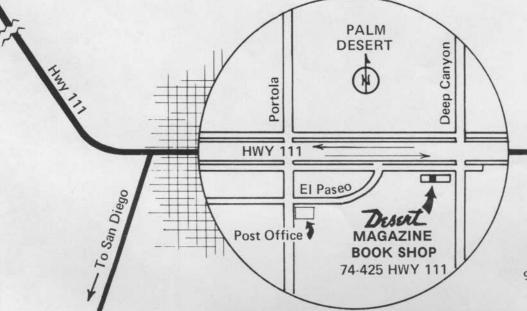


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THE COVER:
Reflections of beautiful Rainbow Bridge (National Monument), Southern Utah. Rising waters of Lake Powell (Colorado River) give boatmen easy access to the once remote natural bridge. Photo by Josef Muench, Santa Barbara, California.

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S THE years pass by, there is an ongoing cycle wherein you find new friends and lose dear old ones. These past 11 years have been rewarding for my family here at the magazine in introducing us to so many wonderful relationships with subscribers, authors and advertisers. However, due to a continuing respiratory ailment, the time has come to pass along the reins to new hands. With this, our final issue, the three of us—Joy, co-publisher and coeditor, our daughter, Sharlene, who has been so helpful the last year in helping

us to meet those monthly deadlines, and myself would like to take this opportunity to thank each and every one of you for your support through the years.

A Peek

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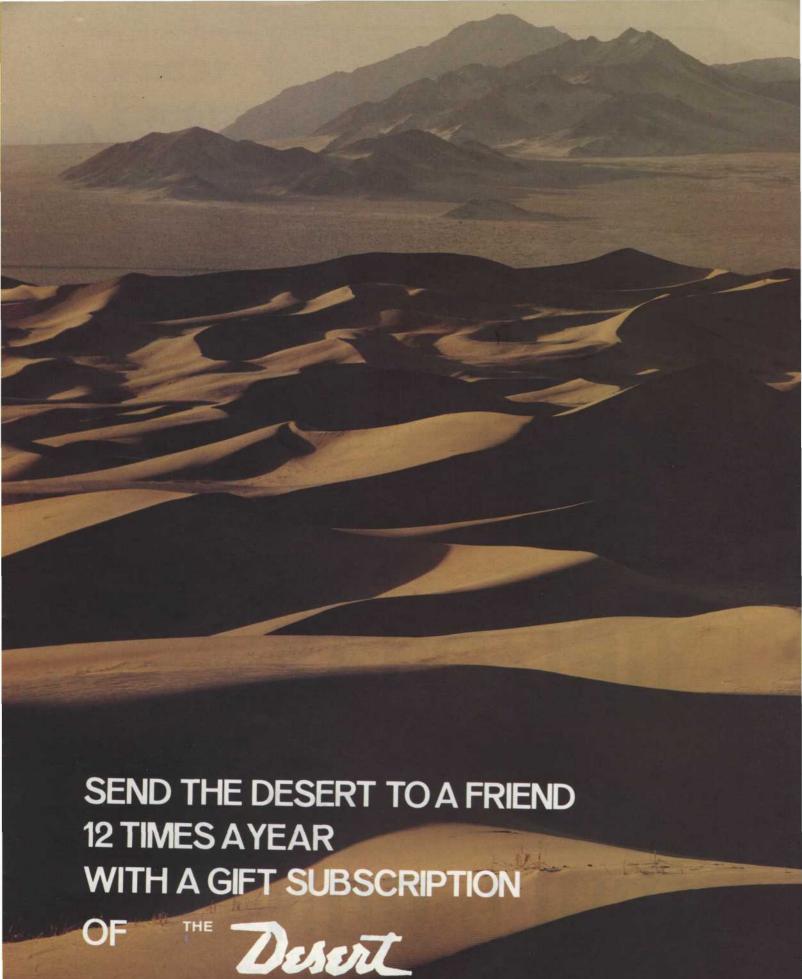
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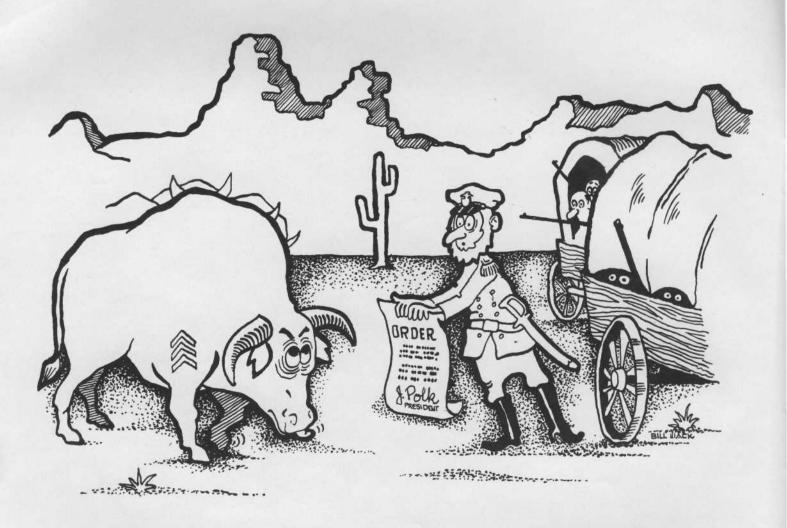
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ARIZONAS BATTLE BULL RUN

by BILL MACK

HE BATTALION, their wagons drawn into a tight defensive circle, watched nervously as their enemy milled restlessly on all sides. Officers passed up and down the ranks steadying their men for the expected charge. It was a desperate situation. Huddled among the wagons were 25 women and children and the 340-man Mormon Battalion was determined to hold at all cost.

A rising cloud of dust in the narrow Arizona canyon and a thundering roar heralded the first wave of the attackers. The battle was sharp, chaotic and no quarter was expected or given. Lieutenant Colonel Phillip Cook and his batallion of sharpshooting Mormons held fast despite several wounded and havoc among their wagons. The enemy had charged, swept past the embattled soldiers and was now standing, huddled together, breathing hard and just beginning to resume their grazing.

The date, December 12, 1846, marked the first — and most probably last battle ever fought by an organized Army group and a herd of cattle.

California's problems with their Mexican rulers had spurred President James Polk to order a 2.000-mile march to find a route to California that was comparatively free of snow and the Mormon Battalion, which had volunteered for a year's service in the Army to escape the religious persecution of the mid-west, had been chosen to make the march. Their column, some 500 strong, left Council Bluffs, Iowa, in July, 1846. Physical attrition had reduced their ranks to the 340 who battled the bulls in a narrow gorge between the present-day Arizona town of Sierra Vista and Tombstone.

The column, under command of Lieutenant Colonel Cook, who later found a measure of fame during the Civil War, was following the San Pedro River after a grueling march that had taken them south to Mexico before they began their northern swing.

As they marched through the San Pedro River Valley, the nervous bulls, wild descendants of domesticated Spanish herds, had followed the column with growing concern. Each day the nervous herd became more aggressive as the Mormon soldiers trudged through their territory.

The spooked bulls made their stand in a narrow neck of the broad valley. The battle which eventually erupted was short, fierce and debilitating enough to cause the trail-weary troopers to halt their march for several days to tend their wounded, repair the wagons and revive their drooping spirits.

For Cook, a professional Army officer whose later encounters with his son-inlaw, J.E.B. Stuart spiced up his Civil War record, a battle with a herd of rolling-eved mayericks was a dubious distinction. Obviously not a clear-cut victory but yet not a defeat, both Cook and his scruffy opponents lived to fight another day. I have often wondered how this item appeared in his service record. If the military was anything like it is at present (and I'm sure it was), the battle was duly recorded as an encounter with "hostile forces," embellished, endorsed in quadruplicate, filed and forgotten. A look at Cook's battle record in the Civil War certainly showed that he had profited from his little known Arizona skirmish. His reports on his feeble attempts to corner J.E.B. Stuart distinctly show that Cook, whether in Arizona or Virginia, could throw the bull with the best of them.

The battalion resumed their march and arrived in California late in January, where they reinforced Fremont and Stockton, who had defeated the Mexicans in the southern portion of the state.

The battle site is marked by a concrete marker on Charleston Road, a little-used route between Tombstone and Sierra Vista.

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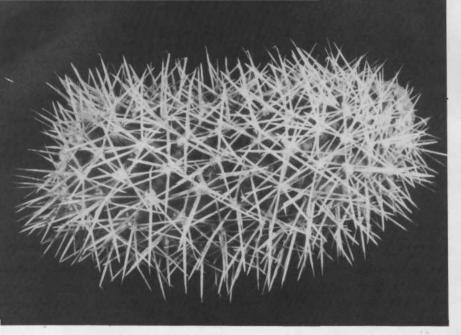
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A detached stem segment or joint showing the intricate arrangement of spines. The spines provide an obvious and painful deterrent to would-be browsing animals, light-reflective insulation, and an effective hitchhiker.

BEWARE OF THE JUMPING CHOLLA!

by WAYNE P. ARMSTRONG



ANY PLANTS have evolved all sorts of ingenious methods of dispersal to insure the perpetuation of their offspring. Seeds and fruits may attach to the fur of animals or to your socks, travel through air and water, or may be mechanically propelled as the seed pods contract or burst. Hitchhiking is certainly one of the most familiar and interesting methods of dispersal. Probably everyone has plucked the burs of puncture vine, cocklebur or foxtail grass from their tires or clothing. Without a doubt, the most painful and aggravating of all hitchhiking plants in the southwest is the unforgettable trademark of the Colorado Desert, jumping cholla [Opuntia bigelovii].

Nest of Cactus Wren neatly tucked away in the upper branches of jumping cholla. The nest is constructed from several slender-stemmed wildflowers and is completely enclosed with a side tunnel entrance. Dense thicket of jumping cholla with glistening white spines. The brittle stem joints become detached and colonize entire hillsides such as this.

Like other kinds of cholla cactus, the cylindrical stem segments are densely covered with slender, barbed spines. In fact, this species is sometimes called "teddy-bear cholla" because of its exceptionally dense covering of spines. The brilliant yellowish-white spines are really quite beautiful, especially when illuminated by the sunlight of early morning or late afternoon. On old, dead branches and main trunks, the spines become dark brown or black. What makes this cholla so unique are the stem segments or joints that break off with the slightest touch and become firmly attached to various body extremities. Trying to pull out the barbed spine is not only frustrating and painful, but usually results in the joint or fragment becoming attached to another part of your anatomy.

This habit of unprovoked fragmentation is undoubtedly the source of the common name, "jumping cholla." Contrary to popular rumors, this cholla does not actualy jump, although it may appear to do so. If you just barely touch or brush against the spines and then suddenly jerk away, the fuzzy stem segment will be instantaneously upon you!

Close-up microphotography, particularly with the scanning electron microscope, reveals why the spines of jumping cholla are so tenacious and painful to pull out. The spine is covered with sharp, overlapping scales or barbs that lie flat and allow the spine to penetrate the skin readily. When you try to remove a spine, you are pulling against

Shaft of single spine of jumping cholla taken through a scanning electron microscope [350X]. The numerous, sharp scales or barbs show why the spine is so difficult [and painful] to pull out!





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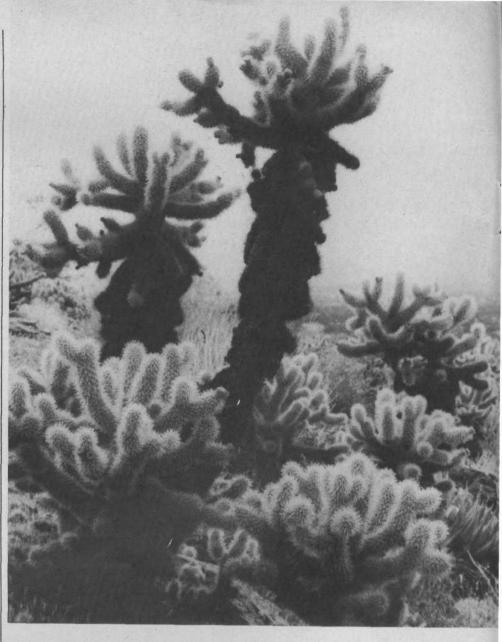
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A clump of jumping cholla showing the dense, spiny [fuzzy appearing] branches and the characteristic dark trunk.

hundreds of tiny barbs. In the process, other spines penetrate the skin from all directions, making the extraction seem hopeless. Often the spines break off and simply have to be pulled out individually and without a local anesthetic. You might give the victim a branch to bite on (not a cactus branch) or large amounts of some fermented beverage. Depending on the exact body extremity, the extraction, in some cases, can be downright embarrassing.

The thickets of spiny branches provide a well-protected nesting site for the Cactus Wren. Throughout the Colorado Desert you often find the football-shaped nest of straw, with its characteristic side tunnel entrance, lodged in the upper branches. The nest is made from an interwoven meshwork of slender stems and branches from several annual wild-flowers. In the Anza-Borrego Desert area, favorite nest building plants are the threadlike, intricately branched annual buckwheats [Eriogonum] and a very appropriately named wildflower called thread-plant [Nemacladus]. Desert woodrats or packrats [Neotoma] also build their "houses" among clumps and thickets of jumping cholla. They actually make large piles of prickly stem segments to protect their nests and runways.

The easily fragmented stem segments or joints of jumping cholla are one of nature's most effective methods of hitchhiking and vegetative reproduction. The detached joints will readily develop roots

and start a new colony. Although jumping cholla produces yellow flowers, the seeds are usually sterile and reproduction is accomplished without sex. Entire hillsides or alluvial fans of thickets may have developed from fragmented stem segments. You could say that jumping cholla is a master in the art of cloning!

Even if you walk with tedious caution, it is practically impossible to go through a dense stand or thicket of jumping cholla without getting at least one spiny stem segment attached to your shoes or pant cuffs. As you carefully avoid brushing against the spiny branches you will undoubtedly step on one of the thousands of treacherous detached segments that lie in wait for a hapless passer-by.

Every semester I warn my botany

class repeatedly to beware of the jumping cholla, but there always is someone who disregards my warning and gets impaled by a vicious branch. On a recent field trip to Anza-Borrego Desert State Park I watched with amusement as several students attempted to remove a segment from a lady's shoe, only to have it transferred to the shoes of each chivalrous male. My laughter ceased when the prickly joint finally ended up on the wrist of a screaming student who promptly flipped it full force into my groin area. I can't think of anything more miserable to spoil a nice day in the desert, except perhaps for the bite of a sidewinder. At that moment I made a vow to always carry a pair of needlenose pliers when walking through jumping cholla country.

One of the hazards of walking through jumping cholla country is "picking up" the easily fragmented joints. The sharp spines readily penetrate leather and rubber.



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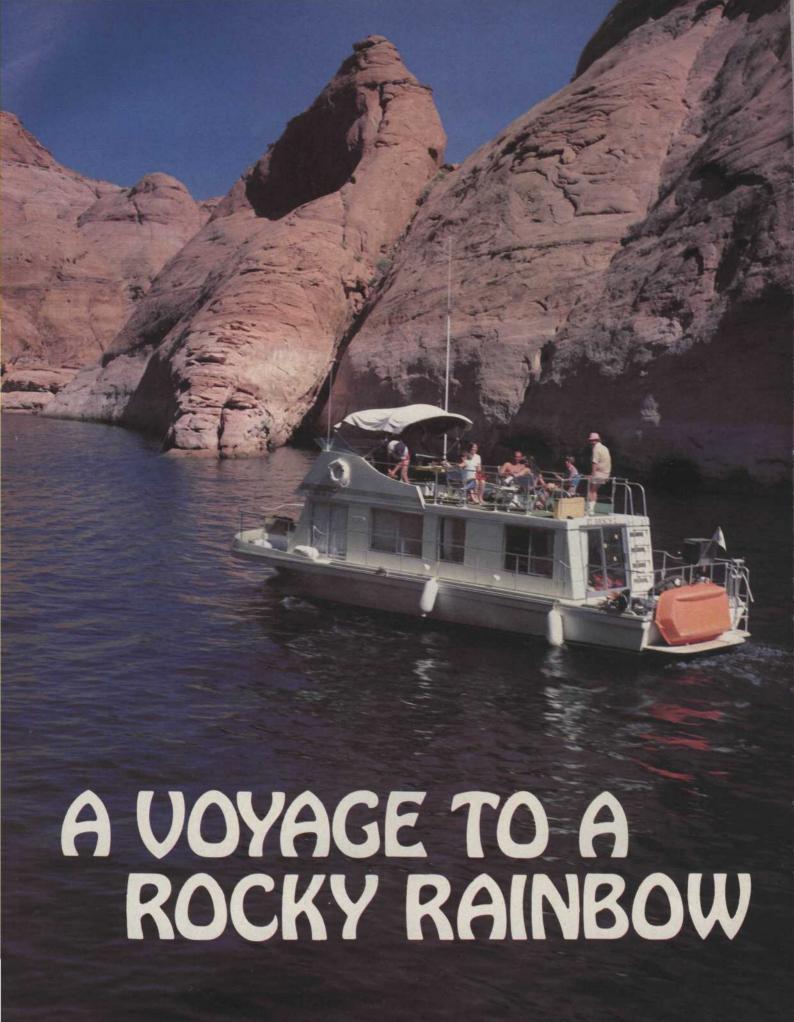


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Opposite Page: Available for rental at the Wahweap Marina, houseboats provide families and groups of friends with a means of enjoying the fishing and sight-seeing pleasures of Lake Powell in safety, comfort and leisure. Right: At nowhere else on earth has nature created an arch that equals Rainbow Bridge in size, symmetry and coloration.

by C. WILLIAM HARRISON

S PILOT of the Ethel G. our 49-passenger tour cruiser out of Lake Powell's celebrated Wahweap Marina that unforgettable October day, Ray Watton was not long in revealing that he was more commonly known among his friends and associates as Rotten Watton.

He had earned this unique and salty moniker, he confided to us all, because "I like to drink beer and flirt with the ladies." And along with this succulent confession, he soon let it be known that he is a man who still clings to oldtime western traditions of courtesy, consideration and pithy humor.

He proved this when he slowed our double-decked tour craft down to quarter power as we approached and passed a vacationing family's houseboat that was anchored near a sandy beach 50 yards or so off our starboard side.

"If I didn't," Ray explained through the Ethel G's audio system, "we'd wallop that houseboat with a wave that would knock mama out of her kitchen and the baby off its potty."

It was an early October morning to write home about, warm and windless, with an unclouded sun burnishing the sandstone buttes and sculptured cliffs about us and the rumpled waters of Lake Powell almost as matchlessly blue as the sky itself.

Beyond and above the white-capped vee of the *Ethel G's* billowing wake we could still make out the broad, curved face of Wahweap Lodge, in whose superb accommodations my wife and I had spent the night.

The cruiser's powerful engines were a muted thrumming beneath us, sensed more than actually heard through the mingled chatting of passengers who had boarded the craft as strangers but who already were being drawn together by the pleasures of new experiences and dazzling vistas of water and rock mutually shared. Rainbow Bridge, our destination for the day, was still two hours or more away, haunting us already with its sublime, yet-to-be-seen glories.

It was a time for remembering, for pondering. It seemed almost beyond belief that only a scant two decades ago this awesome body of captured water which we now know as Lake Powell had not been in existence; almost beyond comprehension to realize that with the construction of the enormous Glen Canyon Dam the lake now contains a mind-boggling 27 million acre feet of precious western water, and that it spans some 200 magnificent miles of north Ari-





Lying ahead the Ethel G and other cruise boats at the end of a perfect day are the superb comforts and conveniences that are offered year-round to Lake Powell's vacationers—Wahweap Lodge.

brief, transient track across the undefiled blueness of the silent lake. And then, afterwards, our pilot made the turn that brought us into the sunlit opalescence of Secret Canyon, a narrowing waterway that led us slowly between the bulging shoulders of immense sandstone cliffs where nature had been stripped to pose nude and unblushing before humanity. A sudden silence seemed to fall over the quietly drifting craft and all its passengers, the breathless hush of overpowering awe and wonderment.

And then we could see it as we eased our way around a sharp bend in the con-

zona's and southeastern Colorado River canyons and historic tributary gorges.

It confounded my mind, as I am sure it must have many of the Ethel G's other engrossed passengers, to realize that, here at least, that muddy old river of earlier times no longer exists in the ways of its creation . . . that its once-tormented channel where a century ago John Wesley Powell, one arm abandoned on the battlefield of Shiloh, had led his small party of explorers in an intrepid struggle for knowledge and survival, now lay humbled and submerged 500 feet below the hull of our speeding tour cruiser . . . that this sublimely beautiful and immensely productive lake contains some 250 square miles of boating and fishing waters, and with all its bays and branching canyons has 1,900 miles of shoreline, surpassing in length the combined coastlines of California, Oregon and Washington.

History in all its glory and pathos lives on among the ancient buttes and pinnacles that encompass Lake Powell. As we passed through the broad channel that separates Utah from Arizona, we could see the place where in 1776 the two lost and starving Franciscan priests, Escalante and Dominguez, somehow managed to cross the unbridled Colorado in their struggles to return to Santa Fe. The lake's Padre Bay, Padre Canyon, Padre Point, and Padres Butte commemorate their epic explorations.

Each canyon and butte and each towering dome and serrated minaret that we passed along our way had been spectacularly carved and colored by time and the elements. Each bore a name that tingled in the mind and tugged on the imagination. Back there were Cookie Jar Butte and Dinosaur Rock and here, dwarfed and humbled by the immensity and magnificence of nature's sculptured panorama, we were passing Last Chance Bay and the remarkable sandstone imagery of Camel Rock.

We were approaching Dungeon and Grotto canyons now, and not far ahead were equally incredible others beckoning to us with all their silent whisperings of men and events who had given them their picturesque, mind-stirring names — Dangling Rope, Balanced Rock, Cathedral.

Our cruiser sped on through its labrinthian world of towering cliffs and mirrored canyons, leaving behind it its



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Desert/October 1979

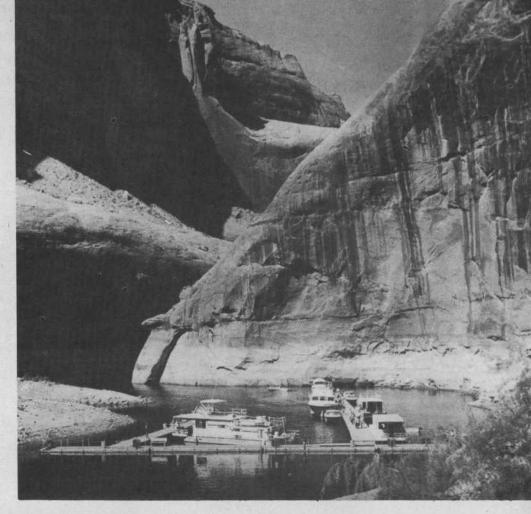
Immense cliffs, sculptured by time and painted by the elements, tower above the landing dock at Rainbow Bridge. Other similar facilities are located on the lake for the convenience of sightseers and sportspersons who want to try their luck in the lake's celebrated fishing waters.

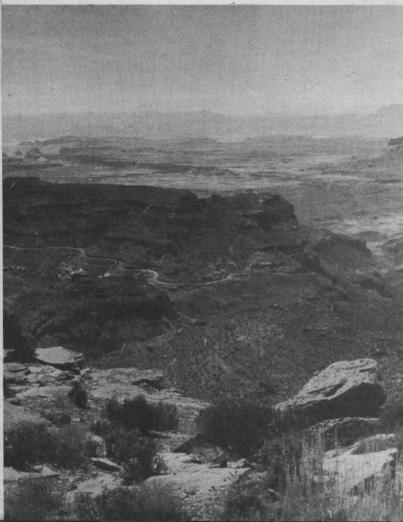
stricting channel, could see it beyond the small landing dock and the footpath that led away and gently upward from it . . . could see at last that wondrous creation of nature which the Navajo called *Nonnezosheboko*, meaning great arch, and which was known to the Paiute as *Barohoini*, the rainbow.

Rainbow Bridge. Incomparable in all the world in its size and symmetry, incomprehensible in the human heart and imagination in the miracle of its creation, the glory of its immortality.

Rainbow Bridge.

It had long ago, how long I could not remember, become one of the great





A visit to Lake Powell offers far more than merely water sports and boat cruises. Half- or full-day trips in air conditioned 4-wheel-drive tour vehicles are available for exploring the remote and rugged high country, a land that exists today much as it was in pioneer times.

dreams of my life, an inexpressible, unexplainable longing, an undefinable yearning and hoping that across the years had never let go of me. I could not have told why.

And now, almost unbelievably, it seemed, that magnificent rainbow of primordial rock was there before me in all its majesty. And I...I, too, was there. And all at once the sunlit beauty and silent nobility of that colossal structure seemed to sweep me up and away from myself. It was almost as if, in that one small enchanted moment of revelation, I had reached out and touched the latchstring of Eternity, as if I had opened my eyes and seen myself in the mirror of Time.

It was too much for me, suddenly too much. I turned quickly away from my wife so that she would not see, but of course she did, the swift and uncontrollable blurring of my eyes.

The memory of that day and all its pleasures still lingers. What more can a man ask, I often wonder, than to be able to fill the years of his life with the many scenic and historic treasures that await him in this great and wonderful land of ours?

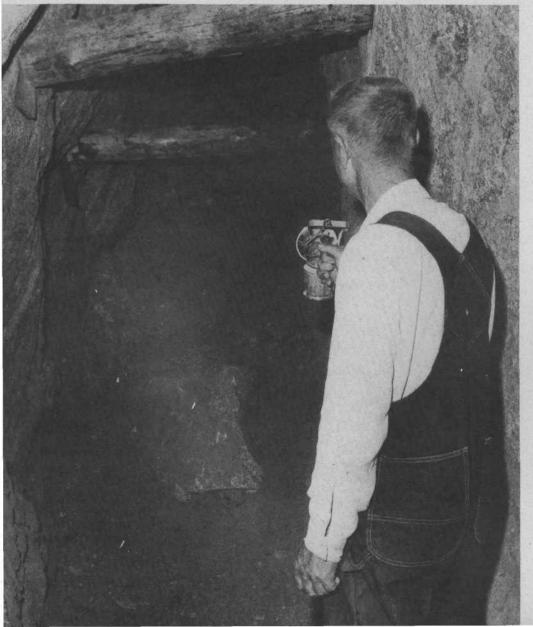
Desert/October 1979

ALL THE MINES ARE NOT ON THE DESERT!!!

HILL COUNTRY CONTAINS MANY CLAIMS, HISTORIC SITES

D. C. Mayne spotlights a working stope or ore face in his Hemet Belle Mine in the San Jacinto Mountains. Old claim was an early producer in the Chilson-Kenworthy district, now largely inactive except for Mayne.

by BILL JENNINGS

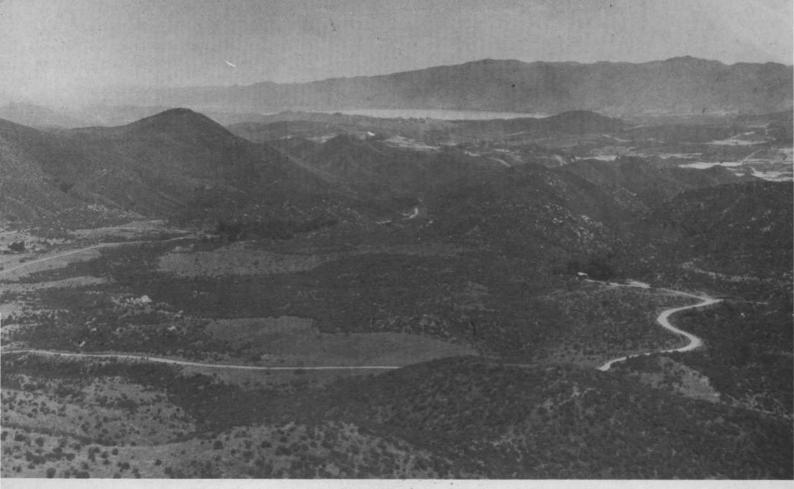


EWER THAN 75 miles from the downtown Los Angeles freeway interchange is one of the most interestingly historic districts of Southern California, complete with "lost" gold mines and other mineral wonders, the region's oldest railroad station, the Southland's last outdoor pageant of national note and so many other attractions you may wonder why you haven't visited western Riverside County before.

The only thing missing is the desert, and in summer you can't be too sure of that with day temperatures frequently over 105 degrees, an arid landscape with many desert-type plants, plus the aforementioned old mines, some of which were pioneered by the same developers better known for their desert exploits.

Our "where to go" feature this month is about the Lake Elsinore - Perris - Hemet -San Jacinto highlands and inland valleys. The mines, some of them at least, are classified as lost because their century-old tunnels, shafts, head-frames and other visible clues are hidden by encroaching urbanization that is afflicting nearly all of Southern California within commuting distance.

(In fact, the writer, a life-long resident of Southern California, who has



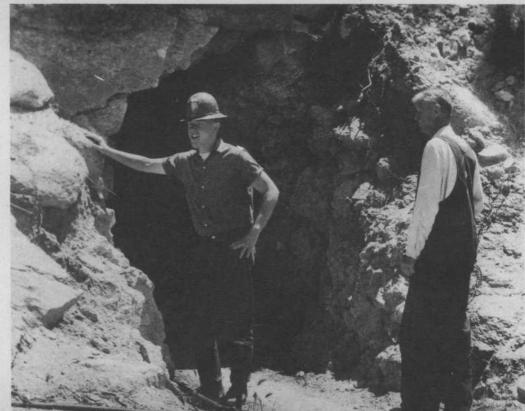
worked in this historic quadrangle most of his 58 years, couldn't find the most famous of the Perris-Gavilan Hills mines the other day, after a two-year absence. Finally, he got out of the car and walked to the old diggings by a one-mile detour, although the hoist tower in earlier years was within a few yards of the state highway.)

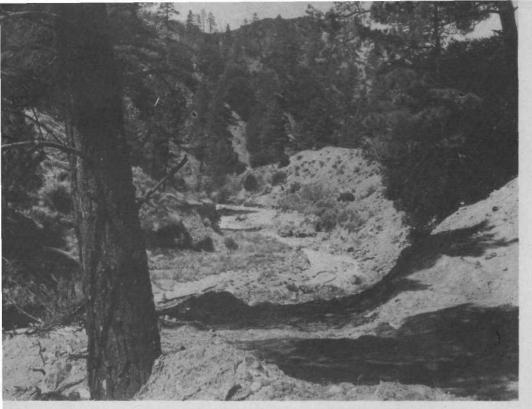
This is the optimistically-named Good Hope, which has left a legacy of many disappointed owners and lessors over the past century and endures today primarily in the name of a residential district midway between Perris and Lake Elsinore, a-straddle State Highway 74. Developed soon after the Civil War, the Good Hope at first was a placer and surface operation similar to nearby prospects worked unsuccessfully by Mexican and Indian miners since Bear Flag Republic days in the mid-1840s.

Later, the hillside quartz outcroppings were penetrated by stope and tunnel operators in the late 1880s. Finally, a decade ago, props from the mine buildings were used to hold up signs advertising stock for sale in a final tailings recovery program.

The Good Hope was one of a dozen Gavilan-Cajalco hills prospects, perhaps

Above: From the summit of Steele Peak where General John C. Fremont once had an observation point during the Mexican War, you get a panoramic view of the Gavilan Hills-Pinacate mining district near Perris. D. C. Mayne, right, and unidentified helper, stand at the main tunnel entrance [below[to the old Hemet Belle mine in the Chilson-Kenworthy district of the San Jacinto Mountains. Now 100-years-old, the gold mine has been Mayne's principal avocation for many years. He feels it still contains commercial quantities of gold.





the only one other than the Cajalco-Temescal tin mines to repay development costs. British interests in the 1890s reportedly took at least a half-million — in pounds sterling — out of that fabulous lode and an earlier syndicate had mined coal in the same region briefly before that. The original Temescal tin discovery date was 1858.

The only active mining operation in western Riverside County today, rather a quarry system, is the busy clay mines of Temescal Canyon between Lake Elsinore and Corona. There is a major underground cement operation still active also, northwest of Riverside at Crestmore, but that is outside our scope this month.

Other Gavilan mines included the Golden Charlot (spelling still subject to debate), the Santa Rosa, the Washington, the Gavilan, and most fittingly, the Pinacate.

The Golden Charlot is sometimes confused with a Julian-Banner Canyon mine, the Golden Chariot.

Speculation still persists regarding the original gold discovery date for the mysterious Gavilans. The late H.M. Harford, pioneer Perris real estate man, theorized that the first miners came across the area accidentally by discovering traces of "color" along the permanently flowing San Jacinto River, probably before the major California gold rush of 1848.

Harford made a lifelong avocation of

gold mining history, undoubtedly whetted by the stories that went with some of the old ranching and mining properties he sold in the Perris area from about 1890 on. He felt the original prospectors were, in reality, the cattle and sheep tenders assigned to the old Casa Loma Rancho of the San Luis Rey Mission. This would pin down the date as from between 1815 and about 1830, when the mission's land holdings were secularized - taken by the new Mexican government and distributed by means of grants to the Spanish-Mexican colonial leaders. These included the related Estudillo-Aguirre-Pico families who received all of the arable lands between the Lake Elsinore cienega and the foothills of the San Jacinto Mountains, 40 miles to the east.

Certainly, historic records showed that the later-day grantee descendants legally removed mining squatters, mainly Mexicans led by a Frenchman identified only as Mache, from the Good Hope site in the mid-1880s.

This record was provided to the late Dr. Horace Parker, Temecula historian, by Harford when Parker wrote a newspaper column, "Brush Country Journal," for the Riverside Press-Enterprise in the mid-1950s. Many owners or claim jumpers had operated the Good Hope and nobody, therefore, will ever know accurately how much gold was taken during the mine's relatively long history.

Parker told this writer he thought

Burnt Valley, an unexpectedly verdant canyon on the edge of old fire burns in the San Jacinto Mountains, near the little town of Anza. Pines and fir trees here have survived many scarring fires that denuded nearby slopes.

more than a quarter-million had been taken prior to 1890, when a significant report appeared from the thenoperators, a partnership identified only as Sigafus (spelling uncertain) and Bird. who established the Consolidated Good-Hope Mines Company and began extending the old main shaft below the 110-foot level and adding a series of new shafts, tunnels and adits to reach supposed new ore bodies. The spent more than \$50,000 for excavation and a stamp mill of unspecified size to process the hoped-for ore. They worked the mine into the mid-1890s, taking out an estimated \$5,000 to \$10,000 gross monthly during peak periods. At least 100 men worked the Good Hope during this bonanza period and the main shaft was cut to 575 feet.

As a stock venture, Major Frederick R. Burnham of Orange County conducted an intensive survey of the property and estimated the value of the ore body at nearly \$1,800,000. On the basis of this glowing report, the syndicate sold the mine in about 1895 to a Haverill, Massachusetts group. Production never neared the million-dollar-plus level and a lengthy court battle ensued, resulting in closure and, therefore, deterioration of the property. Water from the nearby San Jacinto River, which in those days was a perennial flow, seeped into the lower galleries and the mine was abandoned.

One reason we dwell at length on the Good Hope, in addition to its status as the richest of the Gavilan diggings, is that so much information came to light due to the court battle.

After 1900, perfection of the cyanide recovery method for gold renewed activity at the Good Hope and all the other Gavilan and San Jacinto Mountains mines that had sizeable tailings of discarded ore. This same system had also worked well at certain of the Dale District mines near Twentynine Palms.

A 1910 prospectus predicted that the Good Hope, for example, would be worth another million, on top of the nearly two million already rumored to have been removed! It didn't work out that way, al-

An unnamed mining prospect in the Burnt Valley district of the San Jacinto Mountains, thought by longtime residents to date to Mexican days more than a century ago.

though sporadic tailing operations continued until less than a decade ago.

Ironically, in the early 1960s, coincident with development of Del Webb's Sun City retirement community five miles southeast of Perris, a gold discovery was again reported by earthmoving workers, but no claim filing followed.

Southeast of the Gavilans are the remains of the Perris Valley's first community, Pinacate, which took its name from the Spanish slang term for the Eleode beetle, or stinkbug. A mining supply operation sprang up there, a mile south of present Perris, in 1882 when the California Southern Railroad built through the valley from Temecula and San Diego on its way to San Bernardino, the nucleus of the later-day Santa Fe transcontinental line.

A rock and timbered dugout shack still exists on the grounds of the Orange Empire Trolley Museum to mark the remains of Pinacate. Many old accounts give this name to the entire mining district and at least one abortive claim was called the Pinacate, too.

The little town persisted only three years until the railroad closed its boxcar station there and began to erect a handsome brick and redwood-towered terminal building two miles to the north, which it named for its chief engineer, Fred Perris. This became the junction of a branch to San Jacinto which exists today as a mobilehome, lumber carrier and seasonal purveyor of the region's famous white rose and russet potato harvests.

The Perris station, a registered national landmark, still stands in the downtown area, on the road out to the Gavilan and the Good Hope, State Highway 74. Official construction date by Santa Fe records was 1892 but it is known to be in use at least four years before that date. Either date marks it as the oldest existing railroad station in Southern Cali-

Identified only as "Frank," this old-time prospector resting on a suburban street near Hemet represents a dying breed. He said he covered the mining district for more years than he could remember.



fornia and well worth a visit. It is a community museum site today, unused by the rail carrier.

One of the old mines, little more than a shallow glory hole, has an interesting name history recounted to the writer years ago by the late Lewis Rawson, member of a pioneer Anglo-Saxon and Mexican family.

Rawson said the mine, known as the Leon, was named for a near-fatal meeting between its developer and a mountain lion who was passing by on his lengthy food-hunting circuit. True or not, the "Leon" epithet is still in use for the area southwest of Hemet and is the name of a country road as well.

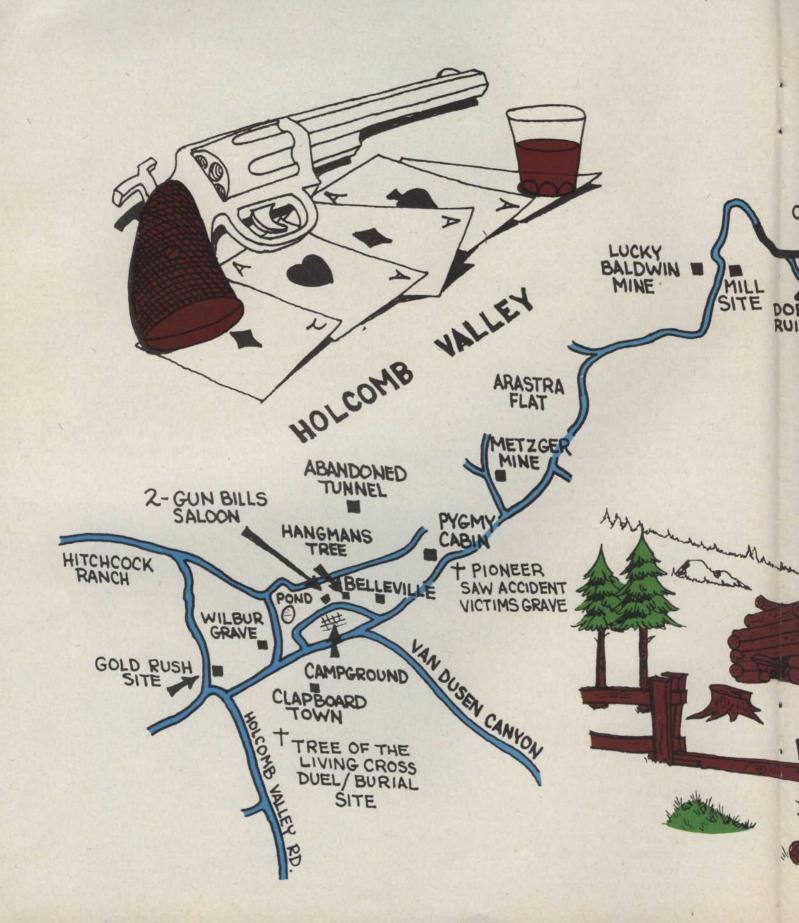
To the north of this isolated site is the remainder of the Double Butte Mine, midway between Hemet and Perris, which was still an active claim in the early 1950s. It is in the hills just south of the retirement town of Homeland.

The major mountain mines, including the Hemet Belle and others in the Chilson group dating to about 1880, are found on the rim of the San Jacintos to

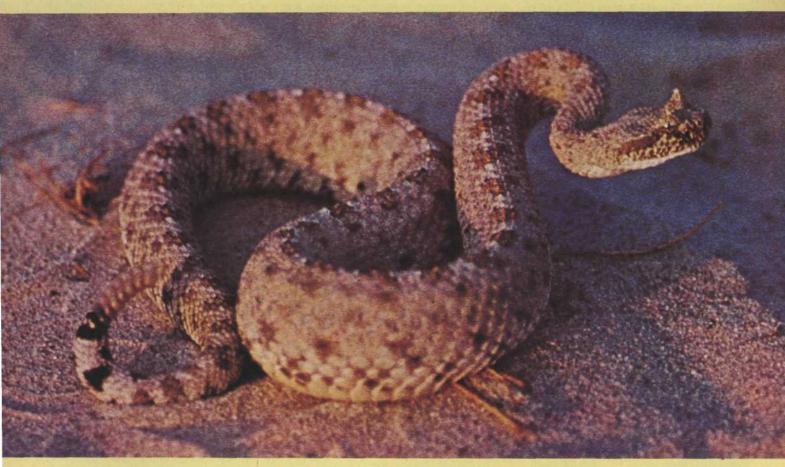
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WHERE TO FIND GOLD IN THE MOTHER LODE by James Klein. As in his Where to Find Gold in the Desert and Where to Find Gold in Southern California, author Klein guides you to the areas in which people are doing the best now. He includes history, tips on equipment needed, how to pan, how to stake claims, etc. Paperback, 121 pages, illustrated with photos and maps, \$4.95.

History

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, \$9.95.

OUR HISTORIC DESERT, The Story of the Anza-Borrego State Park. Text by Diana Lindsay, Edited by Richard Pourade. The largest state park in the United States, this book presents a concise and cogent history of the things which have made this desert unique. The author details the geologic beginning and traces the history from Juan Bautista de Anza and earlyday settlers, through to the existence today of the huge park. Hardcover, 144 pages, beautifully illustrated, \$10.50.

LAND OF LITTLE RAIN by Mary Austin. This book, first published in 1903, is an acknowledged classic of southwestern literature. The author discovered the charm and interest of the timeless and colorful world of the yucca, the coyote, the buzzard, the roadrunner. She recounts with insight and sensitivity, the lure of gold, the stagecoach towns, the Indian campoodies . . all the activities of broad valleys and spacious hills. Illus., paperback, 171 pages, \$3.95.

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SHADY LADIES OF THE WEST by Ronald Dean Miller. Everyone knows that the harlot was the vanguard of every move westward, and that she was as much of a part of the western scene as the marshal, the badman, the trail-hand or the rancher. Many are the reasons she has been neglected by the historian—none of them valid. Author Miller, in this enlightening book, seeks to remedy some of the paucity of information on the American pioneers of this ancient profession. Hardcover, comprehensive bibliography, 224 pages, \$7.95.

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NEVADA PLACE NAMES by Helen S. Carlson. The sources of names can be amusing or tragic, whimsical or practical. In any case, the reader will find this book good reading as well as an invaluable reference tool. Hardcover, 282 pages, \$15.00.

NEW MEXICO PLACE NAMES edited by T. M. Pearce. Lists and gives a concise history of the places, towns, former sites, mountains, mesas, rivers, etc., in New Mexico, including those settled by the early Spaniards. Good for treasure hunters, bottle collectors and history buffs. Paperback, 187 pages with more than 5,000 names, \$2.45.

ARIZONA PLACE NAMES by Will C. Barnes, Revised and enlarged by Byrd H. Granger. Excellent reference book with maps, Biographical Information and Index. Large format, hardcover, 519 pages, \$11.50.

HISTORICAL ATLAS OF CALIFORNIA by Warren A. Beck and Ynez D. Hasse. Extensive documentation and pertinent detail make this atlas a valuable aid to the student, scholar and every one interested in the Golden State. 101 excellent maps present information on the major faults, early Spanish explorations, Mexican land grants, routes to gold fields, the Butterfield and Pony Express routes, CCC camps, World War II Installations, etc. Hardcover, large format, extensive index, \$12.50.

HISTORICAL ATLAS OF NEW MEXICO by Warren A. Beck and Ynez D. Hasse. Geographical data, sites of prehistoric civilizations, events of history, first towns, stagecoach lines, historic trails, etc., are included in this comprehensive atlas. Excellent maps, index. Hardcover, large format, highly recommended, \$9.95.

DESERT EDITOR by J. Wilson McKenney. This is the story of Randall Henderson, founder of DESERT Magazine, who fulfilled a dream and who greatly enriched the lives of the people who love the West. Hardcover, illustrated with 188 pages, \$7.95.

RAILROADS OF ARIZONA VOL. I by David F. Myrick. More than 30 railroads of Southern Arizona are presented, together with 542 nostalgic illustrations, 55 special maps and an Index. A valuable travel guide and a reliable historical reference. Large format, hardcover, 477 pages, \$19.50.

History

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RETRACING THE BUTTERFIELD OVERLAND TRAIL THROUGH ARIZONA by Gerald T. Anhert. This book was written to mark the physical route and station locations in the most hazardous segment of the Butterfield Trail—Arizona. The author's original intent was merely to find, follow and map the Trail, however, the long and difficult task resulted in putting this vital information in a book which makes it easy for others to follow, or to provide a delightful armchair journey over this dramatic route. Profusely illustrated with maps and photos, this book is a visual hand-tool to the explorer; an exciting segment of Americana to the scholar and historian. Large format, hardcover, \$9.75.

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WILLIE BOY by Harry Lawton. The story of an uncomparable Indian chase, its unexpected conclusion, woven into an authentic turn-of-thecentury history of California's Twentynine Palms country. This desert classic offers rare insights into Indian character and customs, as well as a first-hand look at a colorful desert region as it was nearly a century ago. Historic photographs and colorful maps, paperback, \$4.95.

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THE COLORFUL BUTTERFIELD OVERLAND STAGE by Richard Pourade and Marjorie Reed. With 21 stage coach paintings by Miss Reed, the text concentrates on the Fort Yuma to San Francisco run of the tough Butterfield route. Album format, heavy art paper, \$6.50.

THE LIFE, TIMES AND TREACHEROUS DEATH OF JESSE JAMES, by Frank Triplett, edited by Joseph Snell. Published originally the month following Jesse James' murder in 1882, controversy has surrounded Triplett's book for almost 90 years since its first appearance. This present reprint brings to the public a work of both historical value and personal interest, made more significant historically by Joseph Snell's editorial contributions, and made more interesting by the passing years which have continued the facts and legends of the most renowned outlaw of America's West—Jesse James. Hardcover, well illustrated, 343 pages, originally published at \$15.00, now priced at \$7.50.

Miscellaneous

RUFUS, by Rutherford Montgomery. From one of America's best-loved children's nature writers comes the story of Rufus, a fierce and proud bobcat struggling against nature and man. As Rufus grows and matures, his exciting adventures make fascinating reading for adults and children alike. Hardcover, 137 pages, \$4.95.

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OREGON'S GOLDEN YEARS by Miles F. Potter. Men in search of treasure opened the gates to the wilderness. This book—with affection and good humor—honors these men and their imperishable lust for gold. Paperback, large format, well illustrated, extensive Bibliography and Index, \$7.95.

SUCCESSFUL COIN HUNTING by Charles L. Garrett. An informative study of coin hunting, this is a complete guide on where to search, metal detector selection and use, digging tools and accessories, how to dig and the care and handling of coins. A classic book in the field. Newly revised, paperback, \$5.95.

HOW TO COLLECT ANTIQUE BOTTLES by John C. Tibbitts. A fascinating insight of early America as seen through the eyes of the medicine companies and their advertising almanacs. Excellent book for the avid bottle collectors and those just starting. Also includes chapters on collecting, locations and care of bottles. heavy, slick paperback, well illus., 118 pages, \$4.00.

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 medicine. Buckram cover, well illustrated, 188 pages, revised edition boasts of 96 4-color photos added. \$4.95.

THE MAN WHO CAPTURED SUNSHINE, A Biography of John W. Hilton by Katherine Ainsworth. Although John Hilton is best known as the "Dean of American Desert Painters," he is also a distinguished botanist, gemologist, zoologist, noted writer and linguist, guitarist and singer. Anyone who has seen or heard of Hilton's marvelous talent will want to have this delightfully written biography. Hardcover, includes eight beautiful four-color reproductions of his paintings, \$12.95.

GUIDE FOR INSULATOR COLLECTORS by John C. Tibbitts. This is the third and final book on insulators by veteran bottle collector John Tibbitts. This third book has a revised price list and index to insulators described in the previous two volumes. However, each volume describes insulators not shown in the other books, so for a complete roundup of all insulators, all three volumes are needed. Books are paperback, averaging 120 pages, illus., \$3.00 each. Please state WHICH VOLUME when ordering.

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, in addition to desert wildlife, mines, ghost towns, and desert hobbies. Paperback, illustrated, 10 maps, 134 pages, \$3.95.

ELECTRONIC PROSPECTING with the VLF/TR Metal/Mineral Detector by Charles Garrett, Bob Grant and Roy Lagal. A handy reference for anyone using late-model metal detectors, written by experts in this expanding field. Contains many hints on how to find gold and other treasure ores and artifacts with a good bibliography and appendix. Paperback, 86 pages, numerous illustrations, \$3.95.

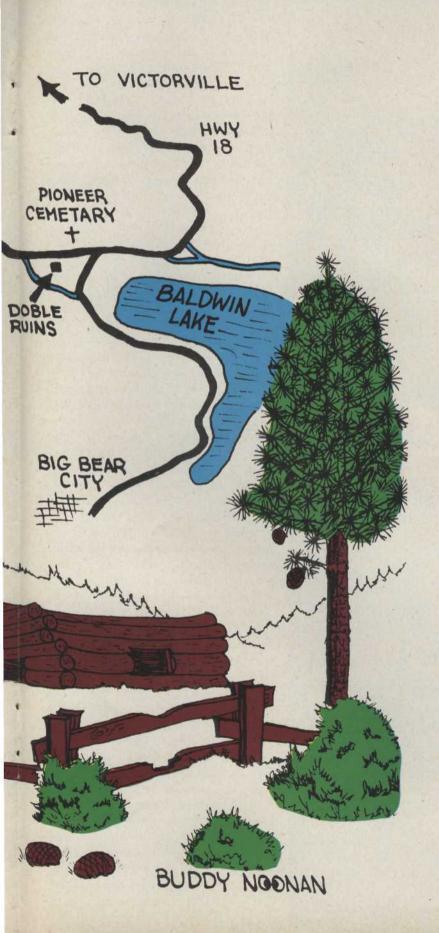
FROSTY, A Raccoon to Remember by Harriett E. Weaver. The only uniformed woman on California's State Park Ranger crews for 20 years, Harriett Weaver shares her hilarious and heartwarming experiences being a "mother" to an orphaned baby raccoon. A delightful book for all ages. Illustrated with line-drawings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

LIMBO by Carobeth Laird. A chilling but fascinating personal memoir of life in a nursing home by a survivor, who was also the author of Encounter with an Angry God and The Chemeheuvis. Mrs. Laird was 79 during the experiences she describes, and 81 when she completed this book, already being hailed as a landmark work for potential change in the nursing home scene. Paperback, 178 pages, \$5.95.

TO HELL ON WHEELS by Alan H. Siebert. A must for every desert traveler, this is not just another survival book, it is a manual of mobility for the recreational vehicle driver who is looking for something more than the organized campground. Highly recommended for both the newcomer and old-timer. Paperback, 64 pages, well illustrated, \$2.95.

EARTHQUAKE COUNTRY by Robert lacopi. New, revised edition brings maps and descriptive text up to date as nearly as practicable. Well illustrated, the book separates fact from fiction and shows where faults are located, what to do in the event of an earthquake, past history and what to expect in the future. Large format, slick paperback, 160 pages, \$4.95.

SVALLEY



When you track a bear you might find gold instead!

by BUDDY NOONAN

IGH IN the San Bernardino mountains in Southern California is a jewel called Big Bear Lake. It was the extreme pleasure of my wife and I to live in that refreshing, forested coolness for 16 months. But, during that time, I was always amazed at the great number of visitors and citizens alike who were not aware of the fabulous gold rush country only six miles distant in Holcomb Valley. Perhaps, like me, you've discovered it already and have completed numerous visits. But for those who haven't, let me introduce you to this pioneer country.

Local inquiry concerning road conditions, camping fees and fire permits can be made at the ranger station near Fawnskin. Rendezvous for this loop trip is Baldwin Lake (sometimes dry) at the eastern end of Bear Valley opposite Big Bear Lake. The ranger's map or road marker will indicate where to turn left off Highway 18 towards Holcomb Valley. The pavement will end shortly, giving way to dirt, so some thought should be given to what type of vehicle you are using. I've traveled this route in practically every type, including low sedans, but it's best for small cars, pick-ups and four-wheel-drive

Keep alert on the right side half a mile from the turn-off. Through the trees is a large white cross. Pulling off on the old hearse road will bring you to the Doble graveyard. The main cross and smaller markers were placed here in the 1940s by a Boy Scout troop and maintained since. But they are only a small indica-



An ore chute [above[, left almost intact from E. J. Baldwin's fabulous gold mine, overlooks Baldwin Lake. A sign designates this old cabin [below] of the 1860s as "Two-Gun Bill's Saloon."



tion of the large numbers of pioneers buried here.

Returning to the main road you will soon see wooden ruins to your left. This is all that remains of the gold boom town of Doble, built in 1861. These, along with scattered glass and square nails are all that is left. Another mile brings us to E.J. "Lucky" Baldwin's Doble Mine. The same "Lucky" Baldwin whose fabulous estate in Arcadia, California is featured on TV's Fantasy Island. A sturdy, massive ore chute remains as a striking epitaph to the Baldwin fortune.

Traveling further starts our descent into Holcomb Valley. There are few signs of 1979 except occasional forestry markers. Wildlife is more visible with birds and squirrels. A sign indicates a turnout and "The Metzger Mine." It's worth the time to pause and hike several hundred feet to this hand-hewn tunnel and caved-in miners' cabins.

Back on the road again, two more miles brings us to an odd sign, "Pygmy Cabin." It received its strange name because of its size. You'd have to be three and a half feet short to make it through the door comfortably. Obviously here a long time, probably built during the gold rush of the '60s, historians have pondered down through the years as to a reason for its small size. The best theory is that it was constructed in haste during a heavy snow storm.

One mile away is the marked site of Belleville. Built in 1861, very little remains of the old boom town because of vandals and the elements. This is amazing when you realize that it was the largest voting township in 1862 and just missed becoming County seat. You can still find faint traces of her, however — rough foundations of the "Hexagon House" and an original arrastra used to crush gold ore. There's a miner's cabin in almost perfect condition, transported here a few years ago from Big Bear Lake by the Forestry Service to add color.

Opposite it is the original "Hangman's Tree." About 10 years ago, it was threatened with possible extinction by vandals. Rangers erected a "carving board" near it with an invitation to deface it instead of the tree. The carving board remained unmarred while the old tree continued to be marked and shot-up. As a result, all markers indicating that this was, indeed, the original Hangman's Tree were removed and

placed at another one down the road.

We're now at the Holcomb Valley campground. As a dry camping area, it's good that we brought our own soft drinks and drinking water for picnicking. Selecting a table, we spread out our feast, whether it be peanut-butter sandwiches or an entire buffet. We've worked up a real appetite, and food seems to taste better here with the refreshing pinescented breeze and smog-free air.

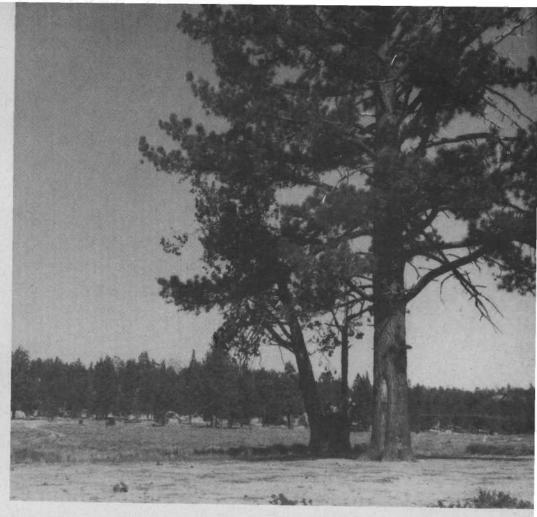
After lunch, we follow the signs to the "newer" Hangman's Tree. This is the one that was selected after so much vandalism to the original. It's not disappointing, however, since it undoubtedly was used for the same purpose as the former, as were many of the trees in this once lawless area.

Not far from it is "Two-Gun Bill's Saloon." Obviously very old, there is a remarkable amount of construction remaining with it, despite vandal efforts to dismantle and burn its logs. For what she retains by simply still standing, she certainly has lost through history. When I was a boy of 10, she was marked as Bill Holcomb's cabin. In 1962, the sign was changed to Bill's Saloon. I have never been able to find even one vague statement in history as to who "Two-Gun Bill" was, what he did or even if he had a last name. But whatever the old cabin's origin, you can be sure that she was part of another era, the rush for gold.

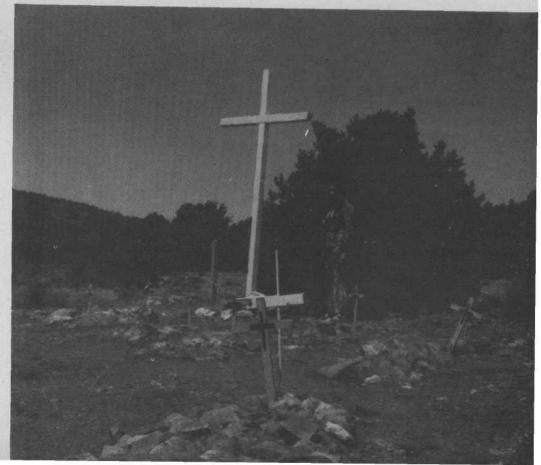
Wilbur's Pond, close by, was the scene of a lot of gold activity and still finds occasional "panning" by modernday prospectors. Wilbur, first county assessor, for whom the pond was named, is buried nearby in a marked grave.

Evidence of gold mining and prospecting is visible everywhere in the valley. In some cases you have to walk right up on relics to discover them — an old ore crushing mill, a tunnel camoflauged so well that you have to know what you're looking for, above-ground mine scaffolding.

Before departing via Poligue Canyon, we pause to try and take it all in until our next return. This is Bill Holcomb's valley. He discovered it in May, 1860 while tracking a bear. The reward for his efforts was gold. And although the gold has long since been spent, he, and those that followed his footsteps left a bigger reward for us. The relics, ruins and intrigue of the old West . . . in Holcomb Valley.



Above: It is said that each branch missing represents someone executed at the Hangman's Tree in historic Holcomb Valley. A pioneer graveyard [below] is all that's left to mark the once booming gold town of Doble.



Host TO A Horde of Hummers

by LORETTA BERNER

Photos by Lynda Berner

HE HUMINGBIRDS of Pine Cove, California, located just north of Idyllwild, live the Life of Reilly. Easy living and a willing provider who caters to their every whim are theirs for the asking. By merely voicing their demands as

they loll around in trees, they receive what they consider their just rights, namely red-colored sugar syrup served up in handy tube-equipped feeders.

A quiet drama of selfless devotion unfolds itself every morning as their benefactor, Ray Adams, hurries out the door of his mobile home office. Armed with a big aluminum coffee pot and a half gallon bottle of sugar syrup, he fills their feeder bottles with a speed born of long practice. The night has been long and tiny stomachs need filling after long hours of torpor-like sleep. But this will not be just a once a day chore! Depending on the size of the flocks of birds in the area, he may be seen filling those bottles three or four times a day. After 24 years of dedication, he has learned those birds depend on him, and he can't bear to disappoint them.

Now when Ray put up the first feeder outside his office window back in 1955. he had nary a customer! Discouraged after several days he gave the first feeder to his friends the Wrights, across

Just why Ray's first attempt was a failure, no one knows, as there were many hummers in the area. But soon after Dick Wright hung that feeder outside his



Mr. & Mrs. Ray Adams watch

the hummers at Humming Bird

Corner, Pine Cove Rd. and Sylvan Way.

motel office window, it was surrounded by hummers. Ray, deciding he'd been a little hasty, bought another feeder and again hung it outside his office window. When the birds discovered this new bonanza, the rush was on. Hourly Ray and Dick filled those first feeders. Soon they realized that more and more birds were arriving with the expectation of free eats. Wondering just what they had gotten themselves into, they went out and bought more feeder bottles. By the end of the summer each man was supplying sugar syrup in 10 bottles at each place. Winter and its cold weather put an end to the project for that year, and everyone wondered if the birds would return the next spring.

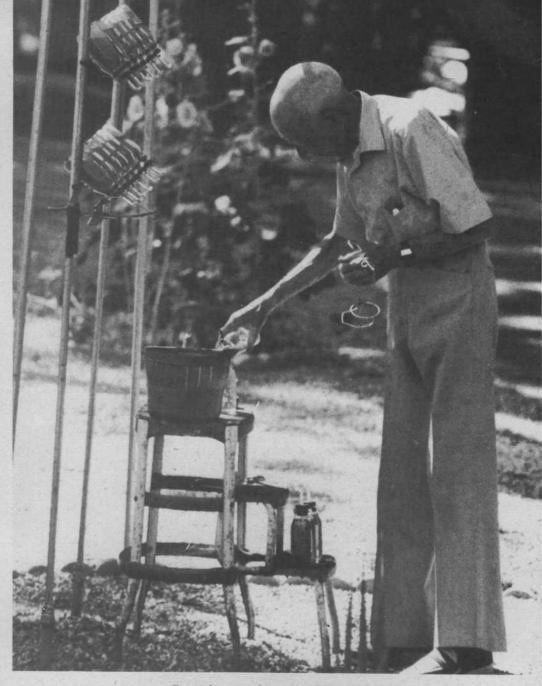
Return they did, and have continued to return to this mountain area in huge flocks every year since. More bottles were acquired until at one time the men had 80 bottles in use around their places.

It was then they decided that drastic changes would have to be made in their equipment. They finally chose eightounce chinchilla water bottles, with feeder tubes and perches. From 10 to 20 were kept in use at each place during the peak months of July and August, when migrating birds come through the area. Then each place used an average of 300 pounds of sugar a month and red food coloring was bought by the quart.

This pattern of feeding the birds by the two families continued for 18 years, then, because of long absences from this mountain community, the Dick Wright family reluctantly had to give up their part in this feeding operation. Ray Adams now added more feeders to his set-up and during July and August keeps from 45 to 60 bottles filled for those hungry hummers.

The main pattern of humming bird occupation in this forest area is an increase of flocks during the time the wild flowers are in bloom, gradually decreasing as summer passes. But since the installation of the feeders at "Hummingbird Corners" (residents coined the name), these hummers start arriving in March, and some few do not return to the low-lands as was their wont, but remain through the cold months even though there is snow on the ground. They seem to know they will be fed and cared for. Ray, of course, always obliges with the loving care they thrive on.

There is an Indian legend that states,



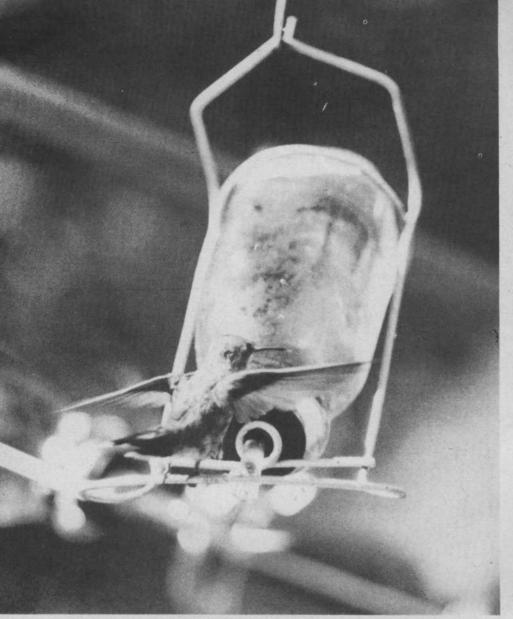
Roy Adams washing a feeder.

"The hummingbird was created from a tiny flame which fought for life in the center of a dying volcano. Instead of death, the Great Spirit decreed that this bit of flame would be destined to live among earth's people in a new form, that of a tiny bird. The color of fire was to be carried on its throat, and all men would love its irridescent beauty as it sipped nectar from flowers."

Hummers are one of the world's smallest birds, and are often referred to as the insects of the bird world. They have enormous appetites and must eat every 15 to 20 minutes during the day because their stomachs are so small and their energy requirements so demanding. They use great amounts of energy

moving their wings up to 80 beats a second, depending on size and species. They also consume a certain amount of protein consisting of small insects and spiders which they scoop up with their long tubular tongues when in flight or while sipping flower nectar.

Hummingbirds are not found in the eastern hemisphere, and live only in North, South and Central America. Of the 16 species found regularly north of the Mexican border, only one, the Ruby throat, is found east of the Mississippi River. They range from Florida to Alberta and Nova Scotia. There are six kinds in California, but only the Annas. are year-round residents. Some species nest in the mountains, others in the low-





Ready to take off, wings reversing.

Three on a feeder.

lands, and still others only stop awhile before going on to other areas. At Pine Cove the Caliopes arrive in March, some Annas come from the lowlands in May, with the Costas, Rufus, Allens and Black Chinned all coming at once in July. 16 species are found north of the Mexican border, while the rest are found in South America. Columbia has 105 different kinds and Ecuador has 148.

The fact that migrating flocks have found this feeding station, and make it an annual stop on their journeys always amazes Ray. "When flocks are migrating I've counted as many as 200 of these birds just sitting on the telephone wires resting. Hundreds of them come through here and stop over from three to five hours. The place comes alive with them."

Of course when this project was

started 24 years ago no one dreamed that Nature Clubs, Audubon Societies, school tours and even the vast Night Owl's Club of radio fame would join scientists and photographers in visits to the Corners. Least of all did Ray expect to be regarded as an expert on the habits and behavior of these birds.

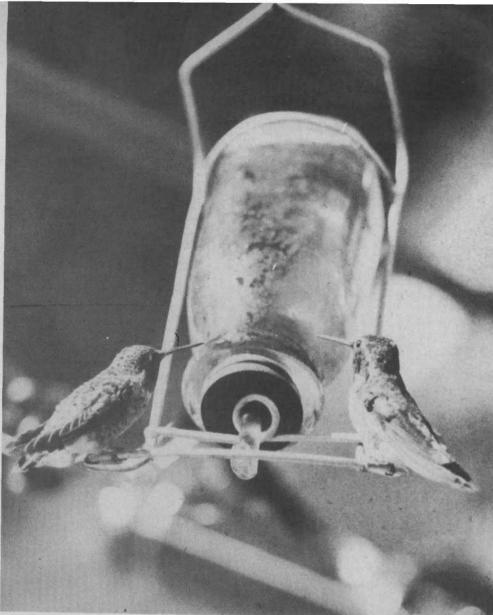
Among the scientists and naturalists who have studied flocks at the Corners is Dr. Robert C. Lasieswski, of the Zoology Department of U.C.L.A. An authority on hummingbird behavior and habits, he conducted extensive studies at the Corners, examining the torpid state they assume while sleeping at night, measuring heart beats, breathing rates, temperatures, food intake, energy requirements, oxygen consumption and flight metabolism. He estimated the flocks using this feeding station as between

3,500 and 4,000 birds during the summer months.

Another visitor to the Corners was Crawford H. Greenwalt, whose book Humming Birds contains pictures of many of the 600 recorded varieties of humming birds found in the western hemisphere. Because the six varieties found in California do not visit the mountain areas at the same time. Mr. Greenwalt had to make two trips out from the East in order to photograph all of them.

Hummers fight so much among themselves that scientists wonder if they fight just for the fun of it. They stake out a feeding ground and will fight off all intruders, yet at feeding stations such as the Corners, they will share an artificial feeder. As many as five of these pugnacious little creatures have been observed sitting quietly side by side on the perch-





Two Black Chins pause a moment while feeding.

es at these feeders. Ray is fascinated by their comical displays of temper. "Their natural instinct is to clear the way, they don't want another bird around. The youngsters even chase the adult birds, and it's really funny to see a fluffy little bird come out of the nest and try to chase all other birds away."

Hummers can route hawks 100 times their size because of their unique flying abilities. Their bodily structure is different from that of any other bird. Hummers are the only birds that can hover motionless, maneuver in all directions and fly backwards. Like a helicopter, they can rise directly upward without a runway for takeoff. Unlike other birds which generate propulsion power only with the downbeat of their wings, hummers can generate propulsion power with both the upbeat and downbeat of

their wings. They are curious and fearless because they know they can move faster than most of their enemies.

Several years ago it was suggested honey would be a more natural food supplement for the birds then sugar syrup. A large amount of honey was purchased and various formulas tried in the feeders. It might have been more scientific, but the hummers had ideas of their own. They refused to eat it and set up an accusing clamor when they found it in the feeders. No one knows for sure which diet really is the best for them, or whether they were just spoiled by an ever-ready supply of sugar syrup. The honey was given away and the old formula of three parts warm water to one of sugar, laced with red food coloring was put back in the bottles. The hummers returned to the feeders in droves.

There is a fable that states, "A traveler from Europe who was resting under a tree heard a loud buzzing noise and looked around for its source. He finally noticed a very small bird, not much larger than a bumble bee, sitting on a twig. Astonished, he asked, "Is it you little insect, that made such a loud humming noise?" "Yes," replied the bird, "but you ought not to be surprised, since among both men and animals, those of least consequence make the most noise."

As Ray washes and fills feeders in this his 24th year of service he does not think these small birds are of "least consequence." Like Audubon, he regards them as "glittering fragments of the rainbow" given into his keeping to enjoy. He is pleased to be able to share his rare experience with others.

Sea of Sand

by THOMAS M. JENKINS

DESERT exists at the eastern edge of the San Luis Valley of south-central Colorado caught in a natural wind-trap formed by a sweeping inward curve of the Sangre de Cristo Mountains: the Great Sand Dunes National Monument. An ocean of sand shaped and reshaped by the tides of the wind, its sculpted ridgetops ever-changing for millenia yet remaining the same underneath, the dunes are a captivating phenomenon.

Three times the size of the state of Delaware, the Great Sand Dunes are among the tallest inland sand dunes in the world, piled in places to heights of 700 feet. Wild and beautiful, the Great Sand Dunes National Monument is an anomaly — a high cool desert formed over a period of 35 million years by the combined forces of erosion, glaciation and the relentless wind.

The prevailing southwesterlies blow across the San Luis Valley for 50 miles, as they have for eons, bouncing sand and dust toward the Sangre de Cristos. Each grain bounces a short distance at a time in a perpetual process called saltation.

Eventually, when the wind hits the rocky wall of the mountains towering 6,000 feet above the valley floor, it is funneled through three passes (Music, Medano and Mosca), escaping with a rush of turbulence. Consequently, the wind loses most of its energy and its load of sand. Thus the dunes have collected over the centuries.

Although the dunes most often reflect the force of southwest winds, reversing storm winds from the northeast contribute to holding the dunes to a relatively stable position on the valley floor, blowing their crests back into new shapes and configurations. They can move dune crests to the west as much as 18 feet in 24 hours, building up impressive heights. In this way, the leeward side (called slip faces) of these dunes will face west along each storm-shaped crestline, resembling the Great Wall of China in miniature. The slip faces never form at angles steeper than 31 degrees from level ground (called an angle of repose); dry sand grains cannot maintain steeper angles.

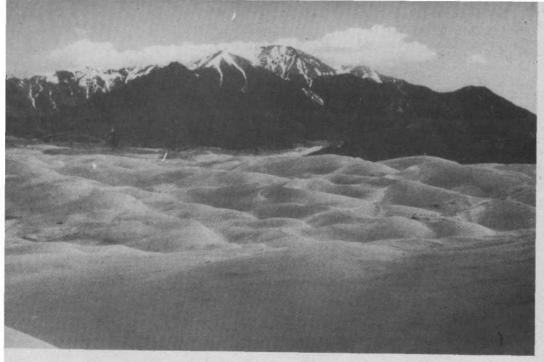
Various dune patterns exist: trans-

verse dunes with large quantities of sand burying all vegetation; barchan, a kind of transverse dune with a crescent shape with its top reaching forward (leeward); parabolic dunes which are U-shaped scoops of sand with points tapering to windward; and climbing dunes, forming when turbulent winds rise over obstacles, piling sand in loose masses. The Great Sand Dunes include some of the world's most spectacular reversing dunes, the northeast wind blowing new sand particles to the top of large transverse dunes (to 700 feet) heaped for nearly 10 miles along the foot of the mountains.

The Great Sand Dunes National Monument and its environs are a spectrum of ecosystems. From the aridity of the dunes upward to the snowy peaks of the Sangre de Cristos, there are as many contrasting environments as on a journey from the Southwest deserts to

Medano Creek and the San Dunes.
Photo by Jonathan Berman,
Sky Forest, California.





The Sand Dunes at the foot of the Sangre de Cristo Mountains.

the Alaskan arctic. This continum is determined by two major factors — water and temperature. With the increase of altitude, temperatures drop and water becomes more abundant. Cottonwoods along Medano Creek, immediately adjacent to the dunes, yield to grasslands reaching to the pinon and juniper woodlands of the foothills. Above them are dense mountain forests which rise to where trees cease to grow — timberline — and finally to the alpine tundra leading to the soaring summits.

The various ecosystems experience dramatic seasonal changes with green

bursts of spring, the throbbing heat of summer, the mellowing golds of autumn and the snowy intensity of winter. Each has its own ecological functionality, its unique traits of beauty; but all the ecosystems of the Monument coexist in nature's mosaic.

Within themselves, the sand dunes are a world of contrasts, a stark but lovely microcosm of the living and the dead. It is an ecosystem of extremes, with excruciatingly high daytime summer temperatures (the surface of the sand can reach 140 degrees) and raw-cold winter nights. With scarcity of food

and water (less than eight inches annually, most of it from July and August afternoon thunderstorms), some wild creatures fail to survive; others benefiting from the fringe areas of grassland as well as their own adaptive strategems, flourish.

A network of varying adaptability makes this possible. One interesting creature is the Great Sand Dunes tiger beetle, which is found nowhere else in the world. Another is the fascinating kangaroo rat, an active little rodent that has so adjusted its metabolism and life pattern it need not drink at all. It does not perspire and has such efficient kidneys and intestines that it loses minimal water through its skin and by excretion. Its food source is almost exclusively seeds, which it stores in its burrow where the air is more humid; as it digests the seed, water is formed as a byproduct.

Although other animals, such as the coyote and the great horned owl, adapt by eating the usually adaptable kangaroo rat, its keen eyesight and hearing aid its survival chances. Stephen Trimble explains that "when danger approaches, the kangaroo rat kicks sand in the face of the enemy, then jumps away full-speed on its strong hind legs using its tail as a rudder. Its great leaps and skillful dodging make it a difficult target."

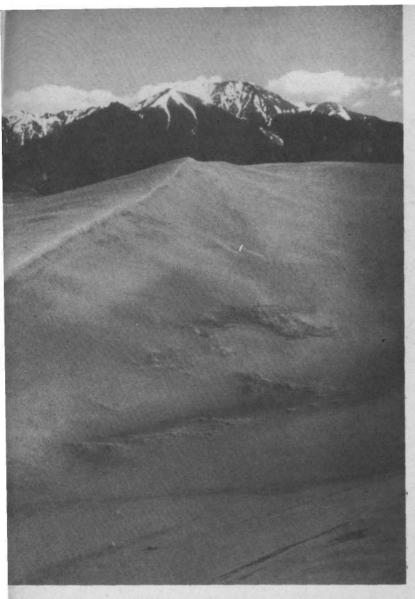
The adjacent arid grasslands comprise another ecosystem, one of relative lushness and activity. Sand dunes are stabilized by grasses and desert shrubs from which green-tailed towhees and vesper sparrows sing. Although the bison are long gone from the grasslands, a small herd of pronghorn (reintroduced in the early 1960's) range through various kinds of grasses, including wheatgrass, Indian ricegrass and blue gamma, as well as sage, greasewood and snakeweed.

Somewhat higher, the rocky foothills containing pinon pines, Rocky Mountain junipers and one-seed junipers constitute still another ecosystem. Precipitation is greater but not enough to prevent slow and scattered growth of the trees. They nevertheless provide shade and sanctuary for busy chipmunks and yellow-rumped warblers eating purple gooseberries and pinon jays noisily pursuing the sweet pinon nuts.

From the higher elevation ecosystems, herds of mule deer come down into the

Medano Creek, the Sand Dunes and the Sangre de Cristo Mountains.





The Sand Dunes and the Sangre de Cristos.

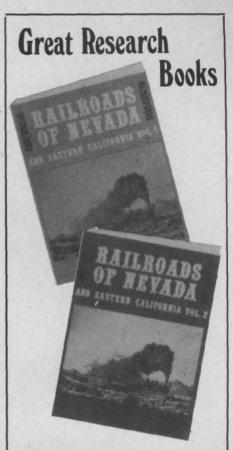
grasslands, usually at dawn, foraging everywhere, sometimes almost to the edge of the dunes. They are notorious for their hungry persistence in the three ranger-managed campgrounds, nosing picnic tables and pawing trash cans with unexpected impudence. On a couple of ridges extending down into the Monument, there are ponderosa pine, Douglas fir, occasional white fir and blue spruce which shield the movements of elk in winter and sometimes Rocky Mountain bighorn sheep as they descend to the upper boundaries of the more populated areas.

Small streams trickle and tumble throughout the ecosystems with cotton-woods growing along the lower creeks, which invariably dry up in summer, with aspen along the creeks at higher elevations. Medano Creek, a wide and shallow pulsating stream in the early summer, is usually dry by the middle of July; before it disappears, a portion of the stream is a "Jeep trail," a favorite

expanse for four-wheelers who speed down the middle of the creek splashing water 25 feet in the air.

Proclaimed a national monument by President Hoover in 1932, the dunes have been a steadily-increasing tourist attraction, although few visitors and campers stay long enough to learn about all the wildflowers (wild four-o'clock, evening primrose, scurfpea rhizomes and blazing star blossom, among others), the wild animals and the 150 species of birds.

The Great Sand Dunes National Monument is mostly a product of the wind. Its variable changes, moods and colors are bewitching. If an observer of its chiaroscuro patterns of the shifting dunes can remain aloof, then he should ponder the deceptively irrelevant fact that a grain of sand measures oly 1/8 to 1/4 of a millimeter in diameter and that the number of grains deposited over the past 35 million years constitute mind-blowing cosmic numerology.



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NO. 35 IN A SERIES ON CALIFORNIA PALM OASES

Rockhouse Canyon

by DICK BLOOMQUIST

The two veteran palms at Rockhouse oasis in the In-Ko-Pah Mountains. Pencil sketch by author.



WO ROCKHOUSE canyons crease the Anza-Borrego Desert. The betterknown one drains the Santa Rosa Mountains many miles to the north in former Cahuilla Indian territory. It contains several ruins of stone cabins, but no palms. Our Rockhouse, in the In-Ko-Pah Mountains in the southern corner of the Anza-Borrego country, offers one building of stone and, in a tributary, 12 Washingtonias.

Rockhouse Canyon is itself tributary to Carrizo Canyon, that long, winding watercourse born high in the Jacumba and In-Ko-Pah ranges not far from the Mexican line. Near its source, where it bears the name "Carrizo Gorge," it is a mighty cleft indeed. Some distance downstream it becomes a mere canyon, and after striking the desert floor near Bow Willow its title changes once again, this time to "creek" or "wash." It then pierces the Carrizo Corridor - route of the Southern Emigrant and Butterfield trails - and skirts the Carrizo Stage Station site before joining San Felipe Creek southwest of the Salton Sea. Carrizo, a frequently encountered place name in the arid lands of the United States and Mexico, is the Spanish word for the common reed.

Rockhouse Canyon enters Carrizo from the west two and one-half miles from San Diego County Road S2. Al-

though I have never had to shift to four-wheel-drive along this route, extra traction is good insurance, since soft sands are the rule outside of the most heavily used set of wheel tracks. Soon after breaking off from Carrizo Canyon, Rockhouse begins a one-mile run through squat hills, then opens up into an elongated valley, high above which the palms — located on public land outside the state park — are faintly visible amid a patch of dense vegetation.

A little more than three miles from the junction with Carrizo, our roadway passes the cowboy line shack which has given the watercourse its name. Nestled at the base of a hill near a fork in the canyon, the 10-by-10 cabin has the look of the Old West — except for its metal roof, that is. Wooden door, dirt floor, bedstead in one corner, fireplace in another, bench and shelves along the far wall — all add up to a pleasant shelter which blends well with its unspoiled desert setting. Occasional campers are its principal occupants today.

The rock house holds a fond place in my memory, for it was here I saw my first bighorn sheep. One warm April day, while taking a noonday siesta in the doorway, I glanced toward the neighboring ridge. Silhouetted on its crest stood five sheep, at least one of which was a ram with massive recurved horns. Soon a

sixth joined the others. Despite the heat two of them remained at the summit for a considerable period, giving me ample time to study them with field glasses. A ponderous chuckwalla lizard resting in the shade of the eaves also kept me company at the little cabin in Rockhouse Canyon.

Three-tenths of a mile beyond the stone house, the road ends and the hiking portion of our journey begins. As indicated in the log, reaching the palms is not a simple matter of walking straight up the canyon, for there are three forks along the way. A right turn is required at the first two, a left turn at the third.

The hillside shone with color as I worked my way upstream. The month was April, following an unusually wet winter, and the desert was alive with green grass and wildflowers. Especially striking were the luminous magenta blossoms of beavertail and hedgehog cacti, the rich indigo of wild Canterbury bells [Phacelia campanularia], and the cheerful yellow of poppies.

Just inside the mouth of the fork leading to the oasis, I found bees buzzing about a honeycomb set in a cavity at the base of a rocky chute. Before long the palms came into view, their fawn-colored skirts and emerald crowns rising above a plot of thick undergrowth near the head of the ravine.

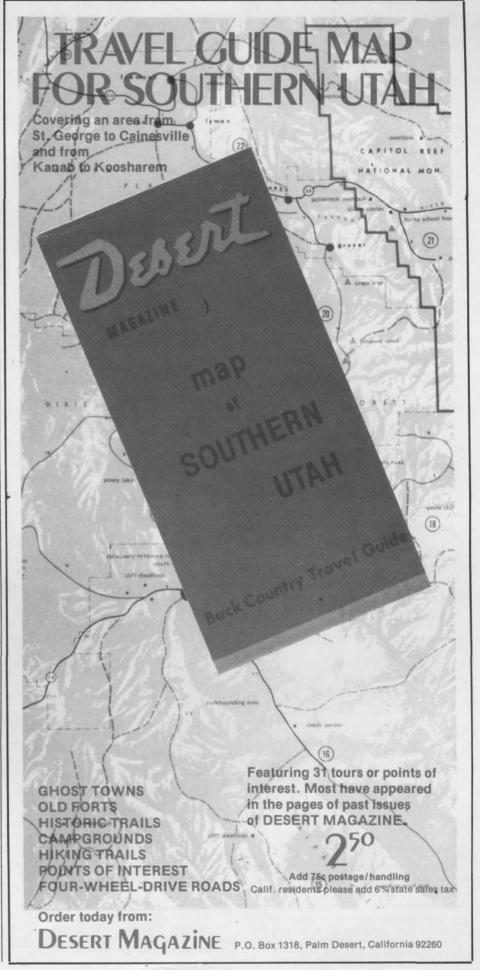
Twelve scattered Washingtonias — two of them veterans about 27 feet tall — make up the grove. The two mature trees, their stout, partially bared trunks revealing faint fire signs, stand side by side in the right rear corner of the oasis. Fire has not yet struck the shaggy younger palms. One erect dead bole also survives among the living trees.

MILEAGE LOG

- 0.0 Junction of San Diego County Road S2 and dirt road to Bow Willow Campground in southern part of Anza-Borrego Desert State Park. Drive south on S2 toward Interstate Highway 8.
- 0.3 S2 crosses Carrizo Wash. Turn right off S2 and drive up wash on sandy road. Four-wheel-drive recommended.
- 0.4 Fork. Bear left. (Right branch leads to Bow Willow Campground.)
- 2.8 Fork. Take right branch into Rock house Canyon.
- 6.0 Rock house on left.
- 6.3 Road ends. From here it is a hike of perhaps one and one-third milesand a climb of one thousand feet-to the palms. Head up the canyon, detouring along the lower left-hand slope for a short distance to avoid jumbled boulders in the dry stream bed. Not far beyond this detour, take the first tributary joining the main canyon from the right. A few yards ahead there is a second fork. Bear right here, also. Continue for a few hundred yards to where a rock marker placed across the gully calls attention to still another fork. Follow the left-hand branch to the oasis. A steep, narrow chute in the rocks, easily by-passed on the left, further identifies the entrance to this fork. Elevation at oasis 2720 feet.

Luxuriant vegetation surrounds the Washingtonias despite a lack of surface water. Some small oaks and an elderberry - species not often seen in desert country - grow here; the former are either scrub or canyon oaks. Two medium-sized willows and a jungle of sugar bushes also green the landscape. In bloom were wild heliotrope, purple nightshade, yucca, white forget-me-not, brittlebush, poppy, wild Canterbury bell, hedgehog cactus, and elderberry, among others. In the variety of its plant life and the presence of non-desert species, Rockhouse oasis recalls Dos Palmas in the Santa Rosas (Desert, June, 1977).

From rewarding Rockhouse Canyon we'll return to Carrizo, then continue southward to the next tributary entering from the west.



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Calendar of Events

This column is a public service and there is no charge for listing your event or meeting—so take advantage of the space by sending in your announcement. We must receive the information at least three months prior to the event.

OCTOBER 13 & 14, 4th Gem & Mineral Show sponsored by the Sierra Pelona Rock Club, William S. Hart High School Cafeteria, 24825 N. Newhall Ave., Newhall, Calif. Admission 50 cents adults, children under 16 free. Dealers, Working demonstrations.

OCTOBER 13 & 14, Gem and Mineral Show, San Jose "Rock Trails West," annual show of the Campbell Gem and Mineral Guild, Gateway Hall, Santa Clara, Fairgrounds on Tully Rd., Campbell, California.

OCTOBER 13-21, Fourth Annual Gem and Mineral & Handmade Hobby Jamboree, Sportsman's Club, 6225 Sunburst, Joshua Tree, California. Dealers, free admission and parking.

OCTOBER 20 & 21, Gem and Mineral Society of Whittier, California will hold their Annual Show, Palm Park Recreation Center, 5703 South Palm Avenue, Whittier, Calif. Free admission and parking. Outstanding displays.

OCTOBER 20 & 21, "Jasper Days '70" sponsored by the Coalinga Rockhound's Society, Inc., Sunset School Cafeteria, 1104 California St., Coalinga, Calif. Dealers, exhibits, camping available, admission free.

OCTOBER 26-28, Old Pueblo Lapidary & Gem Show, Community Center Exhibition Hall, 350 S. Church St., Tucson, Arizona.

NOVEMBER 3 & 4, Bear Gulch Rock Club 17th Annual Gem and Mineral Show, Masonic Hall, 1025 N. Vine, Ontario, Calif. Exhibits, demonstrations, dealer space filled. Free admission and parking.

NOVEMBER 10 & 11, The Yucca Valley Gemfest featuring "Desert Rocks & Gems," presented by the Yucca Valley Gem & Mineral Society. The show will be held at the Community Center, 57098 29 Palms Highway, Yucca Valley, Calif. Admission free. Camping and good motels nearby.

NOVEMBER 10 & 11, Oxnard Gem and Mineral Society 10th Annual "Galaxy of Gems" Show, Oxnard Community Center, 800 Hobson Way, Oxnard, Calif. Exhibits, Dealers (spaces filled), Demonstrations. Free admission and parking.

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Undated

What's Cooking, on the Desert?

by STELLA HUGHES

Hopping John!

F I HAD only one choice of grain to take on a desert trek or an Arctic voyage, I'd choose rice. Rice cooks quickly, it's nutritious, and there are dozens of different ways it can be prepared. Rice is probably America's most versatile food, combining easily with meets, vegetables, sea-foods, poultry and fruits. You can use rice in certain breads, hotcakes, muffins, cookies and cakes. Rice is made into puddings and custards, sometimes resulting in a gourmet's dream with marshmallows, bananas, pineapple chunks, maraschino cherries and whipped cream.

The early pioneers carried plenty in their covered wagons when making the long trek across the continent. Mountain men packed very little food with them, but you can bet along with salt, cornmeal and salt-pork, they had a bag of rice.

A great favorite with the early-day cowboys on roundup was a rice pudding made without eggs, but with raisins added. This was called "spotted-pup." Rice pudding without raisins was called just plain "pup." Another cowboy favor-

ite was a rice pudding made with cooked dried fruit.

With meat prices becoming higher each month, housewives are desperately looking for something to extend beef, pork or chicken, and still be able to serve a satisfying meal to her family. Commercially packaged "helpers" aren't all that cheap, so the housewife has to look elsewhere if she is to stay within her budget. Rice seems to be the most popular choice, with noodles, macaroni, spaghetti and other flour products running a close second.

There's no waste to rice; every ounce is edible. What's more, there's no peeling, no scraping — not even any washing, for modern rice is machine milled and comes ready to cook. Another big plus is it's one of the few foods that will keep as long as a week in your refrigerator. Just remember to keep cooked rice covered, as it will take on other food odors.

Rice is the main item of diet for six out of every 10 people in the world. Knowing this I am amazed at how few cookbooks give recipes for rice. One Arizona book has not a single rice dish listed. Another, over 100 years old, gives two reci-

pes for rice pudding. Yet, another, with several hundred recipes, gives rice added to soup only. Some cookbooks give plain boiled rice as a side dish, served with certain meats.

If you want to become thoroughly confused, try to follow all the different instructions for cooking rice as given by various regional cooks. One will advise washing the rice, changing water twice, rubbing the grains through the fingers and draining each time. Others scorn this method, warning cooks never to wash rice, as you lose valuable vitamins and minerals, pointing out that modern rice comes ready to cook. So play it safe, and follow instructions as given on the box or bag of rice purchased at the store. I use long grain white rice, and MJB company advises rice not be rinsed before or drained after cooking. So be it.

Hopping John is always served in the South on New Year's Day by tradition. It is believed to bring good luck for the coming 12 months. Well, good luck or not, any hostess that serves a casserole of Hopping John for a summer supper wins praise from her family and guests. It may be "soul-food" for some, but it's "save-food-and-time" for today's budget-conscious and busy housewife. A one pound package of dried blackeyed peas costs about 50 cents; one pound of smoked ham hock about two dollars, and rice and others seasonings are reasonable. Along with a tossed green salad, strawberry sherbert, iced tea or coffee, you have party fare.

HOPPING JOHN

- 1 package black-eyed peas . . . 16 oz. Water to cover.
- 1 ham hock, smoked, or ½ pound smoked bacon or salt pork.
- 1 onion, diced
- 1 or 2 crushed red peppers (if using dried chiletepins maybe only one firey little devil is enough). This is not a chili dish, and I do not recommend using red chili powder as a substitute. If you have nothing else on hand season with a small amount of cayenne pepper.
- 2 cups cooked rice
- 1 bay leaf (optional)
- 1/2 cup diced celery
 - Salt and pepper to taste. If you use salt pork you may not need to add any salt.

Soak black-eyed peas overnight. Cook

with meat, pepper pods and other seasonings. Simmer at least two hours, or until peas are tender and liquid low. If cooking with ham hocks, remove hocks, trim off meat and discard bones. Rèturn meat to kettle and fold in rice. Continue simmering, uncovered, until all liquid is absorbed. Or pour into casserole; cover, and bake in moderate oven until liquid is absorbed.

Probably the most popular rice dish in the southwest is Spanish rice. There are dozens of ways of making Spanish rice, and the one I like is easy to make, and can be made *picante* by adding more chili for those who like there's hot and spicy.

SPANISH RICE WITH CHEESE

- 1 cup uncooked rice
- 2 cups water
- 1/2 cup chopped onions
- 1/2 cup chopped green pepper
- 1/2 cup chopped celery (optional)
- 2 tablespoons butter or margarine
- 11/2 cups canned tomatoes
- ½ teaspoon monosodium glutamate (optional)
- 1 teaspoon sugar
- 1½ tablespoons red chili powder (more if desired)
 - 1 teaspoon Worcestershire sauce
 - 1 cup grated cheddar cheese
 - 6 strips lean bacon, fried crisp

Combine rice, water and salt. Bring to a boil. Stir; cover and reduce heat to a simmer. Cook for about 15 minutes. Meanwhile cook onions, bell pepper, and celery in butter. Add tomatoes, salt and MG, sugar, chili powder, and Worcestershire sauce. Add cooked rice and simmer until thick. Pour into buttered casserole and top with cheese and crumbled bacon bits. Place under broiler and melt cheese. Serves 8.

Arizonans like green chili in their Spanish rice and fresh or canned can be used.

Some hints on ways of using rice: A bowl of plain fluffy rice for breakfast, served with cream and sugar. Or add rice to your favorite meat loaf instead of crackers. Make a rice pudding with milk and eggs, and instead of white sugar, use molasses, brown sugar or honey — delicious and different. Another pudding can be made by adding a cup of cooked rice to cornstarch or vanilla custard, and a can of well-drained fruit cocktail added when chilled.



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HILL COUNTRY MINES

Continued from Page 19

the east of Garner Valley, five miles southeast of the resort community of Idyllwild. D.C. Mayne of Hemet, a veteran miner, still worked the Hemet Belle for assessment purposes until a few years ago. Chilson, also the name of a little community that later became Kenworthy and is now the name for a U.S. Forest Service fire station nearby, boasted a post office, a one-room school, a large hotel called the Corona, and at least two stamp mills.

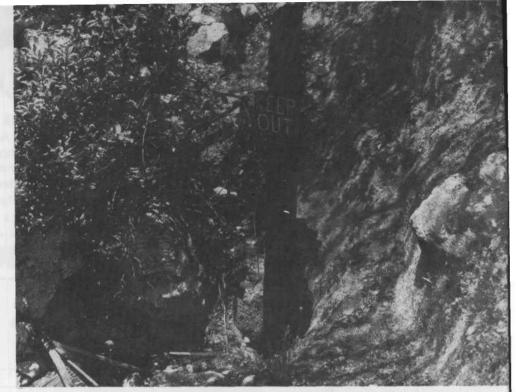
Descendants of two early families connected with Chilson and Kenworthy still live in the San Jacinto Valley, the Arnaiz and Lockwood clans. Manuel Arnaiz, father of Mrs. Fanny Contreras, now of Hemet, hauled ore from the Hemet Belle, the Bismuth and others, down to the stamp mills in the valley below, and C.R. Lockwood, father of Mrs. Leila Nobel of San Jacinto, owned the hotel and was postmaster.

Similar links with the early mining history are evidenced in Perris. Norman Hughes, chief deputy county tax assessor for the area, is a descendant of the Trujillo family that once operated the Good Hope.

Mayne, on the other hand, is an active blend of the two phases of mining history, and an articulate believer in the eventual recovery of the inter-related Gavilan-San Jacinto mining districts.

Another authentic early figure, Ed Cross, co-developer with Shorty Harris of many of the early Death Valley-Rhyolite discoveries, lived out his retirement in obscurity in the Hemet area, and remained undetected by this writer, an old newspaper hand, until he wrote Cross' obituary about 15 years ago. If it had been the flamboyant Harris, everyone would have known he was there, but Cross was more reticient.

Despite its strategic location on the railroad and near the entrance of the San Jacinto River canyon, traditional route to the mines, Hemet was never a mining supply center. That honor fell to neighboring San Jacinto, four miles to the north, which is 25 years older than Hemet and straddles several of the prerailroad freighting and staging roads from the San Bernardino area to the local mines and to the Julian region, a major



Fading "keep out" sign at the entrance of the Four Ells gold mine near the San Jacinto Mountains town of Idyllwild. Mine is one of many obscure shafts and tunnels in the district, no longer active.

mining district in eastern San Diego County.

One gold tunnel, misleadingly named the Hemet Diamond Mine, is just three miles south of Hemet, still visible on a hillside to the east of Diamond Valley, for which it was named by its owner, the late H.L. Thompson, an early Hemet building contractor. No valuation reports for this mine have been found. Another dozen miles to the southeast is the romantically named Anita Magee, at the head of Cholla Canyon five miles northeast of the crossroads community of Sage. The Anita Magee reportedly was named by its unidentified but love-smitten discoverer for the daughter of an early Temecula area family. However, it was never a gold producer but still contains quantities of gem-quality tourmaline and other semi-precious materials. As many area mines, the Magee was bulldozed as a safety effort in the early 1960s after the Kathy Fiscus well tragedy in the Los Angeles area. The Fiscus girl died when trapped in an abandoned and unprotected water well, leading to a flurry of mine closures and postings throughout Southern California.

Another Hemet area mining family is still represented in the business community there. Harold Martin, owner of two theaters, is the son of William Martin. Together, they owned and operated several mines in the Banner Canyon east of Julian up to the mid-1920s.

The result of this continuing blend of the old days with the recollections of current residents, plus the natural allure of gold, has created a rich tapestry of mining lore, carefully nourished today in several area museums, including Perris and the San Jacinto Museum, plus another seasonal collection maintained by the famous Ramona Pageant Association.

Each spring, in six matinee performances on consecutive weekends after Easter, a cast and production staff of more than 300 Hemet area residents presents the Ramona Play, an adaptation from Helen Hunt Jackson's famous novel Ramona.

The non-profit association, as part of its continuing gifts to the communities that support it so well, maintains an excellent small museum. Devoted primarily to Ramona-era history, it naturally contains many items and references to the mining area.

It may be only 75 miles — a half tankful of gas, roundtrip — from the metropolitan area, the Riverside mining district is fully as romantic, colorful, and historic as Death Valley and the Nevada lodes — but not nearly as well publicized. Drive on out.

Letters to the Editor

Letters requesting answers must include stamped self-addressed envelope

On the Wrong Track . . .

I read the article entitled "A Mining Town's Ups and Downs" by C. J. Burkhart in the July, 1979 issue of *Desert Magazine* with much interest. However, Burkhart's following statement is in error.

"Increased demand forced copper prices upward and the United Verde prospered to the point where they were able to construct a spur, narrow gauge railroad line from Prescott to Ashfork where it could link up with the Santa Fe. Known as the 'United Verde and Pacific Railroad,' this added convenience brought further prosperity to the Verde Valley."

The United Verde and Pacific Railway did not run from Prescott to Ash Fork, which runs south to north, was part of the standard gauge main line of the Santa Fe, Prescott and Phoenix Railway. The United Verde and Pacific Railway, a narrow gauge line, ran east to west from the mine at Jerome to Jerome Junction, where it connnected with the Santa Fe, Prescott and Phoenix Railway.

I first had the privilege of visiting the United Verde Mine and the United Verde Extension Mine in 1913 with Professor C. F. Willis, who was then Director of the Arizona Bureau of Mines. The Santa Fe Railway had just completed the construction of a standard gauge branch line from Cedar Glade to Clarkdale, where a new smelter was being built at that time by the United Verde Copper Company. Professor Willis and I were guests of Mr. W. A. Drake, who was then Chief Engineer of the Santa Fe, Prescott and PHoenix Railway, in his private car on an inspection trip from Prescott to Clarkdale. At the United Verde Mine we were guests of the United Verde Copper Company of which Mr. Will L. clark was then Manager, and we were very fortunate in being given a tour of the smelter and an underground tour of the mine. At the conclusion of our stay in Jerome we were invited by one of the officials of the United Verde and Pacific Railway to ride in his private car from Jerome over the winding track of the U.V. and P. Ry around the north side of Woodchute Mountain down onto the flat of Lonesome Valley and on to the U.V. and P. Rv. terminal at Jerome Junction.

In 1920, I returned to Jerome to carry out some geological work at the United Verde Mine and the United Verde Extension Mine. At the time the U.V. and P. Ry. was no longer

in operation. The ore of the United Verde Mine was no longer being hoisted to the surface at Jerome, but was being taken out of the mine through the 1000 Level Hopewell Haulage Tunnel and transported to the smelter at Clarkdale over the Standard gauge Verde Tunnel and Smelter Railroad (a subsidiary of the United Verde copper Company), which connected with the branch line of the Santa Fe, Prescott and Phoenix Railway at Clarkdale.

GEORGE TUNELL, Professor Emeritus of Geochemistry, University of California, Santa Barbara, California.

Cinnabar Mememto? . . .

While out searching for the remains of the old mining camp of Cinnibar in Yuma County, Arizona, we ran across an unusual artifact. An old bathtub out in the middle of nowhere and miles and miles from anything. Wes Kohlmeier couldn't resist posing for the enclosed photo! Later on we did find the remains of the old steam plant at Cinnibar. We love the desert and Desert Magazine.

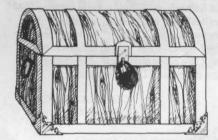
LORNA REUSCH, Blythe, California.

"You can't beat a hot tub!"

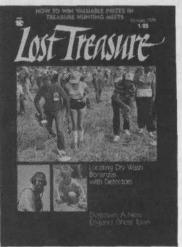


Cinnabar's old steam plant remains.





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