude" to scurry across the desert and several mountain ranges in search of some non-existent treasure trove. This is precisely the scheme that the old rascal had in mind for us that evening he stepped up to our camp at Ballarat.

Whether it was the sound of popping beer caps or the odor of frying steak that lured him over has not been determined. What is certain is that Slim was in one of his rare jovial moods, and we were delighted when he accepted our invitation to join us.

He didn't say much for a while, just sat around puffing on that old corncob pipe of his and bending an ear to our conversation. Finally, after his fourth beer, Slim wiped the back of his hand across his whiskered face and asked, "You people ever hear 'bout Jake Staub that used to hang 'round these parts a few years back?"

We glanced at each other inquisitively. The name did not ring a bell. "No," we concluded, "we never heard of him."

We should have been on our guard and realized that Seldom Seen Slim was about to unleash one of the fabulous fables concerning the life of one who lived only in Ferge's own mental world of magnificent imagination.

"Well," he said, "it all started back in the early twenties. I was standin' outside my place one mornin', just looking around when I sees somethin' or somebody in the distance comin' towards town. It was too far away to make it out and too damned hot to go and meet it, so I just figured I'd wait here in the shade 'til it got closer.

"Must have been an hour or maybe two later when this prospector wanders in kickin' along a burro that looked as old and scraggly as he did. The old man had long hair and a beard as white as the snow up there on Telescope Peak.

"There weren't too many people comin' around in them days," continued Slim, "so I told him if he wanted to hole up here for awhile it was all right by me. There used to be a saloon over yonder," Ferge said, pointing a finger down the wide dusty street. "I figured that was as good a place as any for him, so the old galoot booted the burro in that direction and I just followed along to keep him company.

"As he was pullin' the pack off the critter, he told me his name was Jake Staub and said he'd been followin' the big strikes all the way from the Yuma Placers to Randsburg and was on his way to Panamint. Hell, I says. There ain't nuthin' left up there. Them old mines been worked out years ago. You'll just be wastin' your time.

"Jake didn't say no more about it. He just kind of snorted and went on unpackin' that jack of his. But the more I talked, the more he looked at me and snickered.

"Well, by that time, I was gettin' mighty mad—him laughin' in my face like that. So, after tellin' him to go to hell, I stomped out."

Slim stopped for a few moments and gazed into the glowing embers of the campfire as if to collect his thoughts. After taking a couple of draws from his cold pipe, he continued his story.

"I didn't see hide nor hair of Jake the next day, but did notice his jack nosin' 'round behind the buildings, so I figured the old man couldn't be far off.

"Three or four days later, I was gettin' back from Trona with some supplies and was goin' up Main Street when I saw that burro standin' by the saloon, curlin' back lips and bellerin' his fool head off. I can tell you by experience that them canaries generally show more sense than

humans, and I was beginnin' to think that somethin' might have happened to Jake. Not that I cared much for him, but I was scared if he died I'd have to bury him, and this ground around here is harder'n a rock—besides, it was too hot for that kind of work. Anyway, just to satisfy myself, I walked over to his shack and stepped inside.

"He was in there all right, hunkered up on the floor and stuffin' some small leather pouches in his pack. I figured right off that there must have been somethin' mighty valuable in them pokes 'cause the minute Jake saw me standin' there, he stared at me wild-eyed and crazy-like, then pulled out a horse pistol and told me to get the hell out. Well, I ain't lyin' one bit when I tell you that barrel looked as big as a stove pipe, so I eased on out of there and run like blazes.

"I stayed awake all that night, peerin' out of the window and checkin' to see if Crazy Jake was sneakin' around tryin' to put a bullet in me.

"He must have lit out durin' the night 'cause he was nowhere around the next mornin'. Chris Wicht, who used to have a cabin a little ways from here told me he saw the old man early that day makin' his way into Surprise Canyon.

"He stayed in a rock shack about half way up the trail. Me and Chris could see smoke comin' from that old place from time to time. Jake must have hung around up there for a couple of months or more, then one day he ups and disappears. We never knew at the time what he was doin' there or where he went." Slim's tongue-in-cheek yarn became more and more improbable sounding as he continued, and it was apparent as the story progressed that he was doing his best to goad us into taking another trip up Surprise Canyon.

"About six months later," Slim went on to say, "a fella' came through and said that the body of an old man with white hair and beard was found near Badwater. I think it was Crazy Jake's corpse just sure'n hell."

"I always figured that Jake planted them pokes somewhere around that shack up there for safe keepin' and was plannin' on comin' back after 'em, then probably went out to do a little prospectin' and dropped over dead in the desert. After that I done quite a bit of diggin' around his shack, but was never able to find anything."

Slim pointed his pipe stem in the direction of our metal detectors. "Bet if you fellas took them contraptions up there, you might be able to locate them pokes. I'd sure try it if I were you."

Ferge, having finished his story, got up, stretched himself, thanked us for the beer and walked off. He had tossed out the bait—now he would sit back and see if we would swallow it.

It was doubtful that there was even one speck of truth in Slim's yarn. We knew that he was an expert spinner of tall tales, but to concoct a "whopper" that convincing, especially on the spur of the moment, was an unbelievable feat in itself.

We talked it over and decided as long as we were in the area, and there was a chance that the leather pouches did ex-

Surprise Canyon—steep grade leading from Panamint to the Valley floor near the site of Crazy Jake's gold.

ist, we would try our luck at locating them.

The next morning we trudged back up Surprise Canyon, stopping at the ruins of an old stone cabin about midway between Panamint and the valley floor. The dilapidated and roofless dwelling matched the description given to us by Slim as that used by Jake Staub. It was built into the side of a high bank which also served as a back wall. After cleaning the loose debris from the building, we tossed down our sleeping bags beside the rock walls, then proceeded to search the surrounding area with the detectors.

Almost immediately the machines were buzzing like bees around a hive. But furious digging netted nothing but sheets of corrugated tin and rusted cans. Slim was well aware that this would happen. He had purposely directed us to a place he knew would drive a metal detector off its peg and us out of our minds. We had to face it, we had been taken in by that ancient desert rat, who was probably now sitting in his trailer and laughing his head off. We could almost hear Slim's cackle drifting across the sand-covered floor of Panamint Valley.

A thorough and systematic search of the adjacent foundation yielded the same bits of sundry junk and broken bottles. Later, however, we unearthed an opium bottle and a Chinese coin which further confirmed the belief that we were on the site of an Oriental encampment. Although these relics made the trip worthwhile and could be considered valued additions to any treasure seeker's collection, the point remained that the find was not gold and would be frowned upon as so much junk as far as Slim was concerned. The search then continued until almost dark, but still no bags of precious metal sang out under the looped heads of our detectors.

That evening we sat around after supper wondering how we could get even with Seldom Seen Slim for sending us on this wild goose chase. It was certain that Ferge would be waiting to give us the horse laugh when we returned to Ballarat empty-handed. Our only hope was to find something worthwhile or be the subject of Slim's ridicule for years to come.

Next day found us some distance above the Chinese camp where several more partial foundations dotted the rocky ground. Again the search resumed without success. We decided to call it quits, admitting that we had been hoodwinked by Slim.

Descending single file down the inclined trail, we arrived at a point about one hundred yards below our first camp when I noticed a portion of rusted tobacco can protruding from the ground. For the sake of nothing else to do, I drew back my foot and booted the old piece of tin from its grave and sent it tumbling several feet from the footpath.

We all stopped and stared in disbelief, for suddenly the ground glowed in a yellow shower of gold nuggets which had funneled from the time-rusted container. Rushing over, we retrieved the can which still held a plentiful amount of gold, plus some rotted pieces of cloth resembling canvas in texture.

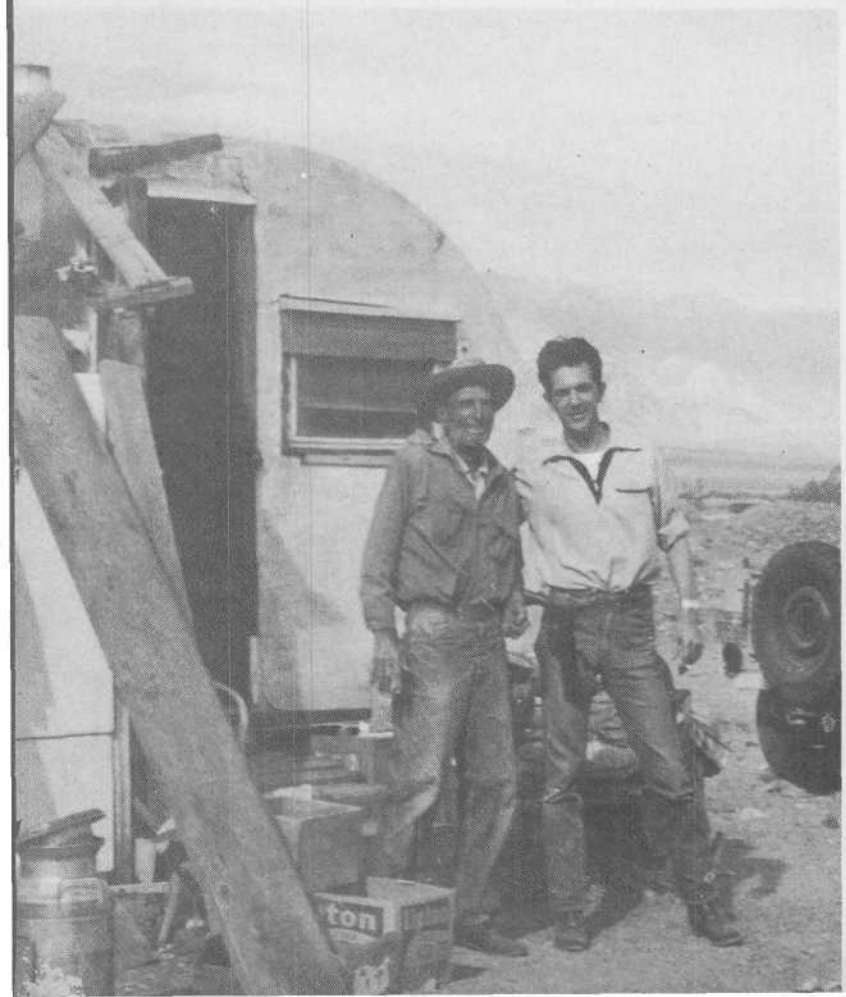
Crawling about on our hands and knees, we went excitedly about gathering up the larger of the nuggets. The smaller particles wormed their way into the sand as we tried to grab them, so arming ourselves with garden trowels and tin plates we scooped up the loose dirt and deposited it onto a blanket spread out over the ground.

Hours were spent brushing the sandy soil over the surface of the blanket, and by nightfall we had recovered 397 nuggets, ranging from the size of one's thumbnail down to small course-gold specks.

We attempted to arrive at a reasonable solution for the presence of the "yellow iron." As far as could be determined, Panamint's prosperity was founded on hard rock silver mining and no account of "free" gold being located there has been recorded. The closest placer field was at Randsburg, many miles to the south where at the famous "Yellow Aster" mining had been carried on until the early 1940s.

But how did the can of gold come to be buried half way up the steep grade of Surprise Canyon? Was it possible that such a person as Jake Staub had actually existed? This appeared doubtful. Conceivably, it may have been the property of one of the Orientals who had worked the dumps around Randsburg, then eventually migrated into this canyon. Several other theories also passed through our minds, but to this day the real answer to the question remains a mystery.

As expected, Slim was sitting in front



Seldom Seen Slim and the author by the old prospector's trailer with the Argus Mountains in the background.

of his trailer watching us as we approached.

"Where you fella's been?" he called out. "I thought you might have got lost up in them mountains."

We purposely took on an air of dejection in anticipation of his next query. We knew exactly what he was going to ask and the question was not long in coming. "Didn't happen to find Crazy Jake's pokes, did you?"

Ferge was chuckling audibly and we allowed him to enjoy the joke a while longer before administering the "coup de grace" to his humorous mood.

"No, we didn't find any leather bags of gold, but we did find this can full," I replied, pouring the yellow metal into the palm of my hand.

Slim looked as if he had been pole-axed. His mouth dropped open and his face turned pale under his tan. For once in his life he was at a loss for words and it seemed like an eternity before he was able to catch his breath, then mutter, "Where in hell in you find that?"

"Why, Slim," I said, trying to appear unconcerned, "we went exactly where you told us and just dug it up next to Jake's shack."

Seldom Seen Slim was at last getting his just desserts, and unable to verbally retaliate, mumbled something to himself, turned on his heel and stalked into the trailer, slamming the door in our faces.

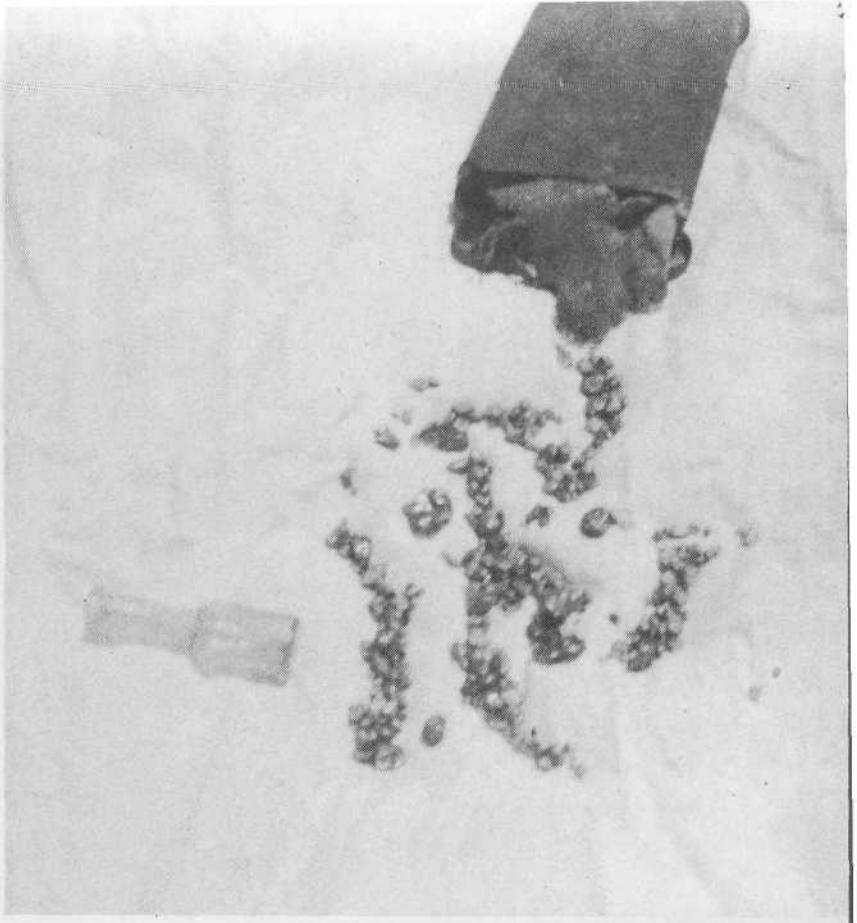
We had in our possession several extremely high grade ore specimens found at Colorado's Camp Bird Mine many years before. My partner strolled over to the camper, took out the samples, returned to Slim's and pounded on the door.

"What in hell do you want now?" came the gruff response.

"Wonder if you'd come out and take a look at some rocks we picked up," my partner asked politely.

Slim reluctantly pushed open the door, stepped outside and grabbed the pieces of ore. Playing the "dumb act" up to the hilt, I asked him if the rocks contained any gold.

Slim's teeth almost severed his pipe stem in two as he stared wide-eyed at the stringers of gold snaking through the snow white quartz. He was obviously shaken by the sight of the high grade, but managed to cover his true feelings. He hefted the pieces of ore a few times and handed them back.



Nuggets, tobacco can and bits of cloth bag with the small opium bottle found in the rubble of an old shack in Surprise Canyon.

"Nope, that ain't gold, that's nuthin' but brass. There's lots of it around here."

Brass??? He had delivered the crowning touch, a lie to end all lies. We had to bite our tongues to keep from laughing aloud. Slim hum-hawed a bit, and still staring at the specimens, finally asked, "Where'd you scratch up that junk?"

I pointed toward a slash in the Slate Mountains to the south. "Do you see that arroyo down between those hills?" I asked. Slim shaded his eyes with his hand and confirmed that he could see the place. "Well," I continued, "we hiked in there about a mile, then turned to the right up a steep grade. There's a flat spot up there and the whole ground is covered with these white rocks."

"Yup, that's just where I thought you'd say," lied Ferge. "That's where that old brass mine is all right. Fact is, I used to have a claim over there myself a few years back, but I let it go 'cause I found out the stuff wasn't worth the trouble to dig it. Ain't much market for brass no more."

Still carrying on the charade, I turned to the others and remarked that it would be a waste of time to go after any more of the quartz. After all, hadn't Slim assured us that it was worthless? To this the Ballarat prospector heartily agreed.

Later that day we congregated inside of Shorty Harris' old house and watched unseen as Slim tossed some gear into his Jeep. After a few minutes, Ferge, guiding his "four-wheeled burro," roared off in the direction of the Slate range, leaving a cloud of dust in his wake. We, in turn, packed our camper and drove on to Goldfield, Nevada.

We never knew how long Slim may have searched for those "white rocks" until the truth finally dawned on him tht he had been duped by a bunch of "city dudes." What is certain is that Slim was still mad as a hornet when we returned to Ballarat six months later; for when we stopped and knocked at the door of his trailer, he told us to get to hell out of "his town" and never come back. Nevertheless, we stayed around a couple of days, but Ferge refused to speak to us.

We never saw Slim after that. The old fellow died in 1968. His earthly remains are buried at his beloved Ballarat. I suppose his soul followed that of Breyfogle, Shorty Harris, Adams and the Dutchman who are probably spending most of their time in eternity exchanging "windies" across some celestial campfire.

Assuming this is true, I wonder if Slim ever told those other desert notables the one about Crazy Jake's gold or the brass mine in the Slate Mountains?. □

Slowly decaying miners' bunkhouse at Carson Hill. Photo taken in 1971.

EXCITING ACCOUNTS of early day gold mining ventures in the Mother Lode belt of California are many, but a strike of incredible richness, made in 1850 at the famous Morgan Mine on Carson Hill in Calaveras County, set off a veritable stampede of miners and sightseers to the location. The mining community of Carson Hill, one with a hectic history, resulted.

The fabulously rich claim was an end-result of the efforts of one Hance, an itinerant prospector prowling the then remote region, equipped with gold pan, pick and shovel. Panning and sluicing the gravels of a creek at the base of the hill for a time, he became curious as to the source of values found in the creek bed, and decided to inspect the slopes of the hill above.

Nearing the summit, he discovered, to his amazement, an outcropping of quartz heavily impregnated with gold. A few blows with his pick dislodged a chunk that tipped the scales at pounds—not ounces. Hance had discovered the rich lode and staked his claim on the north side of the hill.

The creek and hill above were named for James H. Carson, who had first worked the creek in 1848 with lucrative results. With a poke of respectable contents, however, he departed the lonely area, possibly in search of companionship of others, and Hance had been the next to try his luck.

Mining, in the earliest days of the gold rush era, consisted mainly in working the more easily accessible placer deposits of stream beds with gold pans, rockers and sluice boxes to recover nuggets and particles of gold from the sands and gravel, in abundance at the time. Americans, however, knew little of skills necessary, at that time, to develop a hard-rock or lode mine.

The old Romaggi House, built in 1852, at Albany Flat, California.

Hance, now faced with this problem, consulted with a Colonel Morgan, a prospector in the vicinity, concerning capital and help necessary for successful exploitation. Morgan and several others then became associated with Hance in a joint venture to be known as the Morgan Mine. Experienced hard-rock miners from Mexico were employed and operations started.

From Sonora, a comfortable stopover point on State 49 providing modern facilities, Carson Hill may be reached on the same highway, 13 miles northward through scenic country.

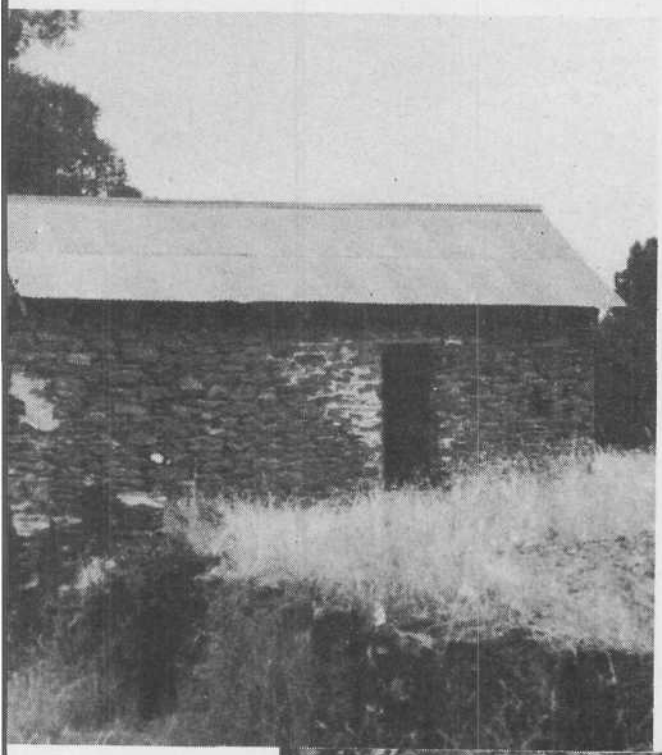
High on the hill above is the huge open cut of the famous Morgan Mine which, in its earliest days, produced $3,000,000 in two years. One blast threw down $110,000 in very rich ore known as "jewelry rock" in mining parlance. In 1854, the glory hole of this great producer disgorged the record gold nugget of California, second only to one found in Australia.

Weighing 195 pounds troy, and worth about $43,000 at the gold price of that day, the worth of such a piece in the world gold market of today is something to contemplate.

Continued on Page 40

CALAVERAS COUNTY'S CARSON HILL

by AL WATERMAN



Melones, site of Robinson's Ferry on the Stanislaus River in California's Mother Lode Country.

GRAND CANYON STAGE LINE

by RUSSELL WAHMANN

Eighteen-passenger bus in front of Bank Hotel, Flagstaff, 1895. Starting place, building still stands on corner of Leroux Street and Sante Fe Avenue. Photo—Northern Arizona Pioneers Historical Society.

ANYONE WHO has traveled to the Grand Canyon from Flagstaff, Arizona, may well have wondered what it might have been like to make the trip via stage coach. Traveling north from Flagstaff puts the traveler over the same route in places, and provides the opportunity to view the same pine and aspen forests seen by the stage passenger of 80 years ago.

Much of the old stage road is still passable if one is willing to get off the paved road and has a dependable vehicle with plenty of underclearance.

Flagstaff, unlike southern Arizona communities, has been made popular by summer temperatures in the 70's and low 80's. With 2500 motel rooms, it makes an ideal headquarters and starting place for reliving the trip to the Grand Canyon by stage.

The Canyon stage opened the way for a new social force on the western frontier—tourism. The establishment of a railroad across northern Arizona in 1882-83, and subsequently the creation of the town of Flagstaff, provided a base from which to reach the south rim of the Grand Canyon with relative ease. As early as 1885, stages were making trips to the Canyon and in May of 1892, under Santa Fe Railroad auspices, a tri-weekly stage line was permanently established between Flagstaff and the Canyon. Appropriately, then, Flagstaff should be the central place for today's tourist.

Ten miles north on US 180, turn right on the Hart Prairie Road. For the next five miles, the traveler will climb higher in elevation to approximately 8000 feet. In autumn, the golden aspen leaves produce a beauty which defies description. Across Hart Prairie, named for an early settler, we head towards Fern Mountain on the horizon. Just east of Fern Mountain was the first stage stop and relay station. This was Fern Mountain Ranch, or Dillman Ranch, run by Mr. and Mrs. Gus Dillman. It was 18 miles from the starting place in Flagstaff. Although only a relay station for the change of horses and not the scheduled stop, Mrs. Dillman usually had some refreshments ready for the travelers. When President Theodore Roosevelt passed through, she served him cold buttermilk. He reportedly was so pleased that he gave her a silver dollar which she kept for life.

August Dillman Freudenberger homesteaded the place. The German name was too difficult for neighbors to remember or pronounce, so the last name was dropped. Henceforth, he went by the

name of Cue Dillman. Don't drive into the ranch. It's private property. Stay on the Hart Prairie Road as it swings back to U.S. 180. The stage continued northward through the back country, but accurate directions would be needed for today's vehicles. In the 1880s, the county wagon road to Tuba City and Lee's Ferry passed east of Walker Lake through what was then called Horse Thief Pass. A small log cabin by the roadside at the entrance to the pass was said to have been occupied at one time by Mormon horse thieves.

A large volcanic cinder cone, called Missouri Bill Hill, a major landmark in this area, shapes the topography for the pass. This section, Forest Road 416, is recommended for four-wheel-drive vehicles. It can be by-passed by continuing on the Hart Prairie Road until it reaches U.S. 180, as stated earlier, eight miles north of where we first left it.

Crossing Kendrick Park, named for the officer in charge of the military escort for the Sitgreaves expedition of 1851, one can lunch at a small but attractive roadside picnic area built by the Forest Service. This place affords a majestic view of the San Francisco Mountain peaks.

From the picnic area, proceed on U.S. 180 approximately 12 miles to Cedar Ranch Road and turn right. It's a well-maintained cinder road for about five miles. This brings you to Cedar Ranch, one of the residence camps of the Babbitt Brothers Cattle empire. Don't go up to the house unless you want to be welcomed by the resident wrangler and offered a cup of cowboy coffee. Keep to the left and pass through two ranch gates. Be sure to close gates securely when you find them closed. A mile east of the house is East Cedar Ranch, the midway stop and second stage relay, 35 miles (by stage route) from Flagstaff. The price of lunch here was 50 cents. All buildings are now gone. The stillness provides a melancholy mood, but one can imagine the sounds of the activity here in the 1890s.

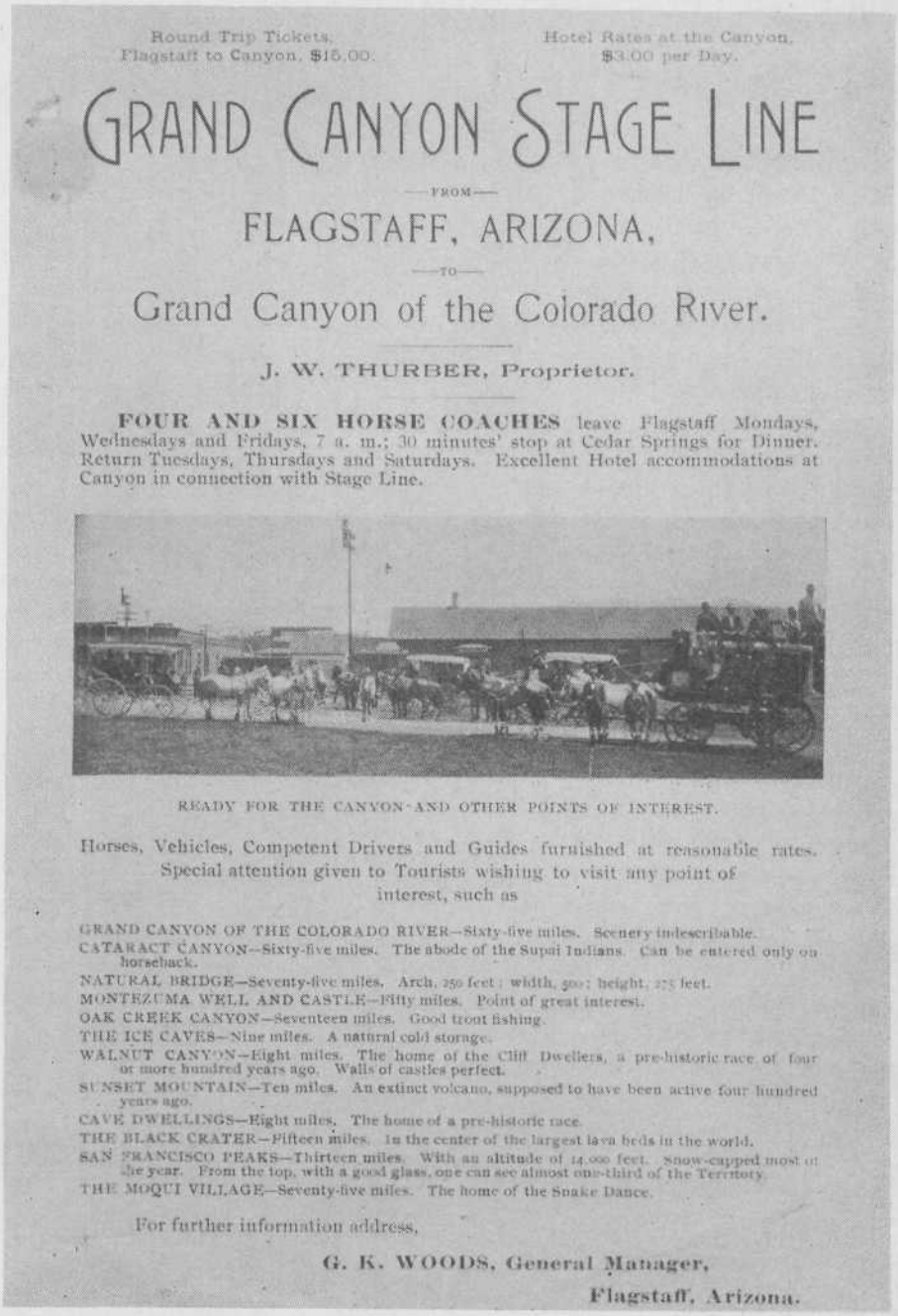
Retracing one mile to the road junction (Forest Road 417), turn right, or north, and you are again on the old stage route.

North of here the route location could vary, possibly because of weather and road conditions. One route went from Cedar through Rabbit Canyon, another through Lockwood Canyon. The latter was feared because of the possibility of getting stuck. Rabbit Canyon dried out quicker during rainy weather. Either way, the stage arrived at the same place, Moqui Station, the third relay point, 54 miles from Flagstaff. This Moqui is not to be confused with the "Moqui" area of today along State Route 64 and U.S. 180.

Moqui was in use as a stage station from 1892 to 1899. A sign placed by the U. S. Forest Service provides the following text:

"The Moqui Station was one of three rest stops and horse change stations on the stage coach route between Flagstaff and the Grand Canyon from 1892 to 1899. The stage trip took twelve hours, cost $20.00, and ran three times a week. Four to six horse coaches were used, and if there were too many passengers for one stage, a trailer was added resulting in a stage train."

The section north of Moqui Station was blazed for the Grand Canyon Stage Line by Mathew Alexander Black who was under contract to do so by the Sante Fe Railroad. Black arrived in the Flagstaff area with his brother, George Washington Black, in 1881 (before the raiload). They came from Prescott, a trip which required 10 days, because they traveled only at night in an attempt to



Round Trip Tickets, Flagstaff to Canyon, $15.00.

Hotel Rates at the Canyon, $3.00 per Day.

GRAND CANYON STAGE LINE

—FROM—

FLAGSTAFF, ARIZONA,

—TO—

Grand Canyon of the Colorado River.

J. W. THURBER, Proprietor.

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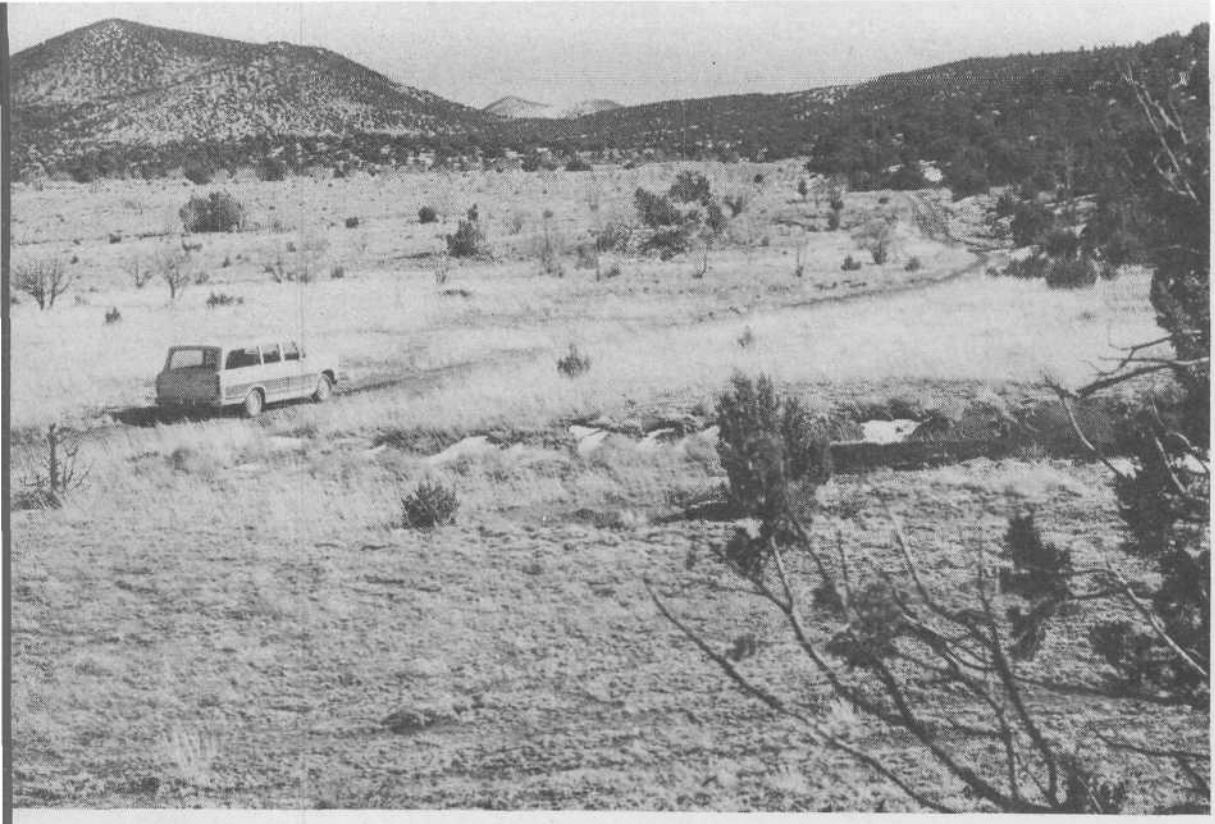
An advertisement from "Land of Sunshine," August 1897. From the files of W. H. Switzer, Sr. [Special Collections, Northern Arizona University Library.]



The stage route in the vicinity of East Cedar Ranch, the second relay station and lunch stop. Photo by Hal Stephens.

avoid some of Geronimo's unruly braves.

From Moqui, the stage proceeded past the Buckler Ranch and Red Horse Spring to near Moran Point on the South Rim where it met present route State 64. Here, John Hance operated a tiny tent village where each tent provided the Canyon tourist with a board floor, bed, table, chairs and other articles of comfort. According to Santa Fe Railroad literature, "excellent meals are regularly provided." The cost of the evening meal and lodging was $1.00.

Hance was a Grand Canyon prospector who came to the area about 1882 and spent the rest of his life near the Canyon. He built trails and operated a mine, but eventually found the tourist business more profitable. He chose a superbly scenic spot near the eastern end of the Canyon for his tourist accommodations.

Hance is credited with building the first tourist trail to the bottom of the canyon. Actually, he merely improved a trail long used by Havasupai Indians. This entrepreneur provided visitors with camping outfits, pack animals, saddle horses, guides, rough clothing, stout shoes and general supplies for those desiring to descend the trail or explore along the rim. He also entertained them with outlandish stories about the Canyon and his accomplishments in exploring it.

On May 26, 1892, news of the first round trip excursion over the new stage line was wired to the Associated Press, from Flagstaff, which said, "W. A. Bissell (Atlantic & Pacific R.R. General Agent) and party consisting of Dr. G. P. Reynolds, F. W. Van Sicklan, and T. G. Daniels of Alameda, Cal., with J. H. Hoskins, Jr., representing the Flagstaff Board of Trade, made the trip in eleven hours, fresh teams being provided at three relay stations. Everything passed off well, and the route is now open for regular business."

Circumstances of geography offered no great obstacle to a stage route in this part of northern Arizona. With the exception of traversing the slopes of the San Francisco Mountain, the route is nearly level. The fact that the journey consumed so little time, an average of five and one-half miles per hour including stops, is testimony to the condition of the route.

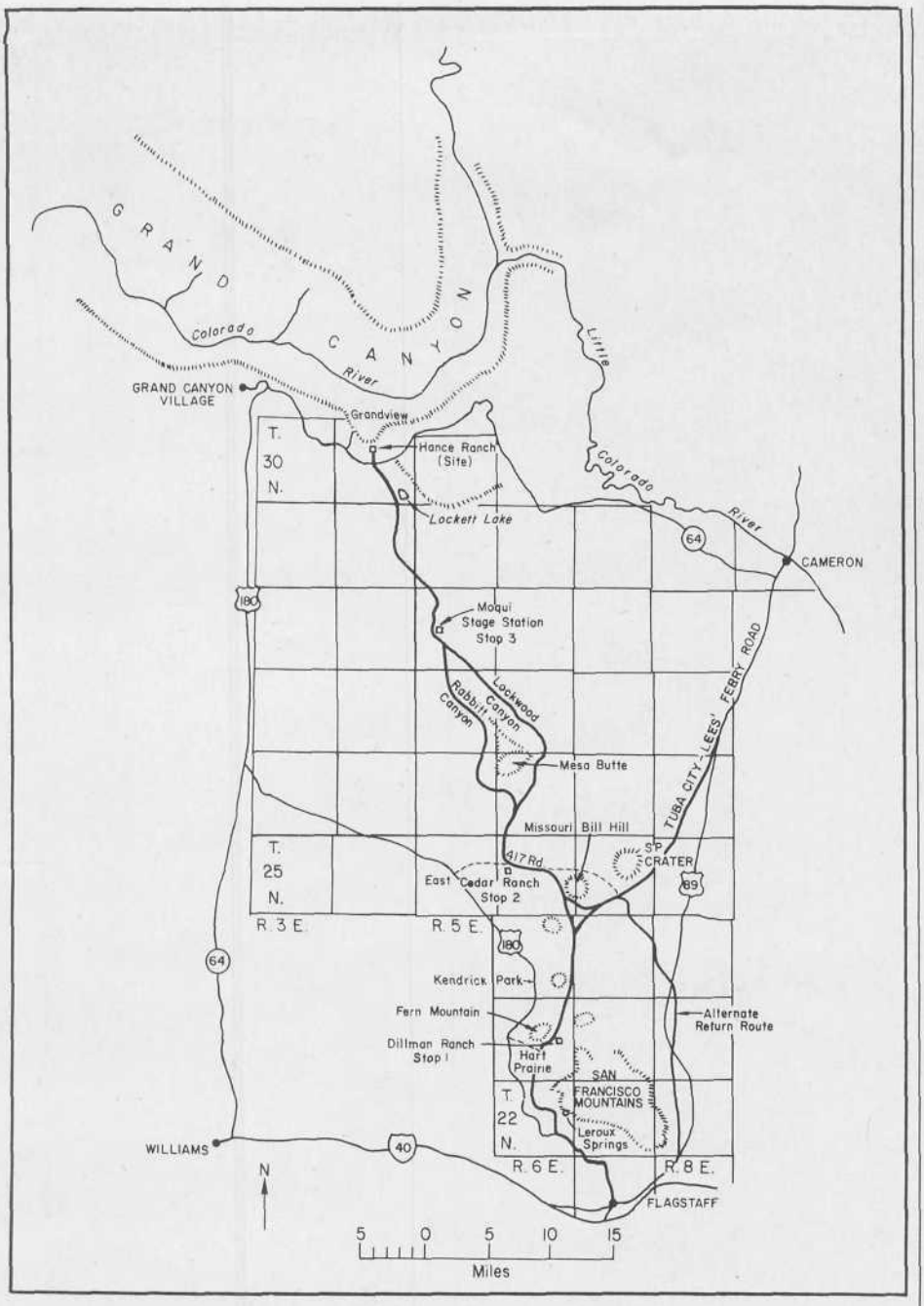
In two locations it was probably necessary to get out and walk (or push): once, on the mountain slope near Leroux Spring, the other, at the entrance to Lockwood Canyon where a sharp rise emanating from Mesa Butte creates a short but steep grade. Springtime road conditions undoubtedly caused difficulty, but except during winter months the stage ran to the Canyon every Monday, Wednesday and Friday, returning every Tuesday, Thursday and Saturday.

Short-lines such as the Grand Canyon Stage Line were common in the West in the 1880s and 1890s after the coming of the railroads. They were necessary for the transportation of travelers and mail. Unique among Western stages, mail or bullion was not an item of consideration on the Grand Canyon line, and the passengers were there for enjoyment. They were strictly tourists.

With exception of the usual discomfort associated with stage coach travel, there seems to have been no untoward incidents such as upsets, holdups or Indian problems on the Grand Canyon line. A search of newspaper files failed to reveal anything more portentous than one of the drivers, J. H. Farley, being arrested at Peach Springs and charged with "killing Mr. Garner's cattle for his own market." He was later found not guilty.

In 1894, however, the murder of Thomas Grady by Jose Bernadino Marques at Moqui Station provided local excitement and led to a sheriff's pursuit all the way to New Mexico. Both men worked at nearby Lockett Brothers sheep ranch, but the motive for the murder is unknown.

The traditional Eastern or Concord style stage which comes to mind when one thinks of stages in western movies probably never appeared in northern Arizona. In reality, the lines used light passenger wagons, ambulance wagons with seats, or celerity wagons rarely holding more than five passengers comfortably, seven or eight passengers if



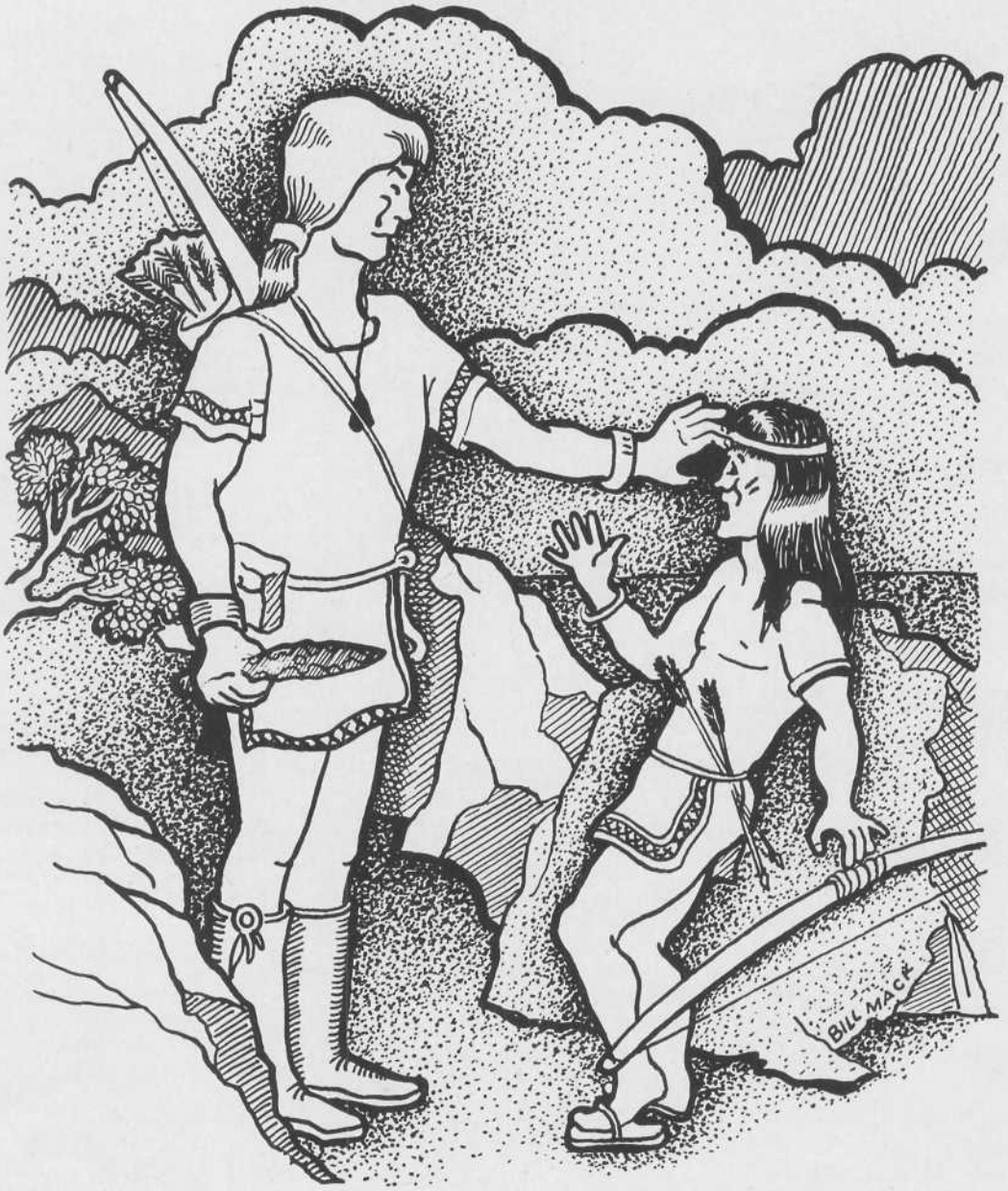
squeezed in. A three-seated ambulance wagon could hold nine. Spectacular then was the six-seated, 18-passenger bus shown in front of Flagstaff's Bank Hotel in 1895. An extra passenger could ride beside the driver. All had canvas drop sides for inclement weather.

While the railroad must get credit for stimulating the creation of the Grand Canyon Stage Line, it must also take the blame for the line's demise. The 1901 opening of the Grand Canyon R.R. from Williams to Anita brought a halt to the stage line's scheduled operations from Flagstaff. The stage then operated from Anita until the railroad was completed to the Canyon rim, although other stages continued to operate from Flagstaff. Automobiles were introduced about this time and their use increased, bringing additional variations to the route. The opening of the south rim country brought with it enough arrivals to justify the formation of a new county. In 1891, Coconino was separated from Yavapai and the county seat was located in Flagstaff.

The number of tourists the line carried is impressive for its time. In an article announcing the winter closing, over 900 passengers were carried during the 1899 season, 300 during July alone.

Periodically someone promotes the idea of resurrecting the old stage line as a tourist attraction. Perhaps this will come about, perhaps not. The idea may have merit, but until that time you can do the trip yourself with a sturdy vehicle. □

The Indians Who



Any unwary Paiute brave was game for the giant savages—and according to Indian legend, furnished the evening meal.

THE REVEREND Morgan Jones was in deep trouble. In 1666, young Jones, chaplain to the governor of Virginia, had been captured by Indians while on a journey to Carolina.

He and five companions had been detained and told to prepare to die the following morning, causing Jones to lament his fate in Welsh, his native tongue. His startled captors immediately took him to their sachem (chief) who informed Jones that his life, and the lives of his companions, would be spared. The chief spoke this welcome news in Welsh!

Soon after the Reverend Morgan's adventure, Mr. Steadman, a Welsh-speaking sailor, was shipwrecked on the Carolina coast and was captured by a group of similarly speaking aborigines. He was released after they equipped their linguist-in-arms with "their best goods."

Reports of Welsh-speaking Indians were so frequent that a group of Welsh patriots sent a young man to the New World to investigate. The young adventurer became a spy for Spanish interests and a dedicated boozer. He was unsuccessful in determining what group of Indians spoke his native language and died in an alcoholic haze in 1799, age 29.

As the reports of "fair skinned and comely" Indians became more common, local long-bow pullers added to the confusion by spinning some truly grotesque tales. According to them, not only did the Indians speak Welsh, they also car-

Were Not

by BILL MACK

ried Bibles printed in the twisting tongue, wore Christian crosses around their necks and were more noble than native redmen. From the number of reports of encounters with these paradoxes it would seem impossible to throw a rock into colonial woods without beaning a Welshman.

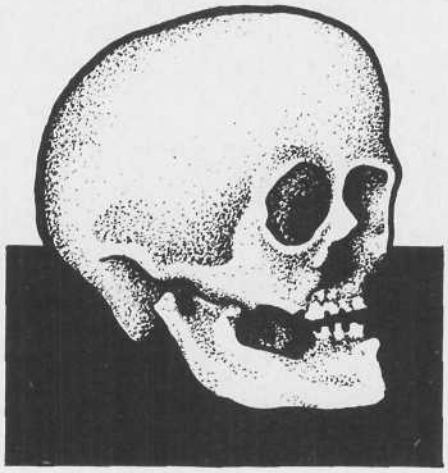
The first expedition to certify the truth of the matter was undertaken by a French explorer, the Sieur de la Verendrye, who started on his quest in 1735. His search focused on an area at the northern end of the Missouri River. He found the tribe known as the Mandans who had fair skin, lived in villages laid out in streets and squares, and which were immaculately clean.

The Sieur was convinced that these strange people were of European ancestry. He reported that they spoke a language "not unlike the dialect of Brittany," which has a number of similarities with Welsh. The noble explorer and his companions were struck by the beauty of the Mandan women. The famous American painter, George Catlin, lived among the "non-Indians" for several months and has left a pictorial record of a group of people whose features do not resemble conventional Indians.

The chief of the Mandans told the Sieur that his people were descended from a tribe that had come from "far across the waters" and had lived for a time in the southern regions of the New World. Pressures of their war-like Indian neighbors had forced them to flee northward and even there they had lived in constant fear of the Sioux who surrounded their territory.

Unfortunately for the Mandans and historical linguists, a smallpox plague nearly exterminated the tribe of light-skinned Indians in the mid-1800s. Although the tribe was virtually destroyed as an entity, not all of the light-skinned Indians died. Many of the survivors were taken into the Sioux tribe and others drifted away from their ancestral home.

In the course of my research into this early American mystery, I met a young Indian, a full-blooded Sioux, who was attending the University of Nevada. He has jet black hair, fair skin and light blue eyes. He says he is a Mandan-Sioux. But what of the Mandans who declined the offer of integration with the Sioux? Where did they go?



One of the large skulls from the Lovelock Cave.

Near the small Nevada town of Lovelock, there are a number of caves that figure prominently in Paiute Indian legend. One of the larger caves is the possible site of a last stand by a group of non-Indian nomads.

In 1889, Sarah Winnemucca Hopkins, daughter of the famed Paiute warrior, Chief Winnemucca, wrote a book entitled *Life Among the Paiutes* in which she detailed a running three-year war of extermination waged by the Paiutes against a band of fierce, war-like and red-headed cannibals.

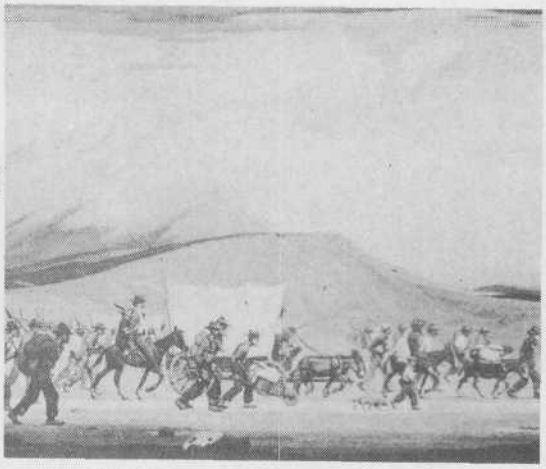
The Paiutes considered these curious people to be "barbarians." Several of the red-heads had been captured, but attempts to "civilize" them (the Paiutes own words) came to naught.

The Nevada Indians had been bedeviled by these hungry hybrids for several years, and in an effort to rid themselves of these deadly pests, the Paiutes went on the warpath. The fighting lasted three years and ended when the red-heads were forced to take refuge in the Lovelock cave. A Paiute emissary offered them peace if they would "be like us and not eat people like coyotes and beasts." The offer was refused with a hail of arrows and lances. The "people-eaters" (again a Paiute description), driven by thirst, made frequent excursions outside the cave in search of water and were subsequently picked off by waiting Paiute bowmen.

On the tenth day of the siege, the Paiutes again offered peace, were refused and retreated to plan the finale of their war of extermination. The Paiute strategists piled an enormous stack of sagebrush in the mouth of the cave and set it afire. The blaze was fed for ten days at the end of which time all of the redheads were dead of asphyxiation.

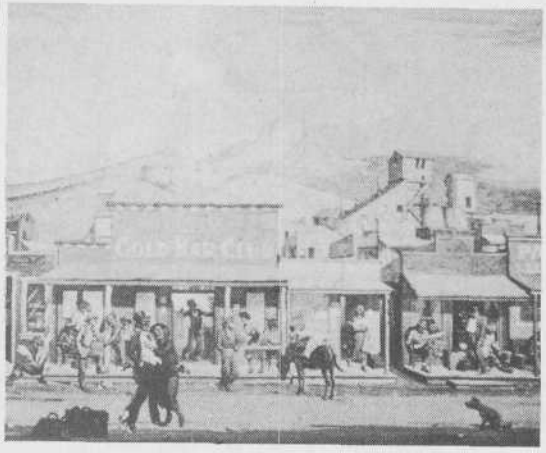
The Lovelock caves have been extensively excavated by the University of California and a spokesman for that institution soundly ridicules the Paiute legend. A letter in my files, written by a member of the Department of Anthropology, declares that during the 40 years of excavation by the University no evidence of cannibalism has been found. The spokesman admitted that some of the naturally dessicated mummies taken from the cave had reddish hair but that had been caused by the accumulation of bat guano on the floor of the cave and its subsequent chemical action on the pigment of the hair. In her book, Mrs. Hopkins reported that she was in possession of a buckskin dress that was trimmed by *red-haired* scalps. Despite their other outlandish habits, I do not believe that the cannibals treated their dandruff problems with bat dung.

continued



The Gold Rush

The Mining Camp



The Mining Town

The Ghost Town

In contrast to the university letter, the earliest known white discoverers of the cave, two guano miners named Hart and Pugh, found several skeletons of great size, one of which was reported as over seven feet tall. This discovery, made in 1912, was no surprise to the Indians who had known of the "giants" all the while but, as usual, were not believed by the whites.

Clarence "Pike" Stoker, who has an extensive private museum in the nearby town of Winnemucca, has himself found a skeleton of a man well over 6½ feet tall. In addition to numerous Paiute artifacts taken from the region, Stoken has acquired a very curious piece of stone, doughnut-shaped and incised with 365 dots on the outside edge and 52 dots on the inside. It is unmistakably a calendar. The Paiutes, despite many accomplishments, were not noted for their celestial observations. Whoever made the stone calendar had a better than adequate knowledge of the movement of the heavenly bodies and had manufactured a remarkably accurate dating device. The stone, approximately four inches in diameter, was found in the Lovelock cave.

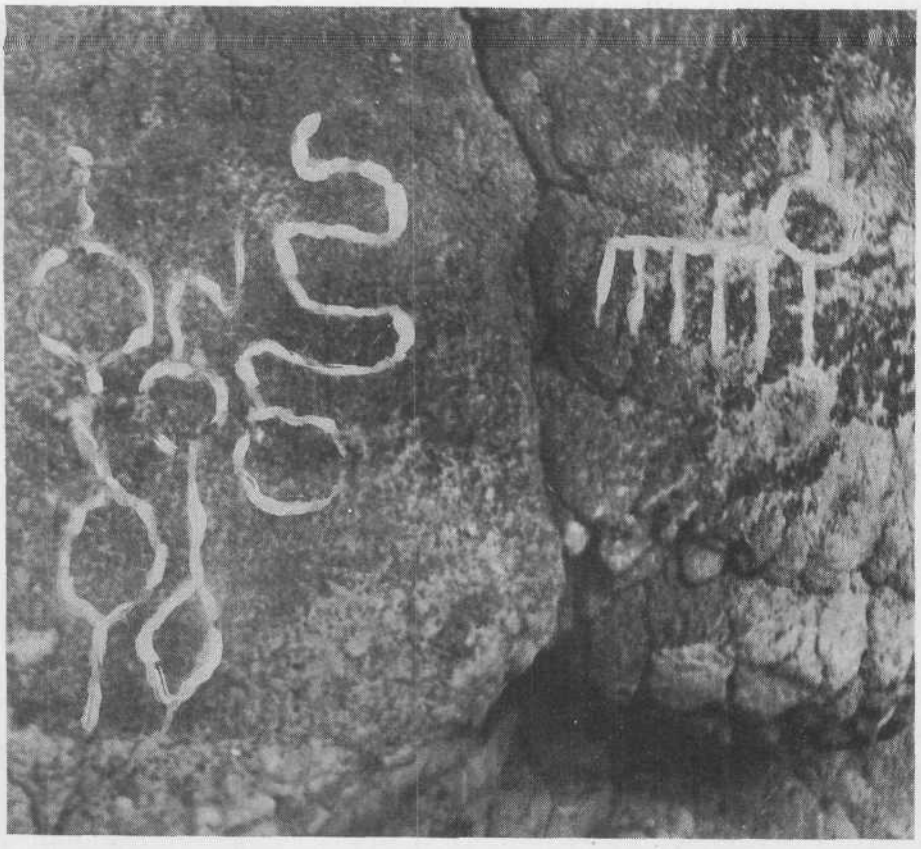
Stoker is of the opinion that the redheads, whoever, they were, were definitely *not* Indians.

My investigation of the cave was interesting but hardly productive of any new evidence. The cave has been visited by thousands of people, curiosity seekers and scientists alike, and the site is protected only by a small sign which declares they are an archeological zone and subject to federal control. The roof of the cave is layered by a heavy and very resinous soot, the result of many thousands of years of occupations and perhaps the final conflagration which annihilated the cannibals.

The natural question is: who were these anomalies and where could they have come from?

There is a possibility that they may have been the remnants of the plague-stricken Welsh-speaking Indians. But where did the Welshmen come from?

There are several possible answers, some of which are rooted in native mythology and others which have more tangible historical documentation. One possible answer lies in the reported voyage of Prince Madoc of Wales in 1170. The Welshman sighted land in an area believed by many to have been Mobile Bay.



This petroglyph photo has been retouched to bring them out for reproduction. They are close by the Lovelock Caves but their origin and age have not been determined.

There has been enough substance to this legend to motivate that august body of dedicated ancestor worshipers, the Daughters of the American Revolution, to erect a tablet commemorating the possible landing in Alabama.

While there are hundreds of reports of various early pre-Columbian explorers who landed in the Americas, Madoc is unique because of his return to Wales to recruit colonists for the New World. The numerous accounts of the Welsh-speaking Indians would indicate that he was successful.

The hardy Welshmen must have had a rough time of it. Instead of a paradise they found a large number of savage aborigines who welcomed them with arrows and stone axes. The entire history of the Welsh-Mandans is one of constant battle, flight and a steady northward migration which ended with their near extinction in the great smallpox epidemic of 1840.

It is possible that the survivors of the Mandans, who did not desire to become members of the Sioux tribes, may have moved west. Could these wanderers, most probably intermarried with Indian captives, have been the fierce red-headed cannibals who preyed upon the Paiute? And one last speculation. At the time of this writing, archeologists have uncovered the remains of a distinctly non-Indian type in a cave in Sinaloa. Perhaps not all of the peripatetic Mandans were exterminated. The reports from Sinaloa are that the bodies found in the cave are red-headed. □

CARSON HILL

Continued from Page 30

Richest values of the Morgan Mine lay in a huge quartz mass, for the most part near the surface. Until the late 1850s, ore was crushed by a horse-powered arrastra, a crude method used until the advent of the stamp mill. Theft of valuable ore chunks, known as "highgrading," was rampant in the early days at the Morgan Mine, and immense values were lost. Coarse strings of gold distributed through the quartz body often were removed with cold chisels, so rich were the deposits.

Eleven miles north of Sonora, State 49 crosses the Stanislaus River at the south side of Carson Hill. To the right of the bridge is the site of the Robinson Ferry and Trading Post, established in 1848 by John Robinson and Stephen Meade. The mining town of Melones, located here, was destroyed by fire, but massive mill foundations remain.

So great was the influx of miners and camp followers to Carson Hill, two miles northward, that a total of $10,000 in ferry fees was collected in six weeks at Robinson's ferry.

Many other claims now were staked on Carson Hill and operations under way when disputes arose with the Morgan Mine. It was argued that the extent of the Morgan claims exceeded the allowable limits of ground area for one mine. However, definite mining laws governing such matters had not yet been legally established in California.

Regulations governing the limits of a claim varied from camp to camp and usually were the result of agreements made at miners' meetings. Such arrangements did not yet exist at Carson Hill, but it was known that similar disputes in many camps had been arbitrated from the muzzle of a six-gun.

Over the years, following Hance's discovery of the Morgan Mine, many other companies operating on the Hill had riddled it with a network of shafts, tunnels and drifts for a total of some 15 miles. Some workings reached an inclined depth of over 4,000 feet.

Much litigation and several consolidations finally brought the Melones Consolidated Mining Company and the Morgan Mine, the two largest producers, under one ownership, the Carson Hill Gold Mining Corporation. Operations finally were ended by Government war-time order L-208 closing all gold mines, declaring them a non-essential industry, in 1942. Carson Hill had yielded a total of about $26,000,000.

Across from the turnout at Carson Hill is an old miners' bunkhouse and a couple of old houses still in use on the side road leading towards the mine. The rest of the old town is gone.

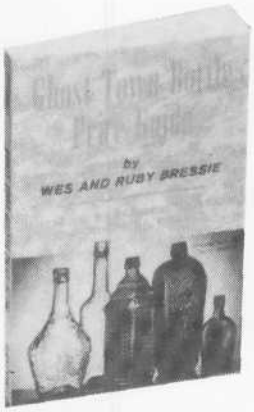
Peculiarly, and unlike most mining camp records, no authentic figures exist as to the saloon count in this once bustling community. However, it is said that these important clearing houses for accurate information and advice were in ample supply. Gambling houses and other deadfalls baited for the unwary did a rushing business.

A mile and one-half north of Carson Hill is the old Romaggi stone house, built in 1850. The rambling old structure stands alone on the site of the old town of Albany Flat. Built by James Romaggi, who came here from Italy in 1850, it served at various times as a ranch house, hotel, saloon and gambling house. Additions were added as needed.

Romaggi, not interested in mining, established a fine orchard and vineyard, supplying produce to surrounding communities until a drought ended his agricultural pursuits. The old stone structure, one popular with Carson Hill miners, is now a fast fading landmark of the pioneer 1850s.

The huge gaping cut of the Morgan Mine, one of the richest producers of the 1850s, and massive mill foundations at Melones stand as mute reminders of former great productive days at Carson Hill and Melones, when gold ruled. □

GREAT READING From CAXTON PRINTERS



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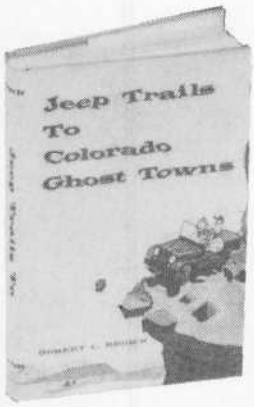

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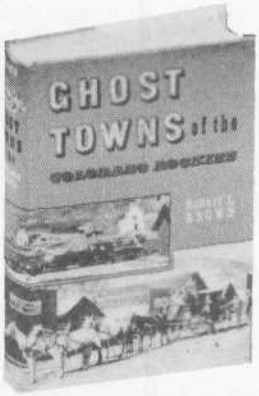

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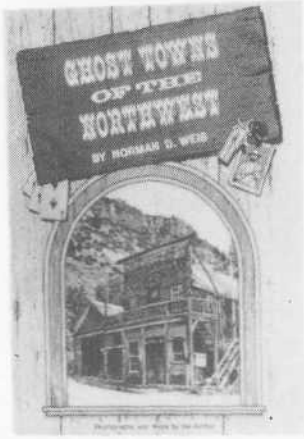

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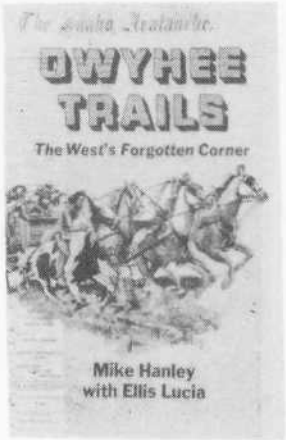

OWYHEE TRAILS by Mike Hanley and Ellis Lucia. The authors have teamed to present the boisterous past and intriguing present of this still wild corner of the West sometimes called the I-O-N, where Idaho, Oregon and Nevada come together. Contains interesting reading of the mining booms, Indian battles, holdups and range wars of this little known area called The Owyhees. Hardcover, 225 pages, $7.95.

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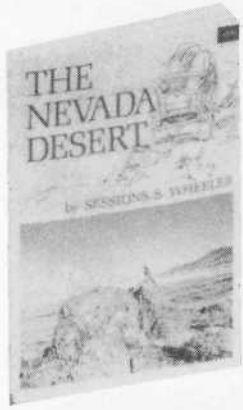

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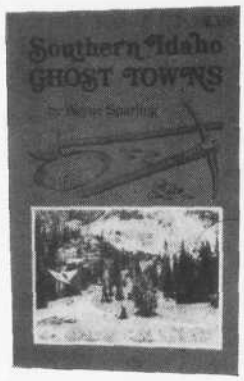

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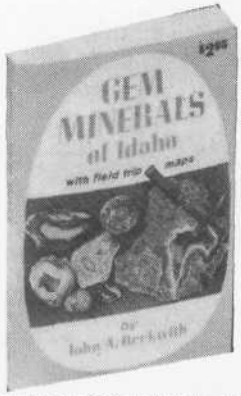

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Rambling on Rocks

by
Glenn and
Martha Vargas

CORUNDUM: No. 9 in hardness

CORUNDUM IS another mineral that leads a double life. Virtually everyone knows of ruby and sapphire. Only a small percentage of people know that these two are different colors of the mineral corundum. Also, very few know that ruby is the red form, and that all other colors of this mineral are lumped together as sapphire. The best known color is a medium-deep blue, thus most people think that all sapphire is blue. Regardless, pink, green, purple, orange, colorless, as well as others are also sapphire.

Corundum is aluminum oxide, forms hexagonal crystals, has no cleavage and is slightly heavier than most gem minerals. It is found in many places in the world, but the most important gem locations are in southeast Asia. Cambodia, Burma and Ceylon are the best producers. Australia is developing fields that produce sapphires almost identical to the Asian material.

The use of corundum as the Number 9 hardness standard does not really give it any position of importance. Actually, in our minds, it appears somewhat lost between topaz and diamond. In our last column, we likened topaz to a sort of wall enclosing a very interesting group of minerals between quartz and itself. We did not mention it at the time, but these very interesting minerals make up most of the true gemstones. Aquamarine, emerald, most of the garnets, tourmaline, zircon and others are between 7 and 8 in hardness. Spinel is 8, sharing that with topaz. To the average gem cutter, amateur or professional, this group of minerals is of great interest.

One might assume that we should also have an important group between 8 and 9, especially when ruby and sapphire are the standards for 9. Sorry, but there is only one known mineral between 8 and 9 in hardness. It is chrysoberyl, 8½ in hardness, and it does produce fine gems. Thus, corundum appears to stand off almost by itself, and above only the one mineral harder than 8.

Corundum's claim to fame, as a result, is in its gems. For what it never had as a member of the hardness scale, it has more than compensated for as a gem. Certainly, its gems are among the most coveted. Ruby, not diamond, is probably the most desired gem of all. This is true because good clear ruby is extremely rare, whereas diamond is not. The rareness of ruby is tied to two situations. First, the red of the ruby is due to a minor impurity of chromium. As chromium is not common, it follows that minerals carrying it as any impurity would also be uncommon. The presence of chromiun as the all-important impurity to form ruby is not universal, thus rubies are found only in a few places in the world. Sapphire, on the other hand, is found with ruby, but also in many other places.

Second, the greatest factor contributing to the rareness of ruby is that, of the small amount found, most of it is not clear. Rough, uncut ruby is seldom on the market, and we have never seen a piece over a carat in weight that we thought was really worth cutting. With this as a guide, we have decided that only a very small percent of the ruby that is found is really worth cutting. This decision is proven in that we have seen very few ruby gems without inclusions.

The inclusions in ruby are of a number of types. Ordinary cracks are very common. Veils and wisps are commonly present. The worst seems to be more or less spherical blob inclusions. We have cut through some of these blobs, and as far as we can determine, they are bits of rock, or perhaps dirt, that has been introduced in some manner. Regardless of what they are made of, or how they became included, they are far from desirable, and thus contribute to the rarity of the gem.

Both ruby and sapphire carry another inclusion, but in many cases this helps to make a better gem. This is the phenomenon known as asterism, which produces star stones. This is the result of small needle-like crystals of the mineral rutile lying in the same plane across the crystal. If we looked at the crystal from above, it is found that the rutile needles are grouped in a six-rayed pattern. If the crystal is cut into a cabochon with the base of the stone parallel to the plane in which they lie, and the viewer looks down upon this six-rayed group of needles, the stone will show a six-rayed star. As would be expected, star rubies are very rare, with star sapphires more common. The gem cutter refers to these rutile needle inclusions as "silk."

We have had the privilege (it is not always a pleasure) to cut a good number of sapphires and a few rubies. Every natural corundum that we have cut always showed at least a small amount of silk, even though most of the stones in the rough looked perfectly clear.

The interesting thing about this experience is that the materials originated from many places in the world. Africa, Australia, Asia and two locations in Montana produced material for us. The Asian material was in the form of pre-

viously-cut gems. It is reasonably easy to obtain uncut sapphire from most locations other than Asia. Rough pieces from here are sometimes available, but they are of very poor quality. If one wants a really good Asian sapphire, (or ruby), he must look for a cut gem.

Again, quality seeps into the situation. Those which were originally flawless, or nearly so, were given to the best cutters, and these made their way to the more elite market. Those of lesser quality were cut by lesser craftsmen, and eventually are offered to lesser buyers such as ourselves. Sometimes, the inclusions and color are such that the stone can be considered good, but the cutting is always unbelievably poor. Facets are placed at seemingly unimportant points, the shape is usually far from symmetrical, and often there are no two facets of the same shape and size. Obviously, the only course open would be to recut them into good gems. This would have been our aim, whether the cutting was good or not. We have seldom found it good.

It can be assumed from the above that the Asian gem cutter and gem dealer has a number of problems. He is dealing with a scarce commodity, and thus it is very valuable. Any material that he can obtain must be sorted carefully, and then handled accordingly. At the same time, he must try to produce enough gems of good quality to satisfy the market.

To show that he is on a sort of single track, all gems from the Asian fields are put into two classes. Ruby, sapphire and "tourmaline." This tourmaline (the word comes from the ancient Ceylonese word— *turmali*, meaning gems in general) covers all other gems as well as tourmaline. Spinel, peridot, zircon, garnet, topaz and others found in this region fall in this class. Obviously, the dealer is really interested only in corundum gems.

The methods of cutting these gems have led us to a conclusion. Almost without fail, all gems cut by the Asian native cutter are what we call a "fisheye." This is the result of the gem being cut too flat, and allowing light to go directly through it, and not reflecting within, and being returned to the viewer. This leaves a somewhat blank central portion, much like the eye of fish.

For many years, we thought that the cutting of a fisheye gem was a way of life based upon trying to get the largest spread of measurements for a gem cut out of a somewhat thin piece. Certainly, the cutting of a fisheye gem has become a way of life, and seems to be almost universal with native cutters over the world, but we now think that the original reason for the practice was not due to poorly shaped material.

Some of these poorly cut sapphires looked different after recutting. Most showed much more silk, and pink sapphires became somewhat purple. At first we were mystified, but after it happened a few times, a pattern began to show. Those that changed color were usually the flattest stones of all. Those that only showed more silk were fairly well cut, but nevertheless were fisheyes when we purchased them.

We have now decided that the amount of silk determines the flatness or depth of the gem. Silk is usually not visible when looking through clear pieces, either rough or cut, unless it is dense enough to cut into a star stone. Thus, we think the sorters look through them, and those that appear clear are set aside for the facet cutter. If the silk is such that it can be seen, the stone will be made very flat. If the silk cannot be easily seen when holding the rough piece to the light, it cannot be seen in a fisheye gem.

If the gem is cut correctly, light moves in virtually all directions through it. If silk is present, the light moving at nearly horizontal will reflect off of the individual needles, and some will be returned to the viewer, thus making its location discernible.

The change in color is interesting. Silk in corundum has a bluish color due to air trapped between the rutile needle and the surrounding material. Light reflecting from this air space appears silvery or bluish. If there is a large amount of silk, the gem will take on a bluish cast. Thus our pink sapphires were made purplish by the added blue.

It now seems that the Asian gem cutter started cutting flat gems in order that the silk would not show in returning light, and then it would not add blue to colors other than blue. The bad feature here is that the fisheye is produced regardless of the amount of silk. Worst of all, these many "tourmalines" are cut as fisheyes, even though they never contain any silk. □

The Trading Post

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January 1975

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Letters to the Editor

Letters requesting answers must include stamped self-addressed envelope

Beautiful Onion Creek . . .

I have just finished reading my copy of the December *Desert Magazine*, and must say that the writer has described in a very wonderful way the gorgeous lands in the vicinity of Onion Creek (Four Corners included). I wish I had the know-how to use words and describe things in the manner used here. The description of the land and background which made such grotesquely beautiful canyonlands is really terrific. I have no other way to say it.

Last summer, my son and I covered a small portion of the vast land called "Canyonlands," Utah, in a couple of days we had together.

Again, let me compliment Mr. F. A. Barnes for such a write-up as he made of "Onion Creek" and surrounding lands.

A. O. HALLER,
Colton, California.

Candidates for the Loony Bin . . .

My husband has been keeping all of his *Desert Magazines* in files for several years. Somehow his copy of June, 1974 has disappeared and he has turned the house and me upside down hunting it. Would you please send him another copy and keep us both out of the loony bin?

JEAN R. PHILLIPS,
Temple City, California.

Editor's Note: Your wish is my command! For other subscribers who either did not receive an issue [it can get lost in the mail] or mislaid one, an ample supply of recent years is available.

Cover Story . . .

I think that *Desert* reversed Mr. Waltz's December 1974 cover photo of Bryce Canyon's Natural Arch.

R. SHOFNER,
Porterville, California.

Editor's Note: Aghh! Eagle-eye Shofner caught us again! It's getting so a fellow can't make an honest mistake.

Calendar of Events

JANUARY 16-19, 5th Annual Gem—Rock and Hobby Show sponsored by the Palo Verde Improvement Association, Palo Verde, Calif., 20 miles S.W. of Blythe. Chairman: Helen Madden, Box 95, Palo Verde, Calif. 92266.

JANUARY 18 & 19, 6th Annual Superstition Mineral Festival, State Fairgrounds, 19th Avenue and McDowell, Phoenix, Arizona. Benefit for the A. L. Flagg Foundation. A tailgate show. Write: Ruth Bartlett, Sec., Box 11023, Phoenix, Arizona 85061.

JANUARY 25 & 26, California Barbed Wire Collectors Association's Western Collectable Show at the Cafetorium of the Lincoln High School, 555 Dana Ave., San Jose, Calif. Barbed wire, fencing tools, bottles, insulators. Free. For information: Medore LaBreche, 15107 Charmeran Ave., San Jose, Cal. 95124.

JANUARY 25 & 26, Contra Costa Mineral and Gem Society presents "Gems & Minerals by Diablo Dan." Food, door prizes and displays. Elks Lodge, 3994 Willow Pass Road, Concord, Calif.

FEBRUARY 1 & 2, Southern Nevada Antique Bottle Collectors 10th Annual Show and Sale, Las Vegas Convention Center. Contact: Show Secretary Mrs. Pat Eastley, 431 No. Bruce St., Las Vegas, Nev. 90101.

FEBRUARY 14, 15 & 16, Tucson Gem & Mineral Society, 21st Annual Show, Tucson Community Center Exhibition Hall, 350 S. Church St., Tucson, Ariz. Dealer space filled. Admission, $1,00 adults, children under 14 free with adult. Contact: Everet O. Wogstad, 7430 N. Village Ave., Tucson, Ariz. 85704.

FEBRUARY 15 & 16, Sixth Annual Antique Bottle Show and Sale of the Peninsula Bottle Collectors of San Mateo County. Home Arts Building, San Mateo County Fairgrounds, San Mateo, Calif. Admission and parking free.

FEBRUARY 22 & 23, 7th Annual San Fernando Valley Gem Fair, Glendale Civic Auditorium, 1401 N. Verdugo Rd., Glendale, Calif. Admission $1.50; ages 12-17 25c; under 12 free. Displays, dealers, demonstrations, club sales. Free parking. Chairman: Claude Schapers, P. O. Box 44356, Panoarama City, Calif. 91402.

FEBRUARY 28-MARCH 1 & 2, Phoenix Gem and Mineral Show, "Western Roundup of Gems" sponsored by Maricopa Lapidary Society, Inc. State Fairgrounds, Phoenix, Ariz. Overnight camper parking. Field trip. Lou Irons Chmn., 2046 W. Orange Dr., Phoenix, Ariz. 85015.

FEBRUARY 28-MARCH 9, Imperial Valley Gem and Mineral Society presents their 28th annual show as part of the California Midwinter Fiar at Imperial, Calif. Field trip: Cerro Pinto, Mexico on March 8th. Dealers, area for trailers and campers (no hookups). Chairman: Bob Wright, 1028 W. Adams, El Centro, California 92243.

MARCH 1 & 2, Ventura Gem & Mineral Society's 13th Annual Show, "Artistry from Nature," Ventura County Fairgrounds, Ventura, Calif. Dealers full - camping. Show chairman: Frank King, 684 Guiberson Rd., Fillmore, CA 93015.

MARCH 8 & 9, 13th Annual Spring Parade of Gems, Elks Club, 1000 Lily Hill Drive. Sponsors Needles Gem and Mineral Club. P. O. Box 762, Needles, Calif. 92363. Chairman: Bob Brocks. Dealers filled.

MARCH 14-16, 15th Annual Southwest Gem & Mineral Show, Villita Assembly Hall, 401 Villita St., San Antonio, Texas.

MARCH 15 & 16, "Gem Roundup" sponsored by the Sequoia Mineral Society, Dinuba, California, Memorial Building. Chairman: Sam Phillips, 10300 Kings River Rd., Reedley, Calif. 93654.

MARCH 15 & 16, Los Angeles Lapidary Society's 34th Annual Show "March of Gems," Liberal Arts Masonic Temple, 2244 Westwood Blvd., Los Angeles. Free Admission and parking. Dealers, snack bar, lectures, demonstrations, exhibits. Contact: Zan Arnt, 539 East Hazel, Inglewood, Calif. 90301.

Military Maneuvers . . .

In the Letters to the Editor in the November issue, you published two pictures and a letter from Otto J. Baum relative to rock walls and circles near Wiley Well off the Palo Verde Road.

I first saw them about seven years ago while hiking through the area. They are, indeed, hard to see from the road. I, too, was puzzled and thought they might have been Indian ruins.

However, friends of mine in Blythe told me they were constructed by G.I.s as machine gun emplacements and dugouts during mock war maneuvers by the U. S. Army, either during the General Patton World War II training, or during the Desert Strike training in the '60s. I personally think it was the latter.

JACK PEPPER,
Palm Desert, California.

Contrasts John Hilton

Painter of the Desert

Many art critics consider John Hilton the foremost painter of desert scenes of the West. His oils are hung in galleries throughout the United States and are constantly in demand. Desert Magazine has a limited supply of prints of his painting entitled "Contrasts" showing sand dunes covered with desert wildflowers and the Santa Rosa Mountains in the background.

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