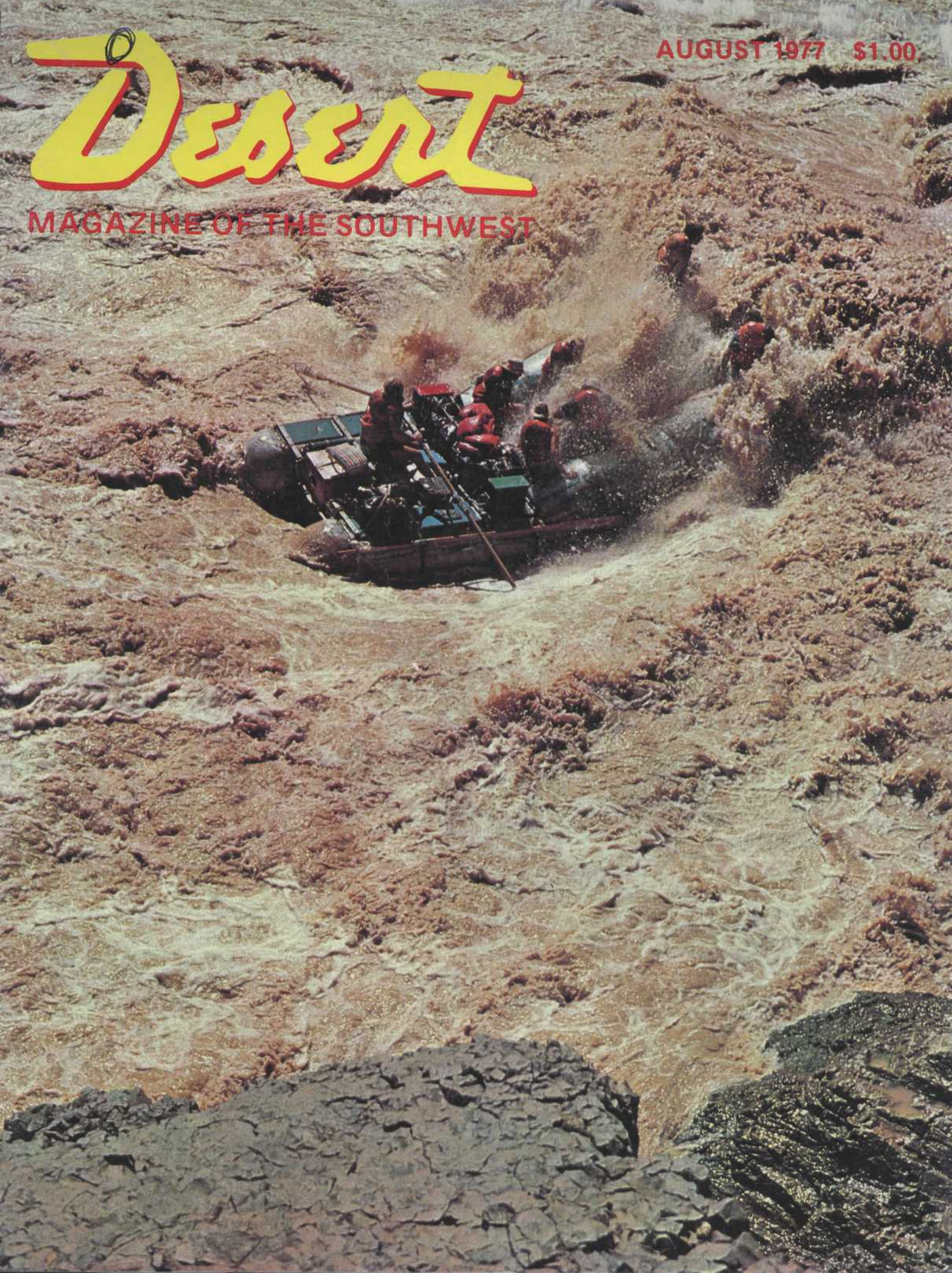
Desert

MAGAZINE OF THE SOUTHWEST

AUGUST 1977 $1.00



WILLIAM and JOY KNYVETT
Co-Publishers/Editors

GEORGE BRAGA, Art Director
MARY FRANCES STRONG, Field Trip Editor
F. A. BARNES, Utah Associate Editor
GLENN VARGAS, Lapidary Editor
K. L. BOYNTON, Naturalist
MARVEL BARRETT, Circulation Manager

Color Separations by
Henry Color Service

Lithographed by
Wolfer Printing Company, Inc.

Available in Microfilm by
Xerox University Microfilms

Desert MAGAZINE

Volume 40, Number 8 AUGUST 1977

CONTENTS

FEATURES

DEPARTMENTS

THE COVER:
The thrill of challenging Lava Falls on the Colorado River is the highlight of a 12-day float trip. See article on page 24. Photo by Dave Howard of Ocean Beach, California.

EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: 74-425 Highway 111, Palm Desert, California 92260. Telephone Area Code 714 346-8144. listed in Standard Rate and Data. SUBSCRIPTION RATES: United States and possessions; 1 year, $7.00; 2 years, $13.00; 3 years, $19.00. All other countries add $2.00 U.S. currency for each year. See Subscription Order Form in this issue. Allow five weeks for change of address and send both new and old addresses with zip codes. DESERT Magazine is published monthly. Second class postage paid at Palm Desert, California and at additional mailing offices under Act of March 3, 1879. Unsolicited manuscripts and photographs will not be returned unless accompanied by self-addressed, stamped envelope.

A Peek in the Publisher's Poke

LIFE IS full of highs and lows and the Colorado River and its tributaries above Lake Powell are experiencing what could be the lowest runoff in 71 years. Massive Lake Powell behind Glen Canyon has declined more then nine feet since the end of the water year last September, and is expected to drop an additional nine feet by this September. Even with the low water, bookings for river running have been surprisingly heavy. The cover and feature article by Dave Howard tells graphically in pictures and words the thrills of challenging the rapids of the Colorado.

Mary Frances Strong "trails the Pony" in Nevada with the second half of her two-part story this month, while historian Harold Weight closed his file on three lost legends in California's Picacho region. The first of the three, Bill Wilds, an old Colorado riverboat man, is featured in this issue.

Looking for some cooler spots in the desert? Bill Jennings takes us to the Lonesome Triangle of the Mid HIlls for some Mojave desert summer fun, and Dick Bloomquist guides us to the cool desert oasis of Fortynine Palms in Joshua Tree National Monument.

After taking a look into the past in Callao, Utah, we visit the grave of four children in Arizona, dig up some massive dinosaur bones in Colorado, laugh at the "clown of the desert," the roadrunner, and learn all about the value of the desert yucca. And that's our issue for this month.

Please note: Much to our dislike, the subscription rates will increase effective this issue. Continuing paper and postal increases leave us no alternative.

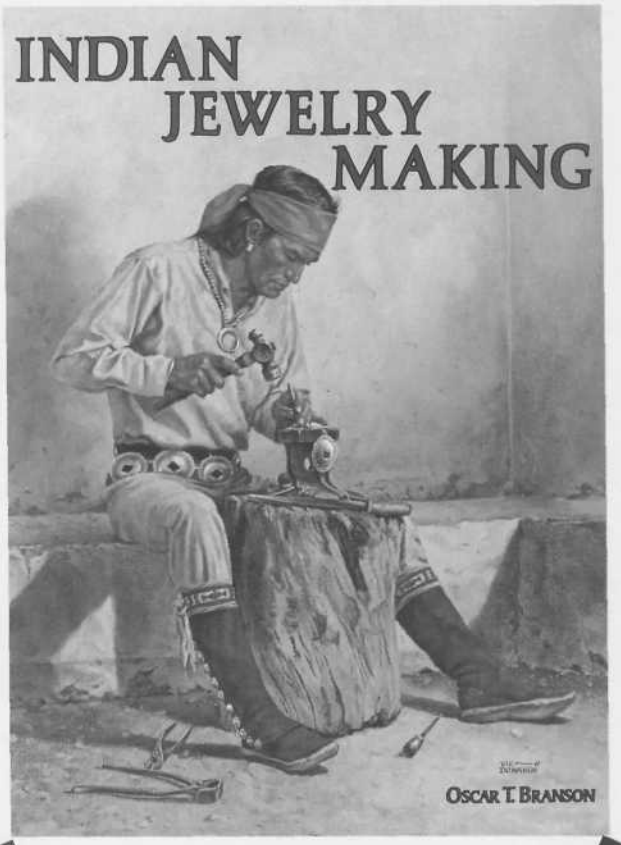
William Kruger

3 GREAT BOOKS!

INDIAN JEWELRY MAKING

For the first time Indian jewelry makers, whether experienced or novice, have at their disposal a full-color photographic essay of basic Indian designs. The book utilizes a sequential, step-by-step approach for the craftsman. In addition to basic designs, a short pictorial history of Indian jewelry making as well as modern day techniques and tools are presented. Valuable information on how to set up a work bench, gauge wire, know the weight of silver, etc.

64 PAGES ALL COLOR

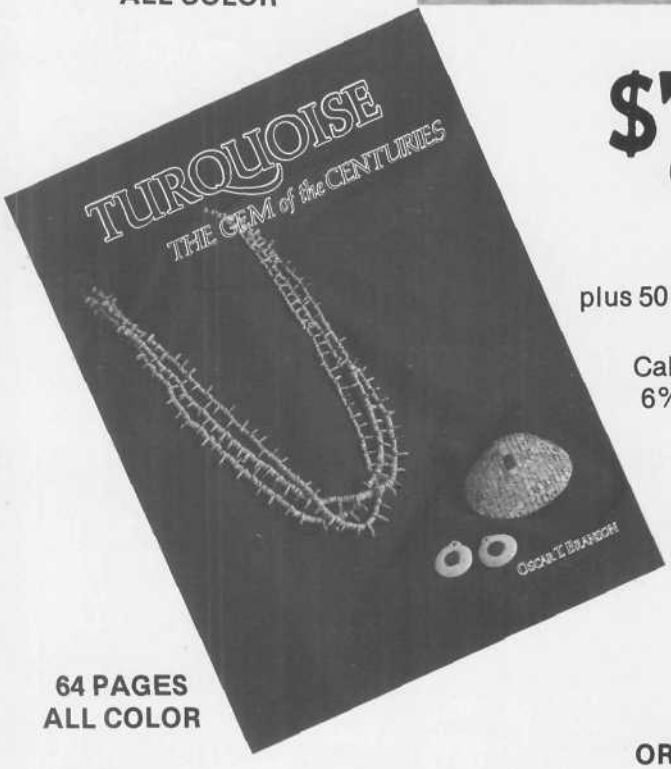


TURQUOISE, The Gem of the Centuries

Beautiful illustrations in accurate color can help you identify the turquoise in your jewelry. Pictures of turquoise from 43 localities from U.S. and around the world. A must for anyone possessing even one piece of turquoise.

FETISHES And Carvings of the Southwest

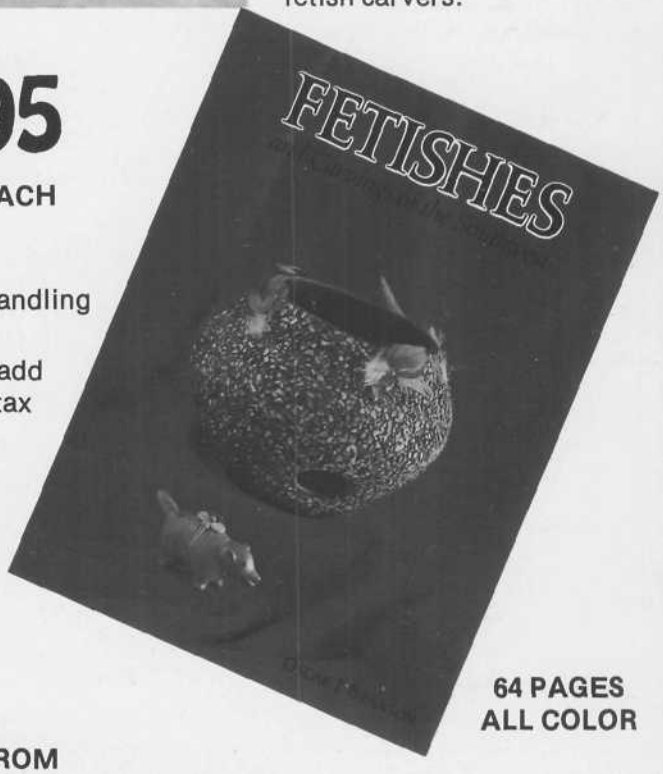
A vivid pictorial account of the use and beliefs associated with fetishes and the history of popular fetish necklaces since prehistoric times. This book presents the wide range of fetishes and carvings from several Southwestern Indian tribes as well as the outstanding works of several known fetish carvers.



$7.95 EACH

plus 50 cents handling

Calif. res. add 6% sales tax



64 PAGES ALL COLOR

64 PAGES ALL COLOR

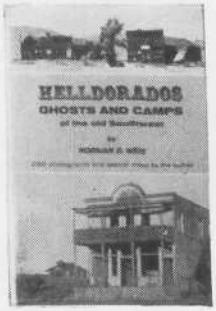
ORDER FROM

Desert Magazine Book Shop

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

Books for Desert Readers

All books reviewed are available through the Desert Magazine Book Shop. Please add 50c per total order for handling and California residents must include 6% state sales tax.



HELLDORADOS
Ghosts and Camps
of the old Southwest

By Norman D. Weis

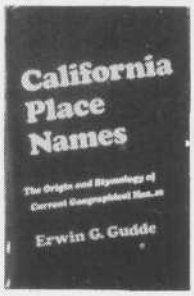
Author Weis covers the weathered ruins of 67 ghost towns—some famous, others little known, and one never before mentioned in written history, on this 7,000-mile tour of the Old Southwest.

A lively, humorous text and 296 stunning black and white photos recall the roaring times when miners dug for gold, silver or coal in California, Arizona, Nevada, New Mexico and the southern portions of Colorado and Utah.

The author visited all the sites and took all the photographs. He studied the remains of little-known places to find why the town had existed and to speculate on when and why it was deserted. He describes how, with special maps, anyone can find his own ghost towns.

The book shows such colorful places as Valedon, St. Elmo, Turret, Gold Point, Sagamore Camp, French Corral, Columbia, Virginia City, Cisco, Frisco, and unknwon Wolf, Colorado, which has no written record.

Hardcover, lavishly illustrated, bibliography, 365 pages, $9.95.



CALIFORNIA PLACE NAMES
The Origin and Etymology of
Current Geographical Names
Third Edition
By Erwin G. Gudde

This book presents the story of thousands of geographical names of California, giving their dates, circumstances of naming, their origin and evolution, their connection with our national history, and their relation to the California landscape.

Pronunciation of unusual names is given according to local usage. The entries are arranged alphabetically, with cross

references when necessary. Names within an entry are presented chronologically.

This third edition incorporates many new entries and extensive revisions to older entries, all the outgrowth of the author's research. An important addition is the reference list of obsolete and variant names.

Hardcover, 416 pages, $15.75.

GRAND CANYON JEEP TRAILS 1
North Rim
By Roger Mitchell

Everyone has been to the Grand Canyon, or at least heard of it. But practically no one has heard of the Shivwits Plateau, much less been there. This book describes eight interesting trips in that forgotten area on the Northwest rim of the Grand Canyon. This is a rugged lonely land far removed from the usual tourist spots and generally unknown even to the governmental agency responsible for its administration.

While much has been published about the Grand Canyon, practically nothing has been published about the Shivwits Plateau Country. Much of the material in this guide is original research, never having appeared in print before. Most of the trips described have some feature of significance for the sportsman, the naturalist and the photographer. All offer spectacular scenery and a unique backcountry experience. A rating system is also included so you can determine how rough a road is before you try it.

Roger Mitchell is no stranger to the mountains, forests and deserts of the great Southwest. He has spent much of his life exploring backroads and long forgotten trails. His previous publications for La Siesta Press, *Death Valley Jeep Trails, Inyo-Mono Jeep Trails, Western Nevada Jeep Trails, Eastern Sierra Jeep Trails, Western Sierra Jeep Trails* and *Exploring Joshua Tree* remain popular with backcountry explorers, and are also available from the Desert Magazine Book Shop.

Grand Canyon Jeep Trails is paperback, amply illustrated, 47 pages, $1.50.

TRAILING THE "PONY" IN NEVADA

PART II—THE TOUR

by MARY FRANCES STRONG

photos by Jerry Strong

THE PONY EXPRESS began mail delivery between San Francisco, California and St. Joseph, Missouri on April 3, 1860. The very daring nature of the operation—man and horse against time, the elements and hostile Indians—quickly captured the interest of the nation. Though the service lasted but a brief 18 months, the Pony Express attained immortality as one of the most dramatic undertakings in Western History.

During our Nation's Bicentennial year, the Bureau of Land Management marked the Pony Express Route across Nevada. Many former station ruins have been protected and two interpretive Waysides erected. In our modern cars and recreational vehicles, we can now enjoy a nostalgic, informative and leisurely journey "Trailing the Pony in Nevada."

At least three days should be allowed

Cold Springs Pony Express Station is one of the best preserved. It was situated in the heart of Paiute Territory and, consequently, was subjected to many Indian attacks. During one raid, the station keeper was killed and all the spare horses stolen. An interpretive Wayside depicts the "Pony days."

for traveling this 225-mile section of the route. You will need time to "loiter properly" at various points of interest. It is necessary to browse around and visualize "how it once was" to fully savor the past. A two-week vacation may easily be spent in traveling through this region of Nevada which is rich in history, rock collecting areas, photogenic geological formations and archeological sites.

There are side trips to lure you—Virginia City, Sutro's Tunnel, Lake Lahontan—to name but a few. Rock collectors may elect to spend a few days at the Wonderstone locales (*Desert*, January 1975) and the Broken Hills Wood deposits (*Desert*, September 1972). In any case, the choice is yours. Be it three days or three weeks, "Trailing the Pony in Nevada" is a trip you are sure to enjoy. The approximate mileage between points of interest is given on the accompanying map.

Genoa, the second Nevada station on the Pony Express Route from California, is an excellent point from which to begin the tour. Originally known as Mormon Station (1851), it was the first permanent settlement in Nevada. The site has been established as a Historic State Monument where a fine museum is housed in a replica of the early log station.

From Genoa, the Pony Express headed north to Carson City. The route turned east at this point and followed the banks of the Carson River. This has become a beautiful drive on Highway 50. A side trip can be made to Virginia City—once Queen of the Comstock, now a tourist attraction.

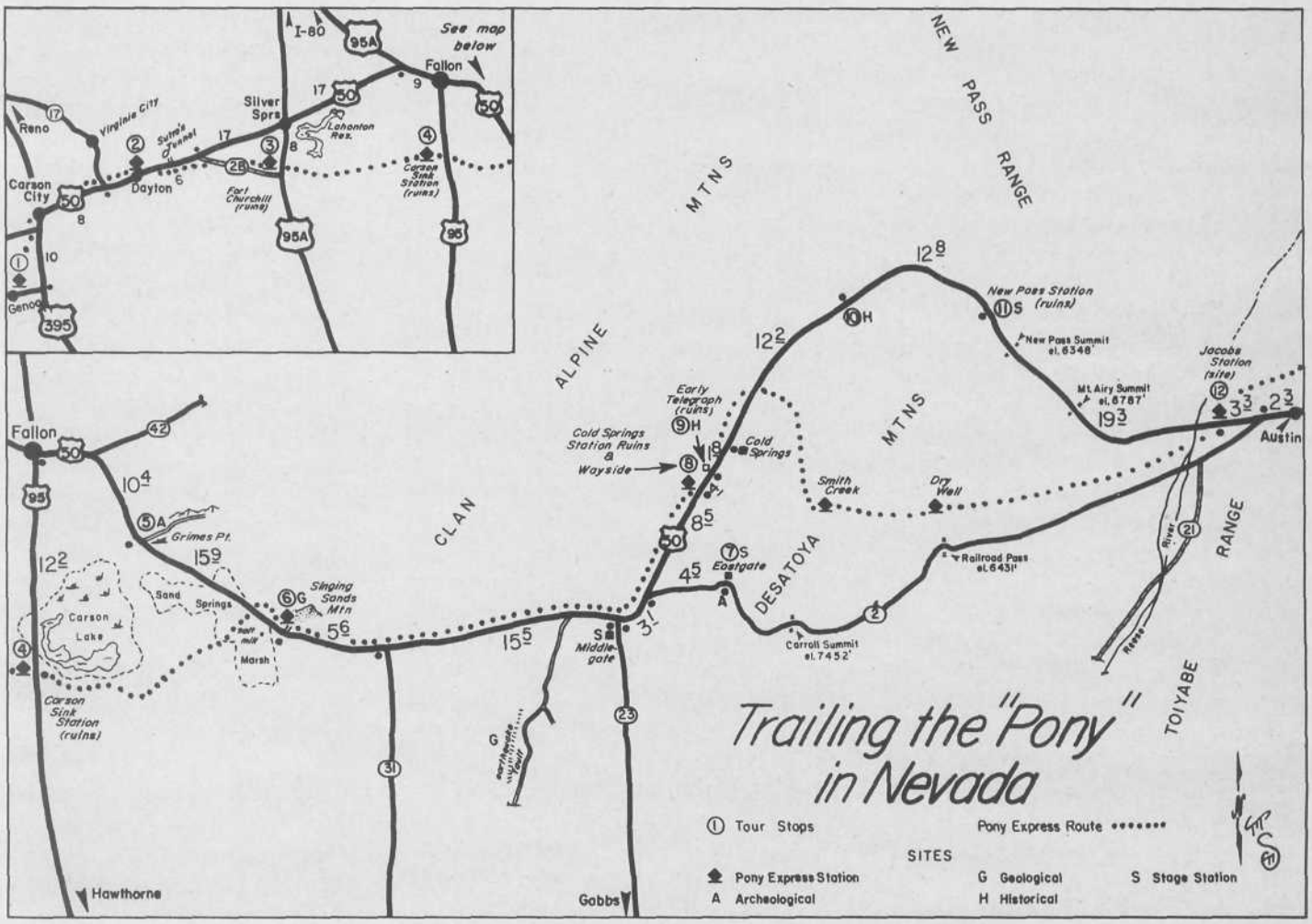
Continuing east, Stop #2 is the little community of Dayton. The site of a former "Pony" station is now occupied by the Union Hotel. An historical marker commemorates the days of the Pony Express.

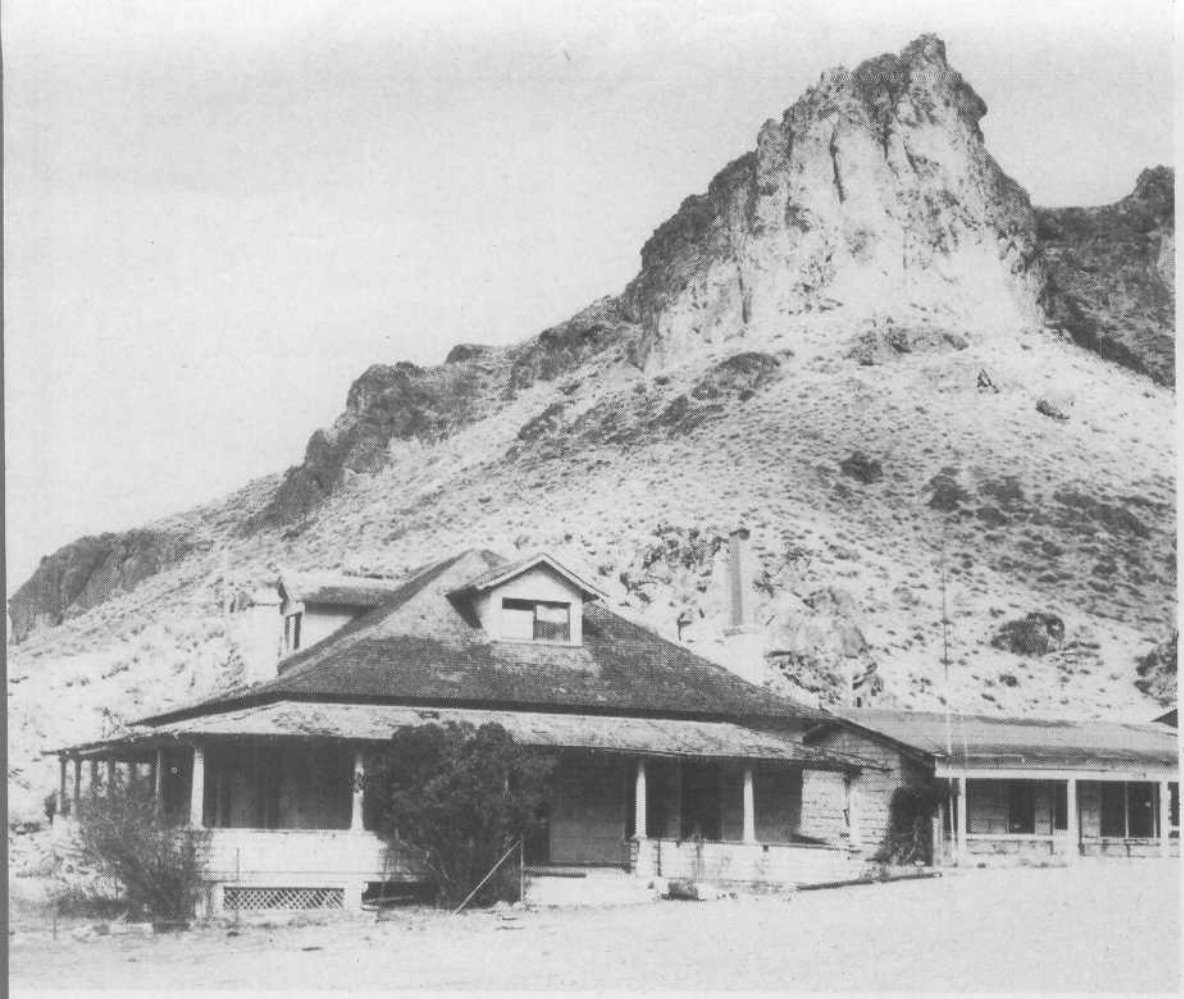
From Dayton, Highway 50 curves northeast and soon passes the entrance to Sutro's Tunnel. Only a few buildings mark the site of the once thriving town of Sutro. When excessive water was encountered in the Comstock Lode, Adolph Sutro presented a plan to drive a drainage tunnel up from the valley floor to a point high in the mountains. Congress passed special legislation in 1866 to "grant Adolph Sutro, for the right of way and other privileges to aid in the construction of a tunnel to the Comstock Lode in the State of Nevada."

Sutro encountered violent opposition to his plan by those holding controlling interests in the Comstock. Consequently, he had difficulty raising the capital to finance the project. Work finally began in October 1869 and was completed in July 1878. It connected with the famed lode at the Savage Mine, passed a mile north of Gold Hill and reached to within one mile of Mt. Davidson summit. It successfully drained the entire Comstock Lode.

Continuing east on Highway 50, Stop #3 is Fort Churchill State Park—a former Pony Express relay station. There is a choice of two routes to Fort Churchill—via Highway 50 to Silver Springs, then south on Alternate 95 for eight miles to the Park entrance. Or, you can take graded State Route 2 (the old River road) and enjoy a leisurely drive, following the Carson River to the Park.

Fort Churchill is one of the most picturesque ruins I have ever seen. We spent a full day just wandering among the old buildings. Be sure to stop at the Park museum and see the replica of the





Long before the white man established Eastgate as an Overland Stage Station, Indians occupied this area. They left remnants of a pole home [circa 1500 A.D.] and an important tool making culture known as the Eastgate Series.

original fort. It was sizable. The Pony Express relay station was housed in the headquarters building which still stands today. The history of the fort (1860-1868) is ably chronicled at the museum where pamphlets and brochures are available for visitors. Adjacent to the river, a tree-shaded campground provides attractive overnight accommodations.

From Fort Churchill, the next 40 miles of Pony Express Route leads across alkali flats, the sink of Carson Lake and Sand Springs Marsh to the site of Sand Springs Station. This section of the trail is advisable only for four-wheel-drive or dune buggies. Carson Sink Station, Stop #4—south of Fallon, was the only relay station on this run. Its adobe ruins can be visited by driving south from Fallon on Highway 95.

Conventional vehicles should head north from Fort Churchill and take Highway 50 east to Fallon. Enroute you will pass Lake Lahontan Recreation Area. You may be tempted to stop and enjoy the excellent boating, fishing, swimming, rock collecting and camping available here. Fallon offers all supplies and an opportunity to visit the Churchill County museum.

There are eight stops, not counting any rock collecting locales or other side trips you may elect to make, along the 115 miles between Fallon and the Reese River. The first, Stop #5, is Grimes Point —an archeological site. In the hills left of the highway, there are several caves believed used by prehistoric Indians from 5000 B.C. to 1500 A.D. They also left behind numerous petroglyphs and manos (grinding holes) on large basaltic boulders near the highway. On the ridge behind the historical marker, the remnants of an old drift fence have been found. The Indians used it for driving antelope and deer. Grimes Point is the turnoff to the wonderstone locale.

Beyond Grimes Point, Highway 50 slowly curves east and crosses Sand Springs Marsh. The Pony Express Route crossed, what is now Highway 50, near the center of the marsh and curved easterly. For the next 50 miles we will again be trailing the Pony.

Sand Springs Marsh is a large playa that was formerly an arm of Ancient Lake Lahontan in Quaternary Time. During wet weather, "Pony" riders must have been forced to make a detour to prevent their horses from miring belly-deep in the mud.

Stop #6 is the turnoff to Singing Sand Mountain and site of the Sand Springs Pony Express Station. The exact location of the ruins is in doubt. It is believed to be either immediately west of the monument or one and one-half miles northwest. During our recent visit we picked up several horseshoe nails along with bits of old metal and fragments of purple glass at what we assumed was the station site. The Overland Stage also used this route so our memorabilia may be from one of its stations.

Sir Richard Burton, English explorer and author, vividly described Sand Springs Station during his travels along the route in 1860. "Sand Springs deserves its name. The land is encumbered here and there with drifted ridges of the finest sand, sometimes 200 feet high and shifting with every gale. The station house was no unfit object on such a scene—roofless and chairless, filthy and squalid, with a smokey fire in one corner, impure floor: the walls open to every wind, and the interior full of dust."

Sir Richard had few kind words for any of the Pony Express stations along the route. He, obviously, found the accommodations not up to the standards befitting an English gentleman.

"Singing Sand Mountain" has been a favorite playground for dune-buggy enthusiasts for many years. The name comes from an unusual "squeaky" sound produced when walking over the sandy slopes. A graded road leads a short distance north to an undeveloped parking-camping area. Be careful to stay on solid ground. This is a good overnight stop and allows the opportunity to take photos and explore the huge dune. Youngsters, particularly, enjoy the chance to "play on and roll down" the sandy dunes.

Continuing east, the highway climbs a pass, crosses Fairview Valley and junctions with State Route 23. A quarter of a mile south is Middlegate Station—formerly an Overland Stage stop, it now dispenses gasoline, snacks and refreshments. State Highway 23 takes rock collectors south to the petrified wood locales.

Stop #7 requires a five-mile detour to Eastgate—another former Overland Stage station. This area has been designated "an important archeological site." South of the historical marker, on a bench at the base of the mountain, a "brush and pole home" was discovered. It is believed to have been built by prehistoric Indians about 1500 years ago.

The Indians were typical Great Basin People who subsisted on large and small game, as well as seeds, nuts and roots. Very distinctive projectile points—Eastgate Series—were found on the site. Such finds are valuable cultural indications.

Returning to Highway 50, Stop #8 will be at the ruins of Cold Springs Pony Express Station. Its rock ruins are some of the most well-preserved and indicate a four-room structure. It provided a barn, storage area, living quarters and corral. The latter two were adjacent—not only to protect the valuable horses but to give the men the benefit of the animals' body heat! In the surrounding rock fortress, gun portals are still visible in the walls. Cold Springs Station lay in the heart of Paiute Country and suffered many Indian attacks. In later years, it served as an important stage and freight station.

An interpretive Wayside has been built at Cold Springs by the Bureau of Land Management. Free brochures and a guide for several mini-trips are available. You will also enjoy an artist's conception of the people, places and events during the time of the "Pony."

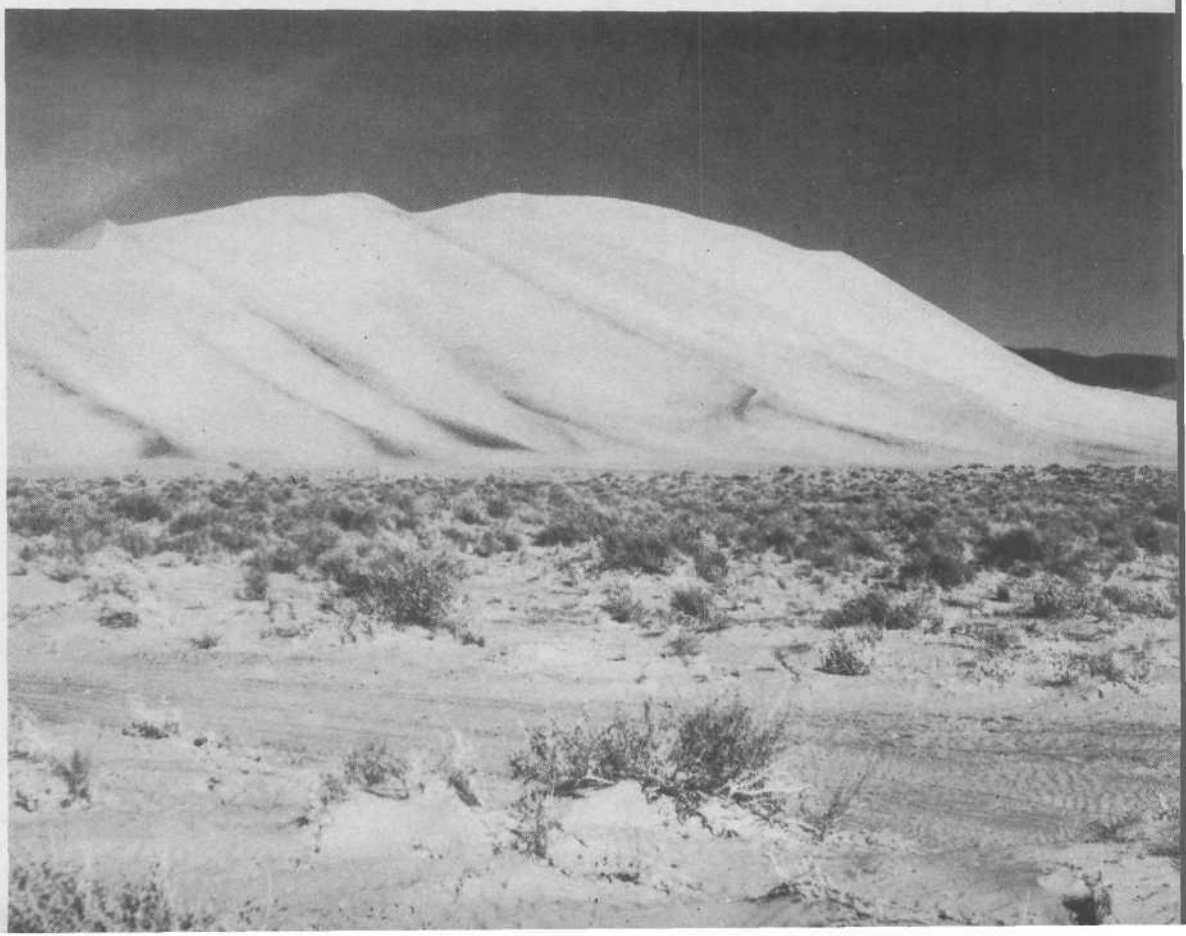
Stop #9 is a short distance north. Watch for the ruins of an early-day telegraph repeater and maintenance station. It was this transcontinental line that brought an end to the Pony Express Mail Service.

Our route continues north along the base of the Desatoya Mountains, then begins a wide, northeasterly arc across Edwards Valley. In prehistoric time, grass and brush flourished around the valley's springs and intermittent streams. Shoshone Indians and their ancestors came seasonally to gather wild seeds and hunt small game. Edwards Valley was also the site of their winter camps. Stop #10 is at the historical marker.

Colonel John Reese discovered the route through Edwards Valley which proved to be shorter than the Humboldt Trail. Five years later (1859), the route was established by surveyor James Simpson. Over it came the emigrants, Pony Express, Transcontinental Telegraph and Overland Mail Stages.

After rounding the Desatoya Mountains, the Pony Express Route heads due south to Smith Creek Station; then northeast to Dry Wells and Jacob's stations. We will continue to follow Highway 50 across Edwards Valley and join the Pony route at the site of Jacobsville.

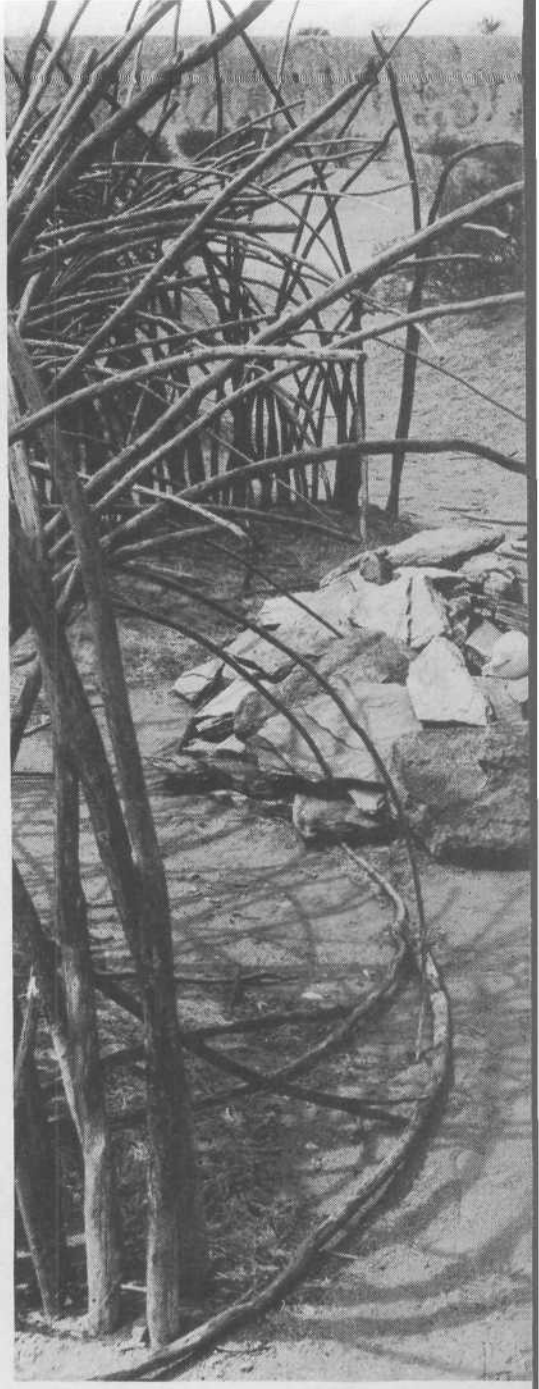
Continued on Page 38



Singing Sand Mountain is so named for the unique sound emitted when tread upon. Pony Express riders probably cursed this stretch of their route during strong wind storms. Today, dune buggiests come from all over the state to frolic on the slopes.

The Grave of the Four Children

by LEE COE



Four gaps in the ocotillo fences allow entrance to the mound of stones which cover the wall. This is in harmony with other Papago religious tradition.

NEAR THE Papago town of Santa Rosa in southern Arizona, lies the Grave of the Four Children. The fierce Arizona sun glares over the desert, withering the remnants of spring greenery that dot the Papago Indian Reservation. It would seem the advent of water in this parched land could only be a welcome sight. But the Grave of the Four Children bears silent testimony that this is not always so.

"It was long, long ago, maybe so . . . 100 years . . . when the ground opened and the water came . . . " so the story goes.

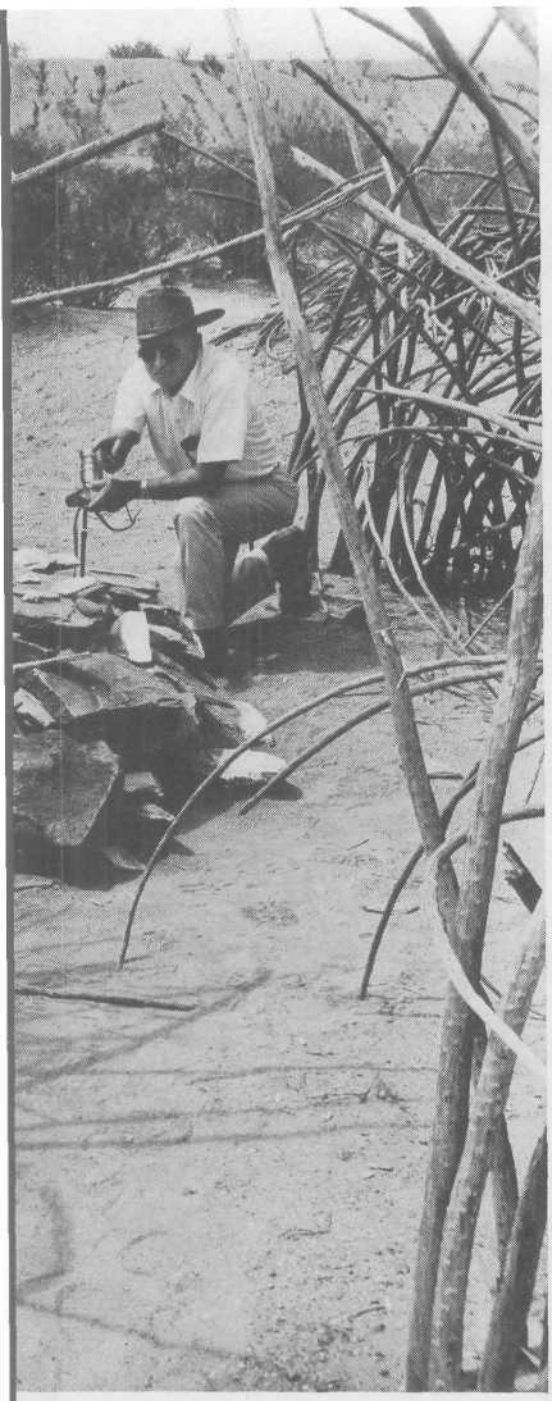
But this water did not bless the Papagos who struggled for existence in this inhospitable desert. It surged forward, spreading over the fields and into the homes. Deeper and deeper the cold waters rose, and still the flow continued. Joy that had held forth when first the fields were wet down changed to alarm as the wetting became a flood, washing away the fields, tearing apart their homes, carrying away clothing and cooking pots, even drowning the unwary. Their whole countryside was under water and no amount of prayers, medicine men or dances could stop it. Fear dwelt in every heart. At last the council consented to listen to the pleas of their medicine men.

"It is necessary to make a supreme sacrifice to this water god who has rejected all other offerings," they maintained.

Sadly the council agreed. Just how the sacrificial victims were chosen is not told, but that more than just life must be given up was understood, and so it was that four children, dear to all, were prepared for the sacrifice. Great must have been the sorrow as this final, desperate offering was borne through the swirling waters to their source. Appropriate ceremony was observed, as the four little ones were cast into the hole from whence the waters rose. As the last small form disappeared, chanted supplications rose on high. Then sadly, hopelessly, the beaten Papagos returned to their ruined homes.

Morning came, waking the people where they huddled on platforms above the waters. Looking about them fearfully, it seemed the water was receding. Unbelieving, hardly daring to hope, the Papagos of Santa Rosa hastened to the hole that was their children's grave. It was so—the water no longer came forth from its gaping mouth.

Before the weary task of clearing and replanting fields, of rebuilding homes, there was something they must do. Some gathered ocotillo branches, some scraped up stones and brought them to the hole. Others went up into the hills for the large, flat sandstone rocks they needed. Still others fashioned children's treasures, packed precious food for a long journey. When the day ended, the glowing sky silhouetted a cairn of stones enclosed in a ceremonial hut of ocotillo wands, with four doors opening to the East, the North, the West and to the South. No more was there a hole, and the four children had food and toys for their journey.



Present day explorers of the Papago Reservation can find the children's shrine by taking the Ajo road west out of Tucson, going beyond Sells to Oquitoa. Here they must turn right and drive to Ventana Road. Turning left onto Ventana Road, there is an earth dam across the wash south of the road. A short distance before you get to this dam, a dirt road leads off to the left and will take you to the Grave of the Four Children. Query at the nearby Santa Rosa Trading Post may illicit the legend as it has been handed down by word of mouth among the Papagos. Friar Ventura Bonaventure, who spent a quarter of a century among these Indians, has this reference to the legend:

" . . . During the Great Pueblo Period (13th-15th Centuries)," wrote Fr. Bonaventure, "there occurred an extremely heavy flood in the Altar Valley around Oquitoa which destroyed the entire village of Vamuri, barring four children who had been playing in the higher reaches adjoining.

"These orphaned childred were picked up by a salt expedition from Santa Rosa and taken back with them. The expedition had barely reached Achi (Santa Rosa) when a copious spring burst forth out of a badger hole. The Piman (sic; the Papago Tribe is an offshoot of the Pima group) tradition has it that the Great Flood was caused by a similar occurrence. Fearing a recurrence of the flood and laying the blame on the four children who had survived the Altar Valley flood, and taking the sudden appearance of the spring at the unlikely location as a sign that the relatives in the underworld demanded the presence of the children, it was decided to send the children to them. When the children had been sunk in the spring to the accompaniment of great ceremony, the water ceased to flow. To commemorate this event and to show their gratitude, the Wiikita (song ceremony) is celebrated at intervals to renew the monument of ocotillo."

Whichever of these or several other versions is the correct one, and after some 500 years a little discrepancy can be overlooked, the ceremony of the song and the replenishing of the ocotillo branches continues. There is no set day, just when the time seems right, and the piles of discarded branches grow. Offerings for the children themselves may be left at any time on the cairn of rocks, an orange, a plastic flower, any small token to tell the children they are not forgotten.

Over the years, the white man has encouraged the Papago to build dams to catch the runoff of the summer rains. One such large dam is placed just west of the grave, across a wide arroyo. Engineers and hydrologists are still trying to figure out why this particular dam is almost always dry. Perhaps the Papagos have the answer. The prayers of their forefathers as they sacrificed the beloved children asked the water god to make the water recede and never more cover their land. As long as the Papagos of Santa Rosa remember the four children and why they died, so too, will the water god remember. □

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.

AUGUST 27 & 28, Simi Valley Gem and Mineral Society's Annual Show, Larwin Community Center, 1692 Sycamore, Simi Valley, Calif. Dealers. Chairman: Irene Josephson, 1247 Carmel Dr., Simi Valley, Calif. 93065.

AUGUST 27 & 28, "Journey to the Sun"—Continuous Indian Festival of traditional songs and dances by Hopi and Navajo Indians; demonstrations of Indian silvercraft, Hopi Piki bread, displays of pottery, textiles and painting by Southwest Indians. Museum of Man, 1350 El Prado, Balboa Park, San Diego, Calif. Contact Laura Walcher, (714) 274-0313.

SEPTEMBER 10 & 11, Santa Maria Gem and Mineral Society's 7th annual "Gemboree." Convention Center, Santa Barbara County Fairgrounds, Santa Maria, Calif. Dealer space filled. Parking and admission free. Chairman: Billy Joyal, 1617 N. Lynne Dr., Santa Maria, California 93435.

SEPTEMBER 10 & 11, Antique Barbed Wire and Collectable Show, sponsored by the California BWCA, Home Economics Building, Stanislaus County Fairgrounds, Turlock, CA. Free admission. Write to: Delbert Haarberg, 15562 El Capitan Way, Delhi, Calif. 95315.

SEPTEMBER 17 & 18, Gem and Mineral Show, "The Show That Shows How," presented by the Mother Lode Mineralites of Auburn, Calif. Free admission. Fairgrounds, Auburn, California.

SEPTEMBER 17 & 18, Annual Bottle Show and Sale presented by San Bernardino County Historical Bottle and Collectible Club, San Bernardino Convention Center, 303 North "E" Street, San Bernardino, Calif. Adults 50 cents donation. Call: 714-889-4264.

SEPTEMBER 17 & 18, Sequoia Gem & Mineral Society's 11th Annual "Harvest of Gems & Minerals" Show, Redwood City Recreation Center, 1328 Roosevelt Ave., Redwood City, Calif. Dealers, demonstrations, displays. Dealer space filled.

SEPTEMBER 24 & 25, 11th annual "Magic in Rocks" show hosted by El Monte Gem and Mineral Club, Inc., El Monte Masonic Temple, 4017 N. Tyler Ave., El Monte, California. Free admission and parking.

Rugged self-reliance still prevails here where most construction is still hand-cut or native materials.

CALLAO, UTAH A GLIMPSE OF 1890

by HARTT WIXOM

FEW PEOPLE visit Callao on purpose. Not the first time. But, those who do stumble into her pioneer spirit—where horse-drawn plows and hay derricks still outnumber all good-intentioned innovations conceived by man's modern mind—find many reasons to return soon.

There is probably no place in the continental United States where the natives move at a less hurried pace. Yet, few people have to do more for survival. Nature is both raw and harsh. Wood and water are hauled. Taking a deer from the nearby Deep Creek Mountains is the winter's cache of meat. And coyotes must be kept away from the chickens year around. It is a glimpse into the past century. Lifetime residents here need not talk about the "good old days." They're still experiencing them.

When I first "discovered" Callao it was on a hike in Deep Creeks' lofty crags. Rising straight from the Great Basin floor of western Utah, sprawling over into Nevada on the southern toe, these mountains rival Wyoming's Tetons for sheer vertical ascent. Haystack Peak's 12,101-feet-elevation is grander than any point in the more highly publicized Utah Wasatch Range, and is the highest peak between the Uintas and Sierra Nevadas, a distance of some 600 miles east and west. But, it was not these snow and conifer-studded slopes which lured me back so much as it was Callao itself. This is a town unlike other isolated western towns. It did not die. It was not resurrected. It simply hasn't changed.

I know of no better place to see how things were in grandmother, or great grandmother's time. There are no modern-type frame or brick homes. All are "hand-made" of local stone and wood. Stacks of firewood, hand-cut in many instances, are piled high in each yard. Cellars are filled with bottled fruits and vegetables. On one occasion we were invited to have supper with long-time local farmer, David Bagley. There was more wheat bread and fresh milk than we

could eat. In the meantime, Bagley told us about Pony Express days. The stop was in back of his house, near several small trees. A giant weeping willow, along with a Utah historical marker, now grace the spot.

"Things haven't changed much since then," Bagley told us. "Dad used to tell me how the riders liked to stay here as long as they could before heading out into the flat sage beyond the Deep Creeks. It was easier to make time, but there wasn't as much water or shade out there."

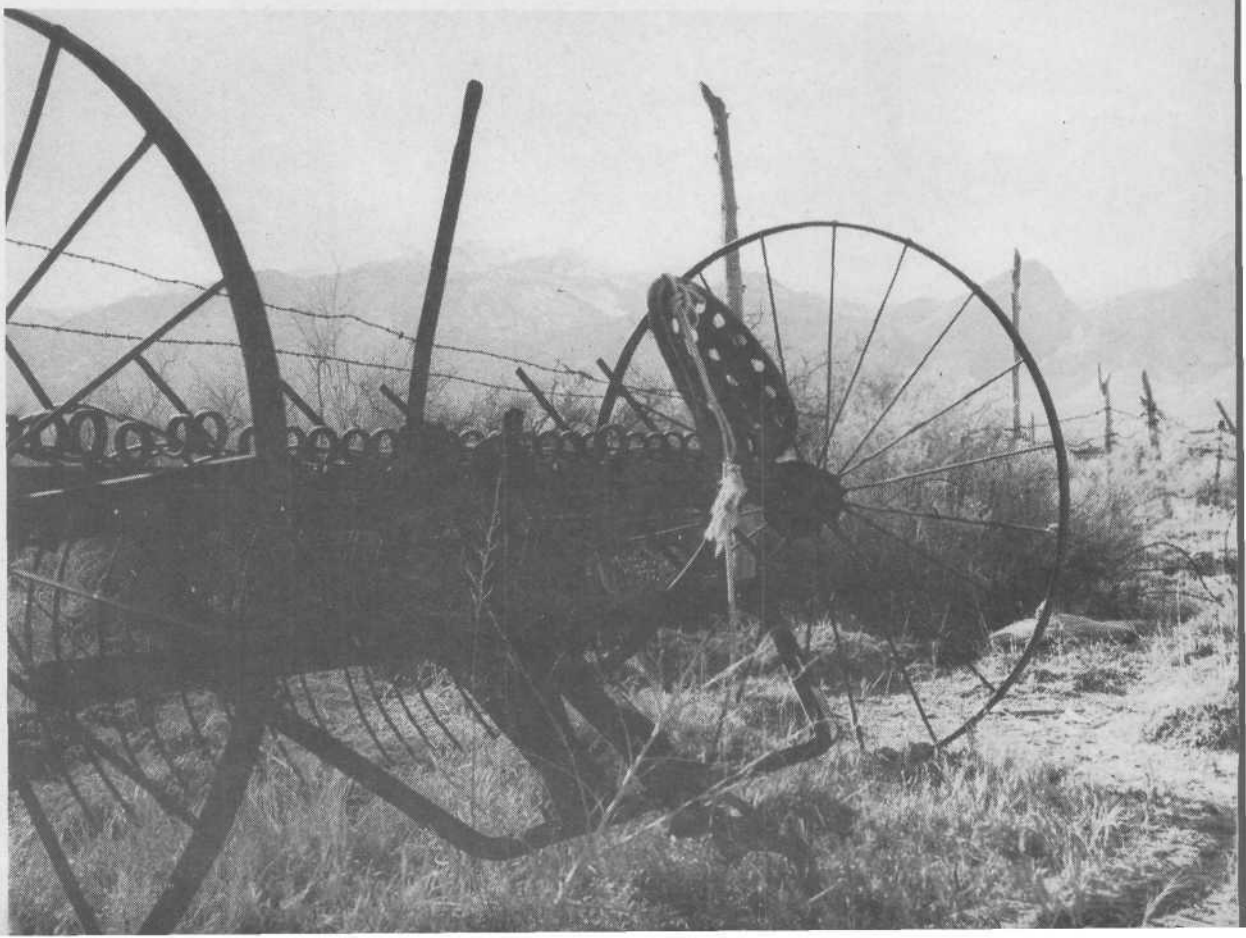
Several communities take advantage of the life-giving streams which flow from the Deep Creek Range. There are Partoun, Trout Creek, Gold Hill. On the western side is Ibapah, tribal home of the Goshute Indians. However, a visitor in these parts should not count on many, if any, services. For example, there is little gasoline or food for sale. It is approximately 100 miles of dirt road from Wendover to Delta; tourists should prepare sufficiently so that they are not a burden on the local people. However, on one occasion, a Callao farmer let us have gasoline from a 10-gallon "float level" container where you actually watch the liquid flow from gravitational pull through a glass window into your tank. Another friendly resident lent perfect strangers a tire and wheel from an old car. "I'll never use it anyway," he reiterated. But, grateful for the spare to help with one of two flats, we made sure he was amply rewarded for his generosity.

Perhaps a place where there are no traffic noises, air or water pollution, pavement, or city-paced life is good for the soul. At least it appears to be there. The spirit is contagious, for once visiting this area, one is seldom the same again.

Callao's one-room schoolhouse was for many years the only one between Wendvoer and Delta—a distance of some 100 miles. There is now a more modern, larger school at Ibapah. But grades one through twelve still attend Callao. Total enrollment seldom surpasses a few dozen, however, as the population of all western Tooele and Juab Counties is but several hundred.

My own family has roots in Callao. I did not discover until after visiting Callao several times that my wife's grandmother, Julia Tripp, was required to display indomitable courage here. Tragedy is found frequently in her diary, yet she would not give up. At one time, her daughter, Ada, three, became ill, and without any doctors around, soon died. Julia and husband George drove with horse and wagon to Delta with the young body, then proceeded by train to Salt Lake City and burial in the traditional family burial plot. "Life was more lonely in a lonely place," was the gist of her comments after that. Callao is indeed a place to be overwhelmed by your thoughts, intensified by the isolation, whatever they may be. If there is one guiding force here, it is self-reliance.

Callao's name, like its spirit, stuck. An early settler said it reminded him of his native Callao in Peru, South America. Perhaps one reason for the town's permanence is that it is a farming, not a mining town. Other boom towns nearby, such as Gold Hill, were once prouder. In nearly any direction one can find semi-precious rock such as topaz, and of course, trilobites are not uncommon. Waterfowl abound nearby at Fish Springs Migratory Bird Refuge. But residents spend little time with such luxuries as hunting old glass bottles in abandoned mining shacks. They are engrossed in wresting a living from the desert. It isn't always easy to face such a rugged challenge. But, like our pioneer fathers, these people seem able to meet it. Here are not only pioneers, but a living history lesson. □

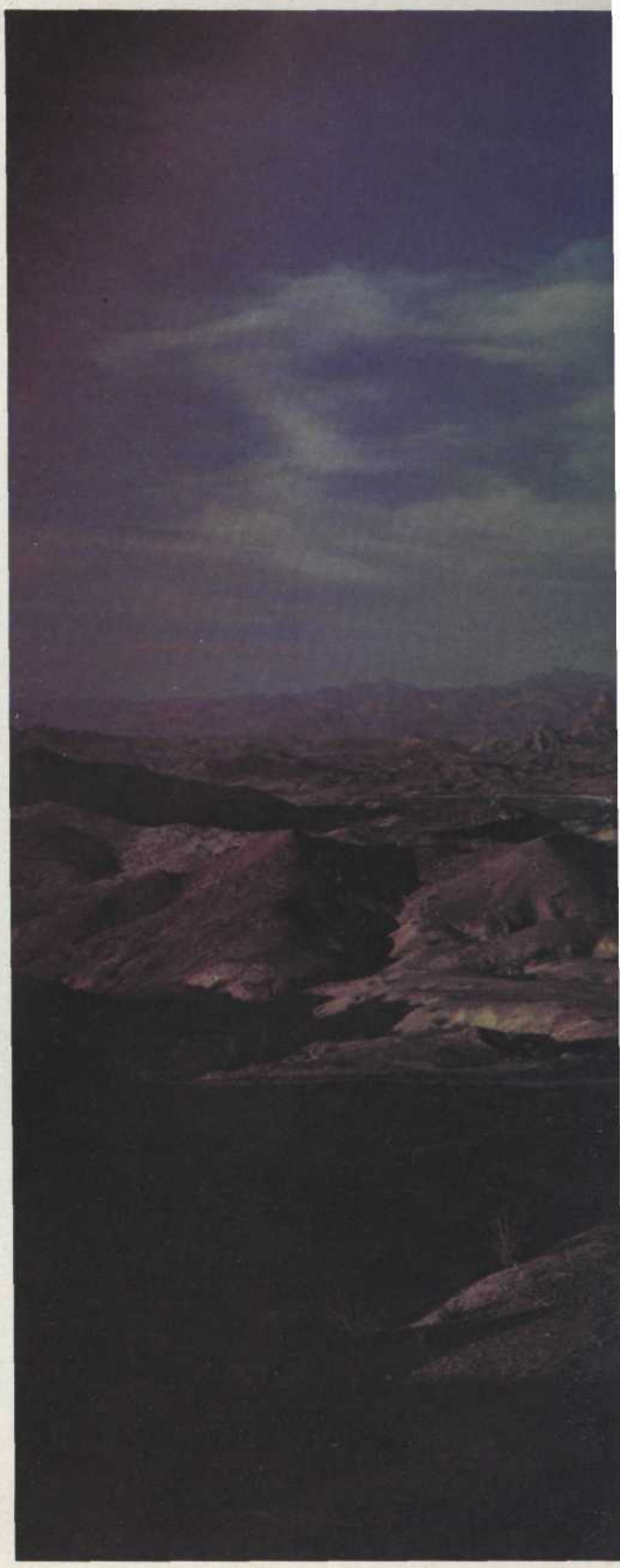


Machinery such as this are typical on Callao farmlands. Deep Creek Mountains in background.

PICACHO'S LOST

JUMBLED BUTTES AND CANYONS AND WASHES LIKE THESE, OFFER GOOD REASONS WHY PICACHO LOST MINES STAY LOST.

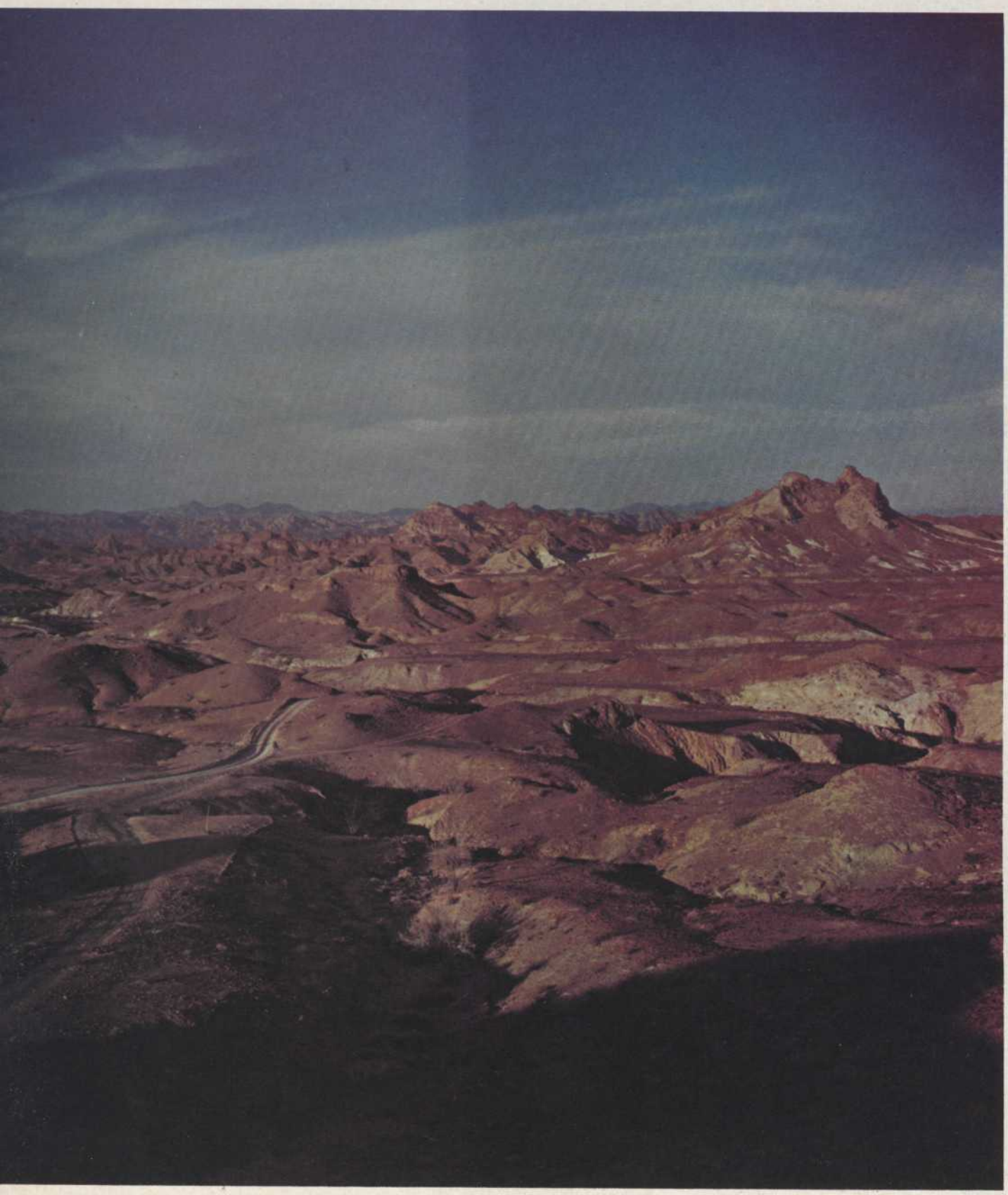
by HAROLD O. WEIGHT

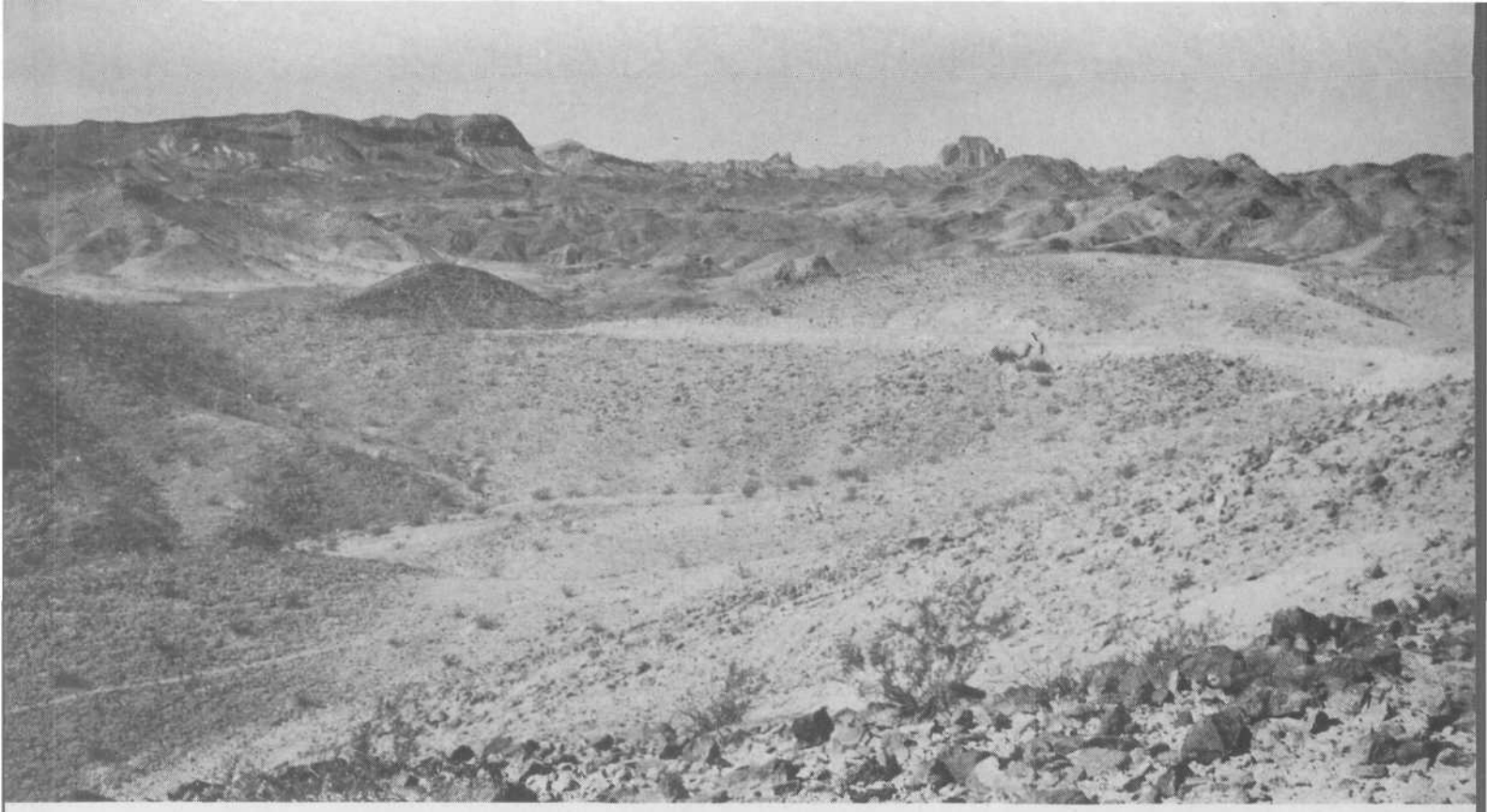


THE WILD Picacho region of southeastern California—a beautiful, jumble of mountains, canyons, mesas, hills and washes—is ancient gold-hunting and gold-finding country. It also nourishes, I believe, more lost gold legends than any other equal area in the Southwest. Most of these I have from time to time recounted in the past quarter-century of *Desert*. Others—sketchy, short on details, or difficult to pin down—have been held in a hopeful open file.

But time has a way of closing files. The men who told me these stories, and who "followed the gleam," no longer trace out old Picacho trails. The trails themselves fade with disuse, are cut by storm and erosion, erased by later wheels. There is little chance, now, that more will be added to these maverick tales. But they possess their own charm and enticement, and are part of Picacho's legacy.

GOLD LEGENDS





We will start with Bill Wilds. Bill was an oldtime Colorado River steamboat man, never a prospector or miner. But he married a Mohave Indian up at Needles, and acquired a lot of Mohave in-laws. That's how he became involved in a lost mine story that may belong to the legend of the hidden Yuma Indian gold (*Desert*, August 1973). Ed Rochester, the expert on such matters, thought he did, and it certainly does add weight to the probable existence of a rich gold ledge or placer somewhere between Ferguson Lake and Picacho Peak.

The trouble is, no one knows or ever can show the direction Bill's Mohave in-law took on that long-gone day when he left the river steamer.

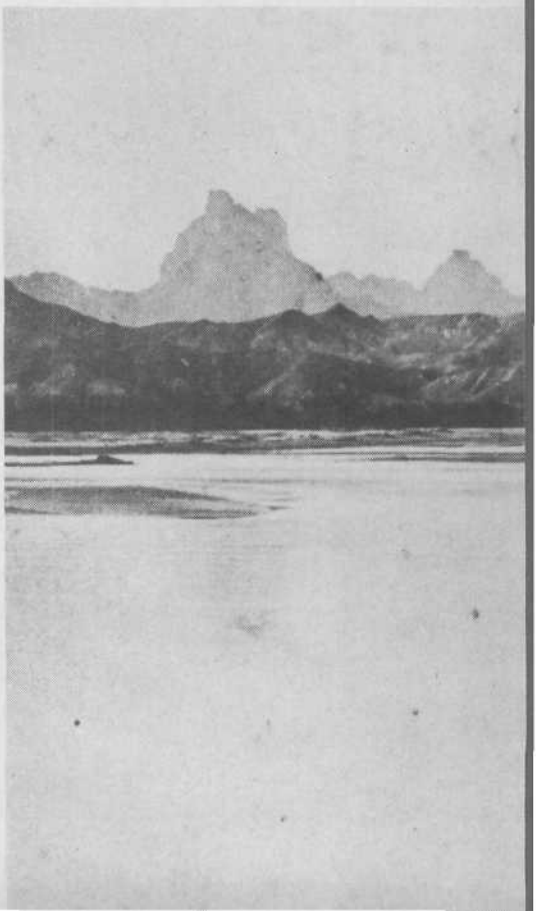
"Bill put in a great many years on the Colorado, in the steamboats," Ed said. "He wasn't a captain. More like an engineer or mate. In charge of the crew, unloading cargo, taking on wood. That sort of thing. There wasn't an Indian along the Colorado anywhere but knew Bill Wilds. A legendary character among the Indians. Particularly up around Parker and Needles, more so than among these Yumas. He could talk Moharve."

Those old river steamers almost incessantly developed one kind of trouble or another enroute, as they worked their way up and down the Colorado. And, through necessity, there were few breakdowns that the crew couldn't fix—at least temporarily—on the spot. One trip upriver from Yuma, Bill's steamboat (probably the *Mohave* #2) had a breakdown close to the lower end of Ferguson Flats, just across the river from some of the little river garden rancherias of the Apache-Mohave Indians. The boat tied up to the California bank and repairs got under way.

One of Bill's brothers-in-law was on board, and when he learned they would be there the rest of the day, he went ashore and disappeared. He was gone all afternoon, slipping back aboard just at dark. He hunted up Bill and in the dark, without a word, handed him a heavy sack. When Bill examined it next day, it proved to be filled with rock which looked like high-grade ore.

Repaired, the steamer continued up the Colorado. But before Parker was reached, Bill's Indian brother-in-law had broken out with what appeared to be measles. He was put ashore at Parker, headquarters for the Colorado River Indian Agency. Within a few days he was dead.

When the steamboat had arrived at Needles and its cargo was discharged, Bill took the sack of ore to Monaghan & Murphy, the town's leading merchants. They paid him $300 for it. Bill pocketed the money and went back to his job on



When Bill Wilds was a steamboat man, before the first dam was built, the Colorado was one of the great thoroughfares of the West. This appears to be the Cocopah No. 2, which operated 1867-1881, tied on the Arizona side within sight of Picacho Peak. Weight collection.

Left: Looking across to Picacho Peak from lower end of Ferguson Lake. This is the area where Wilds' Mohave in-law left the steamboat, to return with high grade ore.

the steamer. So far as is known, he made no effort to trace the source of the ore the Indian had given him.

Finally he left the river to live at Needles where, for a few years, he was a special deputy constable. He is listed as such in an 1889 directory of San Bernardino County. This helps place the incident of the golden ore as probably in the early 1880s.

"After a while at Needles, Bill got sick," Ed Rochester said. "Got awful fat. At that time the Colorado was quite a way over from Needles, and there was a big jungle between the town and the river. Bill moved out there into that jungle and became a recluse. Wouldn't allow any visitors. Still later he moved farther away, down and across the river to the Arizona side at the mouth of Sacramento Wash.

"He had a cabin down there where he lived the last years of his life—he and a dozen or two cats. He would hike into Topock every week or so and get a handful of groceries, and go back home. He was willing to see me, and I used to visit him every time I was close to his place. He would let me in, and we would talk awhile. That's when he told me about the Moharve and the gold. He described the ore to me, and it sounded very similar to the ore the old Dutchman gave me for ferrying him across the river."

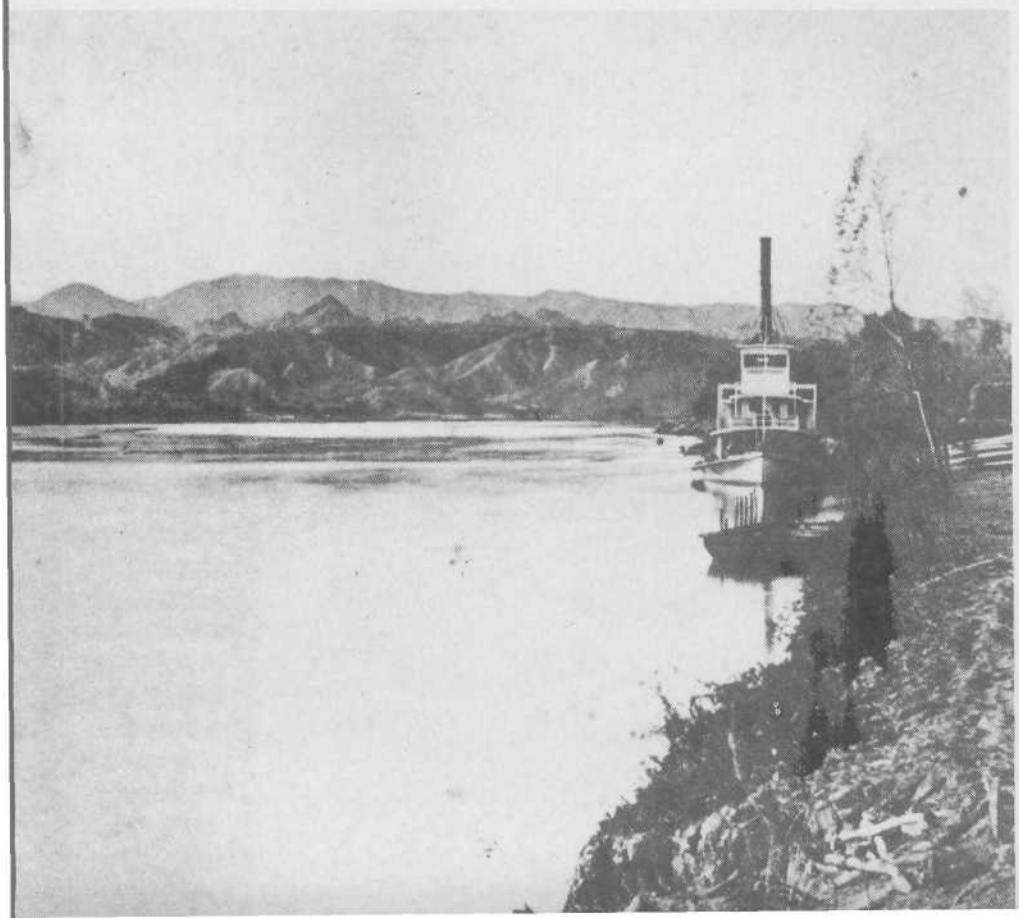
Ed had described the Dutchman's ore to me as a yellowish quartz so rich that bright free gold showed in every chunk (*Desert*, December 1958).

Ed believed that Bill's Indian in-law had tapped the same golden ledge of the Yuma Indians for which he, himself, had searched so diligently. At any rate, he said, it must be a ledge with a mighty powerful taboo. The Mohave Indian was dead within days after he had gathered gold there and given it to a white.

You can't say poor Bill Wilds escaped, either. Bill neither broke a taboo nor even attempted to. But he did profit from the gold, and he did tell at least Ed Rochester about it, and the last years of his life were miserable. As for his death:

"He died alone at his cabin there about 1916," Ed said. "The cats ate him up before anyone knew anything about it." □

Next month—the Lost Arch Mine of Picacho Peak.



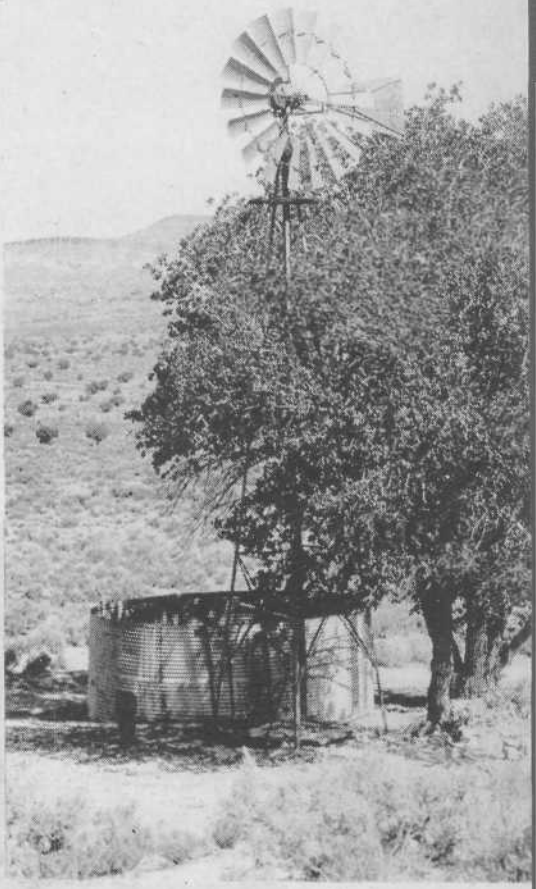
HIGH MOJAVE'S LONESOME TRIANGLE

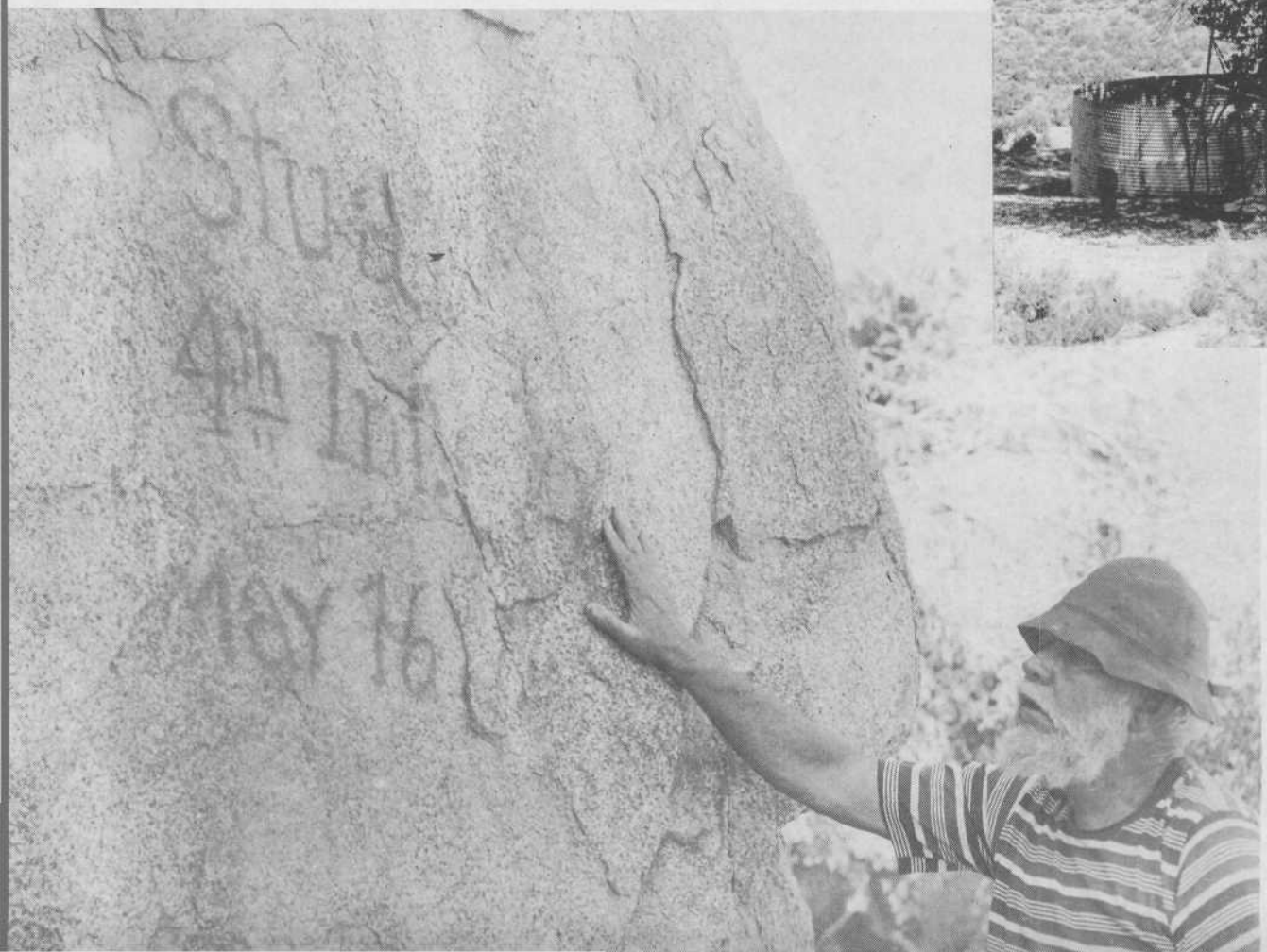
HISTORIC MID HILLS OFFERS COOL MIDSUMMER CAMPING, ROAD SITES

SOME CALL it the Lonesome Triangle; others, more officially, refer to the Providence-New York Mountains midriff as the East Mojave Unit. No matter which name you choose, romantic or prosaic, the huge region east of Barstow, California holds its own lures for travelers and history buffs.

Depending on where you draw the boundaries, or which mountain range is your base point, the vast slab of arid pie formed by the diversing routes of Interstate 15 and Interstate 40 along the Mojave River contains some of the most history-rich and scenicly diverse desert in Southern California—and much of it is surprisingly accessible.

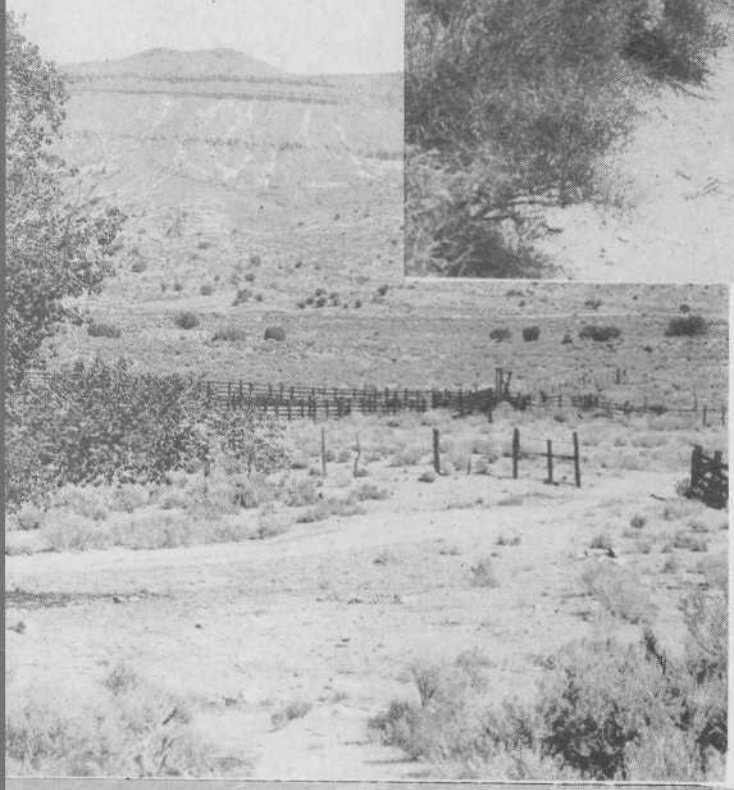
In order to make a weekend out of what could be a month-long trek, we'll cut the east and west ends out of the tri-





The most visible and tangible evidence of Camp Rock Spring's brief military tenure is this eroded "graffiti," attributed to a soldier in the California Volunteers who camped here briefly at the time of the Civil War.

by BILL JENNINGS



East of Lanfair junction, this visible remnant of the Government Road parallels a modern telephone cable service road. Old route, on the right, is still usable for about two miles eastward toward Piute Spring. Left: Government Holes is one of the remaining landmarks along the Mojave Road in the Mid Hills region. A windmill-pumped well continued in use until recent years and dated to the late 1850s, drilled by a civilian freight and stage contractor, Phinneas Banning. Below: The use of concrete and corrugated steel siding in the construction of this Spanish-Mexican style arrastre for the grinding of ore are tipoffs that it is not as old as it looks, nor as the 1859-vintage Government Holes nearby. It is one of many in the Providence and New York Mountains, presumably dating to the 1890s.

angle and concentrate on the Mid Hills—a pinyon-dotted highlands that links the Providence and New York ranges, within three-hour driving radius of most of the Southern California metropolitan area.

The lonely Kelbaker Road, most of it paved by San Bernardino County in recent years, is the main north-south link between the freeways. It runs from Baker on I-15 south 70 miles to Amboy, on old Highway 66. The new I-40 freeway bypasses Amboy 12 miles to the north.

Midway between Baker and Amboy is the famous old railroad town of Kelso, once a helper point and crew layover stop on the old Salt Lake Line, as the present Union Pacific was known a generation ago. Hence the name "Kelbaker" for the only through paved road connecting the two freeways between Barstow and Needles.

Kelso used to be a rendezvous for off-road and rockhound denizens who still abound in the Lonesome Triangle. But, alas, the old railroad cafe is no longer open to the public and the Trails End beer bar just up the Cima Road is also closed.

So Mid Hills offers the best available meeting place. The U.S. Bureau of Land Management has created a 30-unit campground in a pinyon and juniper grove at the 5,600-foot level, 16 miles north of the Providence Mountain State Recreation Area, about the same distance northeast of Kelso and 10 miles northwest of another good BLM campground at Hole-In-The-Wall.

Both camps have a supply of good well water, pedestal-style stoves and solid tables, but no available ground wood. You should bring your own or glean along the roadside. Pit toilets and, at Mid Hills a friendly ranger, complete the accommodations. Rates are $1 a night per space, no reservations.

Mid Hills is the preferred overnight site because of its location only about three miles from the route of the most historic "road" in this part of Southern California, the Government or Mojave route that once connected the Colorado River outpost of Ft. Mojave with the Los Angeles area, well before the Civil War.

Dennis Casebier, a federal government physicist and mathematician, but more accurately for our purposes the ranking historian of the central Mojave, has chronicled the Government or Mojave Road in a series of monographs or little volumes. The key unit of these labors of love is "The Mojave Road," and it, as well as the others are available directly from Casebier in Norco.

Next to the 15-minute series U.S. Geological Survey topographical maps, my most favorite guide to this area is the Casebier set. If you are a map freak, as the writer, you'll depend on the following 15-minute charts for this outing: (from west to east) Soda Lake, Old Dad Mountains, Kelso, Mid Hills, Lanfair Valley and Homer Mountain. You can skip the first and last if time prevents more than a three-day weekend.

Providence Mountains Recreation Area offers an optional campsite but the state's lack of funds has prevented adequate development there — on the northeast slopes. The caverns are worth a visit, particularly if you've not toured old Jack Mitchell's handiwork before. Even in summer the caverns offer a constant temperature in the mid-60s underground. There are a few campsites adjacent to the park interpretive center and ranger's quarters, about 13 miles north of I-40 at the Essex off-ramp. It's only eight miles more to Hole-In-The-Wall and 17 to Mid Hills from the junction at the power line road just four miles from Mitchell so take your choice.

Mid Hills can be brisk in winter, with a little snow on the ground when the writer pre-ran this trip in March, but by midsummer it will be hot in the daytime and surprisingly cool at night. Hole-In-The-Wall, about 700 feet lower, is warmer. The Mitchell camp is sort of in-between.

From Mid Hills, the nearest point on the old Government Road is the junction with the Cedar Canyon county road, four miles to the northeast. Cedar Canyon Road connects with the paved Kelso-Cima road near the Chase siding on the Union Pacific, five miles south of Cima.

The old trail is still used in this area, from Lanfair Valley west to Marl Spring, although most modern maps won't show it clearly. The topo shows the route clearly, all the way from Lanfair west to Soda Lake, via Rock Springs, Govern-

Remnants of the horse corral used by both Army and civilian stage operators at Rock Spring are gradually disappearing. Due to scarcity of timber, much of the walls and fencing were fashiioned out of native stone. Hay was hauled from the Colorado River, 40 miles to the east.

A modern camp in the Rock Spring area is maintained by the BLM at Mid Hills, about 10 miles southwest of the old military site. Located at 5,600-foot elevation the camp is one of the coolest in the Mojave Desert at mid-summer.

ment Holes, Marl Spring and two alternate routes to Soda Lake, the northerly via Seventeen Mile Point, the southerly around the tip of Old Dad Mountains and the sandy wastes of the Devil's Playground area.

Two warnings right here. The southerly route enters a "special design" area prescribed by the BLM Desert Plan and also is a trackless maze much of the year due to the blowing sand and lack of landmarks. If you take the Old Dad route, head northerly away from the power line road near the old well site at the southern tip of Old Dad along a wash road that hits the Kelbaker midway between Little Cowhole Mountain and Seventeen Mile Point, about 10 miles to the north. None of these side roads are reliable for other than four-wheel-drive or high-center two-wheel. Care and Caution are the watchwords.

The modern Kelbaker Road traces part of the old Government Road near Seventeen Mile Point, which also is adjacent to the most interesting lava area in the Lonesome Triangle. More than 20 cones and fissures dot the region north of the road from 10 miles northwest of Kelso into the fringes of Soda Lake near Little Cowhole.

Another Warning! Many sideroads in this region lead toward interesting old mines, but many are still active claims and the "no trespassing" signs are well-intentioned and should be observed.

Actually, our route from Mid Hills, for the first day at least, leads east, past Government Holes (only five miles northeast) to Rock Spring and eventually to the glory of Piute Spring and old Ft. Piute, in the Piute Mountains at the east end of Lanfair Valley.

Casebier did his research well here, both in the National Archives in Washington, D.C. and on a 130-mile hike between the Colorado River and old Camp Cady, southeast of Yermo, in eight days in the fall of 1975. He found the old road still discernible at several points, particularly in the Lanfair Valley area.

Casebier, the San Bernardino County Museum Association, as well as several other regional historical and official bodies, have recommended the inclusion of the old road into the system of National Historical Landmarks. That would be the best way to keep the route safe for the succeeding generations.

The first known traveler, other than the Indian aboriginal residents, to use the route was Father Francisco Garces, the chaplain for the Anza expeditions, who traversed the region in 1776. Garces' route, still open to debate, has been commemorated with a handsome bronze plaque at Marl Spring, 10 miles north of Kelso, but historians, notably Casebier, feel the marker was misplaced.

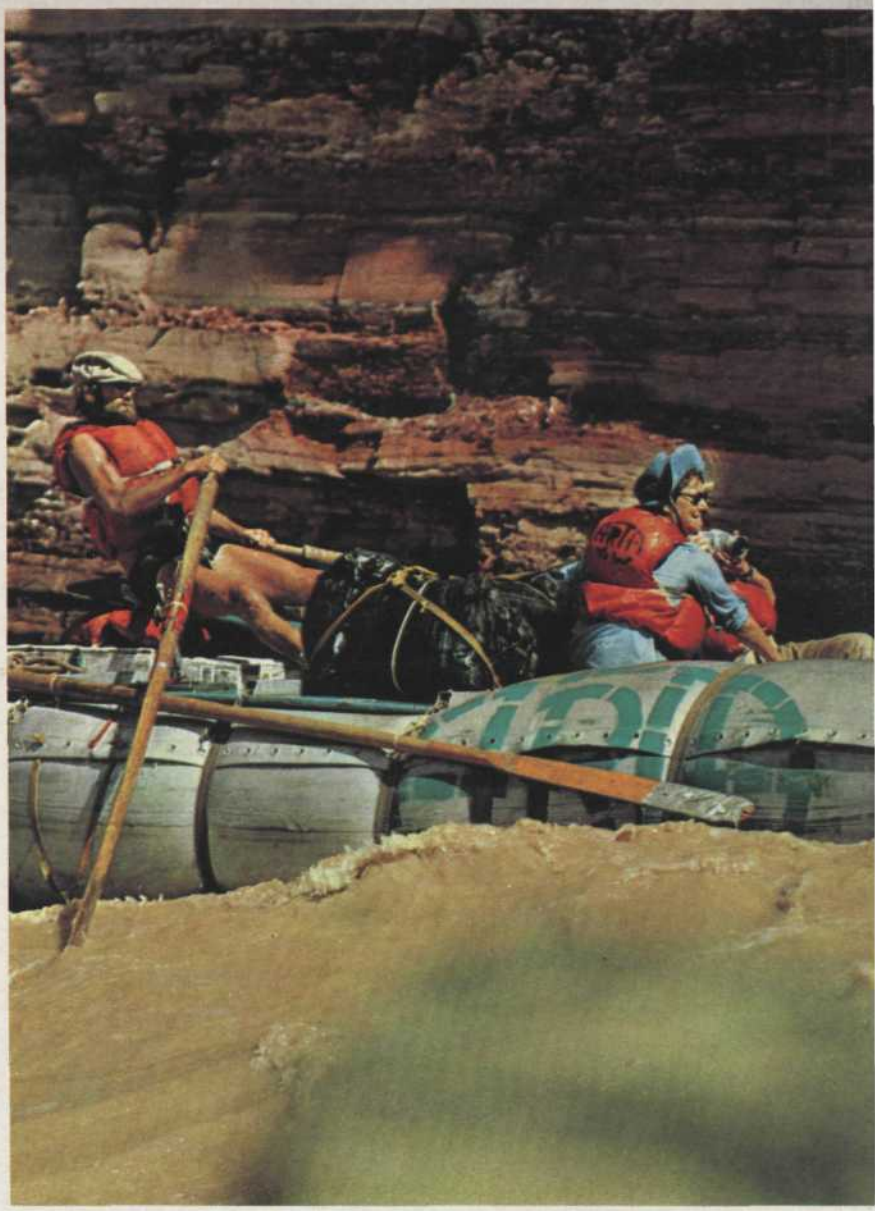
Garces' journal has been cited by many authorities, including Elliott Coues, Dix Van Dyke and more recent visitors—as evidenced by the bronze marker at Marl Spring. This ever-flowing sidehill stream draws its name from the clay deposits that surface there. It was an overnight stop along the Government Road and is still in use today for cattle and the occasional traveler. It is located 10 miles north of Kelso on a well-traveled utility service road that runs into the old Government Road three miles north of Marl Spring.

Casebier's research indicates that Garces did travel the route, followed in 1819 by Spanish Lt. Gabriel Moraga, but no road as such existed until Edward Beale, former Naval officer and civilian contractor, laid out the trail as part of the 35th Parallel railroad survey in the mid-1850s.

As a military supply route used both by wagons and pack trains—at one time consisting of camel!—the road was heavily used until well after the Civil War. During the same period and later much of the military and mining transport in the eastern Mojave was provided by Colorado River paddlewheel steamers, the last water link in a lengthy route from San Francisco via the Gulf of California.

Beale's famous camel caravans used the Government Road from Ft. Mojave on the east bank of the Colorado just

Continued on Page 39



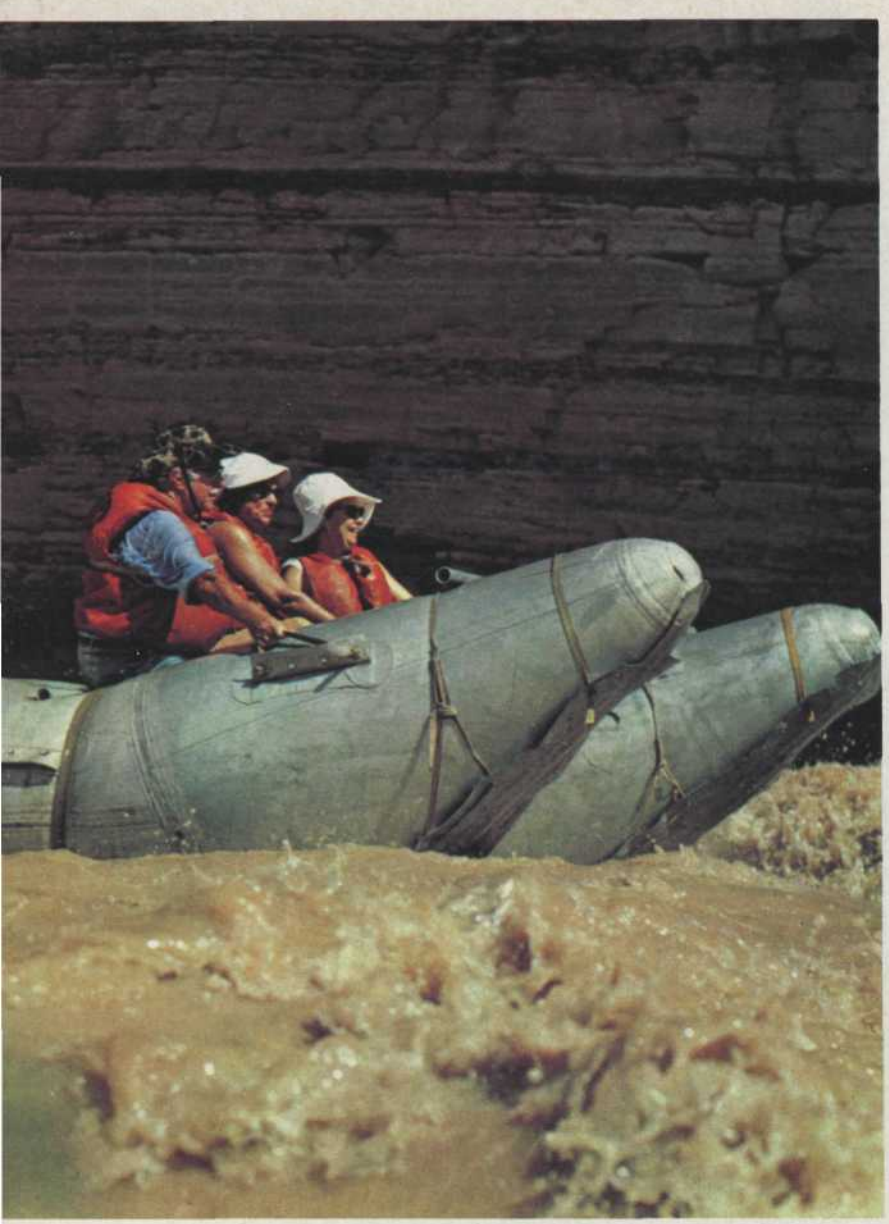
Taking a float trip on a oar-powered raft down the Colorado River is being up a creek with a big paddle! Photo-journalist Dave Howard brings us his impression of . . .

12 DAYS ON TH

ATTEMPTING TO condense 12 days and 281 miles on the Colorado River through Grand Canyon down to a few pages of writing is like trying to copy Howard Johnson's menu onto the back of a postage stamp with a crayon; of necessity, you have to omit a few goodies. And goodies aplenty there were. It was a virtual 12-day visual orgy of scenic delights, interspersed with enough white-water thrills to satisfy the most jaded adventurer. From beginning to end, the trip is a geologist's Nirvana. That's plying the art of understatement to perfection.

However, before I get ahead of myself, let's start from the beginning. There are several companies offering raft tours of the Canyon, but this trip was through the efforts of ARTA (American River Touring Association), of Oakland, California. They conduct river tours from Canada to South America, so if the Canyon trip leaves you yearning for more (and it will), they can keep your white-water urge occupied for quite a while. Tours of 5, 8, 12 and 16 days duration are offered. You might think that 12 days could be a little longer than you'd care for, but, speaking from experience, at journey's end you'll be wishing you'd opted for the 16-day trip.

After the 45-minute company-provided bus shuttle from the meeting place at Page, Arizona, you arrive at Lee's Ferry the starting point. Following an introduction to your boatmen and stowing your gear into waterproof dunnage bags, you don life jackets, clamber aboard your



The boatman strains on the oars while running Unkar Creek Rapids. Most passengers express a variety of expressions as they anticipate their immediate future with firm handholds. Note, however, just left of center, a camera buff calmly adjusting his telephoto lens!

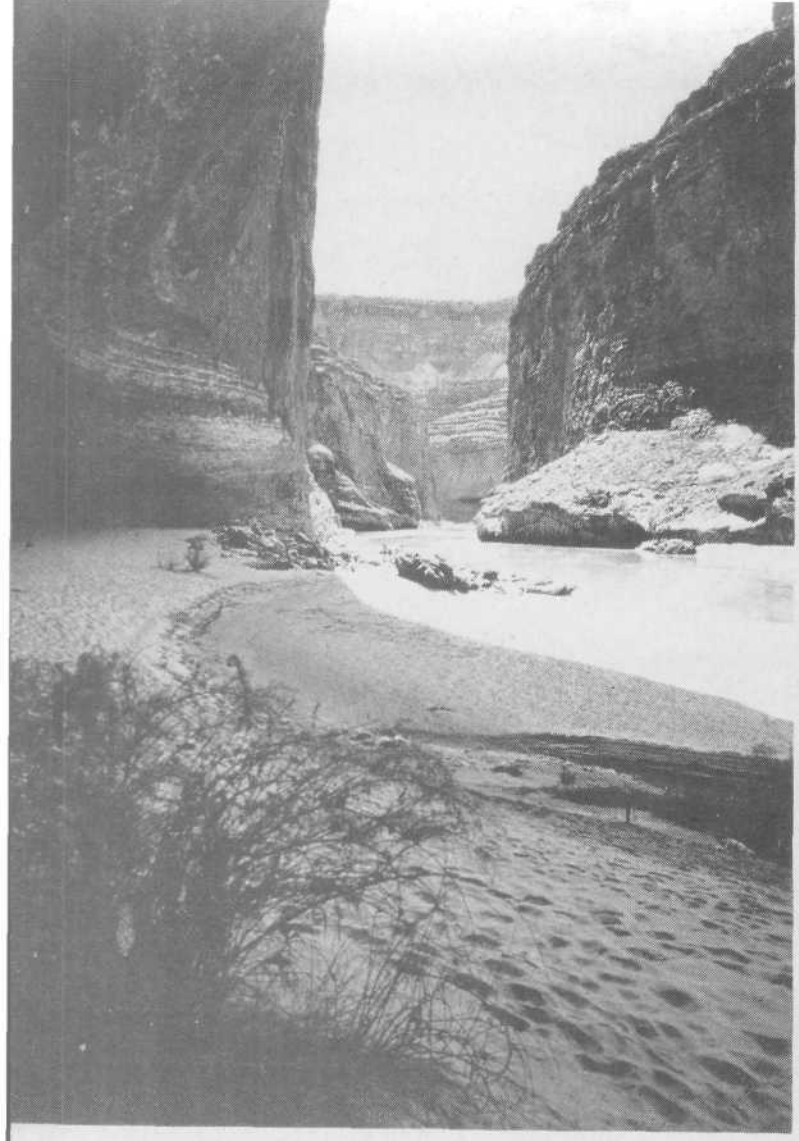
IE COLORADO!

by DAVE HOWARD

raft, and are soon watching the last vestiges of civilization fade away in the distance. There were four rafts on this trip, with six passengers and a boatman per raft. We had four boatmen, Al, Don, Bob and Jeff, and one boatgirl (boatperson?), Marilyn, who throughout the 12 days would prove to be very competent, concerned and knowledgeable guides, and darn good cooks. The entourage was composed of all ages, from the Pepsi generation to folks whom I doubt have missed a Lawrence Welk show in years. The senior member, at 70, David Inglis from New England, frequently hiked circles around many of the younger members.

A short distance out of Lee's Ferry, you pass the mouth of the Paria River, which muddies the relatively clear water upstream. Several days later, you'll come to the bend in the Canyon where the Little Colorado empties its cargo of silt into the Colorado proper, imparting to the water the color that earned the river its name. This is also the point where you actually enter the Grand Canyon. The canyon you've traversed up to this point being Marble Canyon.

A few little riffles provide a fleeting introduction to the white-water that lies ahead. At seven miles, Navajo Bridge glides silently overhead, 467 feet above the water. Before long, a distant roar intrudes upon the silence, increasing with every stroke of the oars, until you're confronted with the first "big-name" rapid of the trip, Badger Creek Rapids. There are a few wistful glances at the name



The beach at Redwall Cavern.

painted on Don Briggs raft, "Speed Kills," some unconvincing laughs, and a lot of tightened grips.

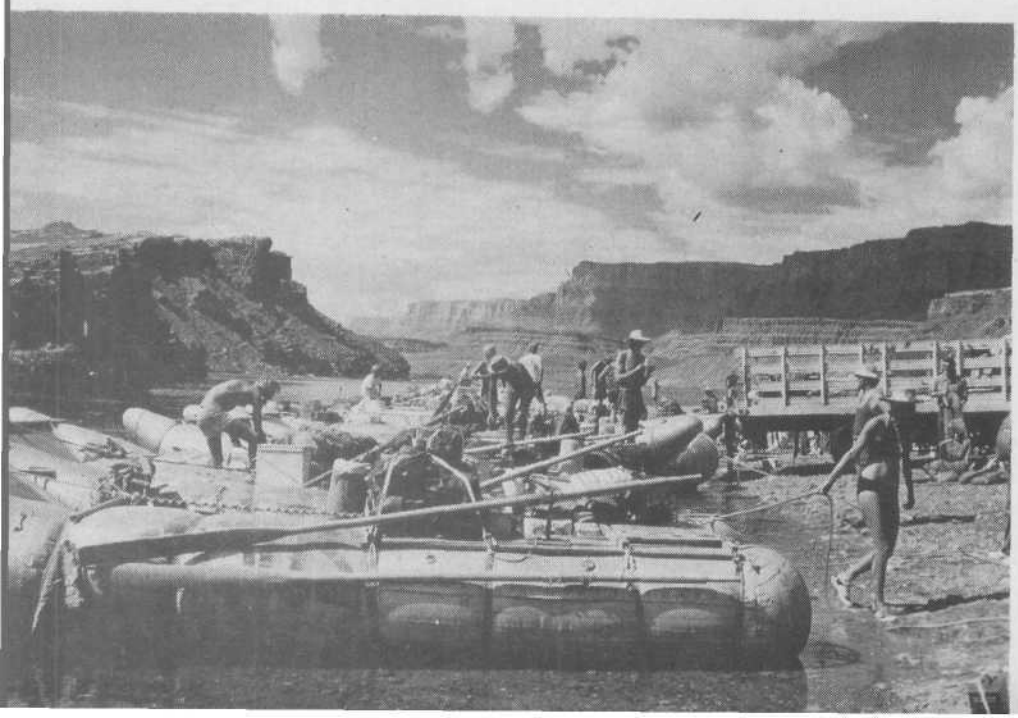
Then the roller coaster ride begins. Waves that looked rather insignificant from a distance suddenly loom quite impressive as the raft crests one wave, then nose-dives down the wave's back side, into the hole in front of the next oncoming wave. The current spins the raft around, and we back-slide into another wall of water. You soon discover how your beer will be kept cold; the water is 48 degrees F. Several ups, downs and arounds later, the rapids taper off into calm water again. With an assortment of exclamations, and more than a few sighs of relief, a damp but happy group turns to watch the other rafts make their runs.

This scene will be repeated many times at rapids with names such as Soap Creek, House Rock, Granite, Hermit, Specter, Upset and Deubendorff, with countless others, large and small, in between.

By now, several people are over any qualms they may have had about running the rapids, and are riding out on the snouts of the pontoons, like bull-riders in a rodeo. As you can see in the photos, these rafts are formed of two 22-foot-long pontoons, pointed on one end, with a framework between them. Due to the pointed snouts, they are nicknamed "rockets," as opposed to the larger oval-shaped "baloney boats" used for the motor-powered tours. You get more action in the rapids with the oar-powered "rockets," and there's no bailing necessary. Oar power proved to be the right choice. Several times during the trip, we were passed by motor-powered rafts. The whine of the motor, amplified by the high, narrow canyon walls, sounds like a mammoth Osterizer bearing down on you from upstream.

As the first day draws to a close, you make camp beside the river. If you envisioned endless rounds of beans and Spam, your fears are quickly laid to rest as your boatmen-turned-chefs quickly produce a dinner of pork chops, soup, salad, vegetables and all the trimmings. All fresh, thanks to dry ice. Later, meals would consist of such spartan fare as steak (grill your own), shrimp curry, beef stroganoff, fresh-baked gingerbread, strawberry shortcake and even an all-Mexican menu night. On the fifth and sixth evenings, many people were suspect of their hearings when the call rang out, "line up for ice cream." It was for real, and hard as the canyon walls! Ah, the pleasures of roughing it!

After retiring to your sleeping bag, many supremely relaxing hours can be spent marveling at the myriads of stars,

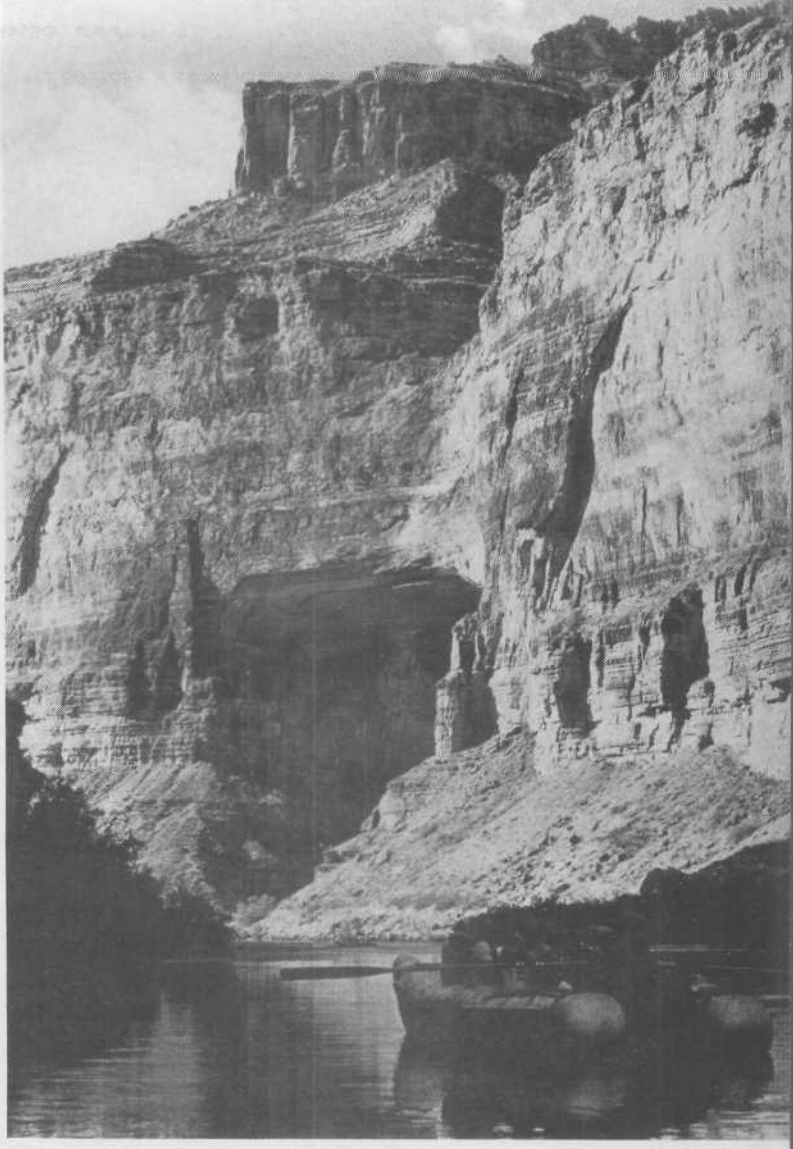


Making last minute checks at Lees's Ferry, starting point of the trip.

undimmed by city lights, with the occasional flash of a meteor, until the moon climbs over the rim of the canyon, and the sound of the river lulls you to sleep.

Rising at dawn, you attack a breakfast that includes flapjacks, French toast, scrambled eggs, fruit, English muffins, juices, coffee, hot chocolate, etc. The rafts are then pushed into the water (the water level drops during the night, beaching them), reloaded, and you're off for another day of wonders.

All the boatmen are quite eager to share their knowledge of the history, geology and ecology of the canyon, and they encourage you to make use of the small library on the subject that each raft has in a watertight box. By trip's end, historic names like Powell, Bass and Hance, geologic mouthfuls like tapeats sandstone, toroweap limestone, coconino, redwall, muav and supai will be fascinating and familiar friends. You'll learn that the "great unconformity" and the "hotauta conglomerate" are not the latest singing rage, but readable evolutionary signposts as you descend deeper and deeper into the geologic past on your journey through the canyon. The problems arising from over-damming the nation's wild rivers will also be explained. Your presence on the river removes these problems from the realm of the abstract, to the glaring light of reality.



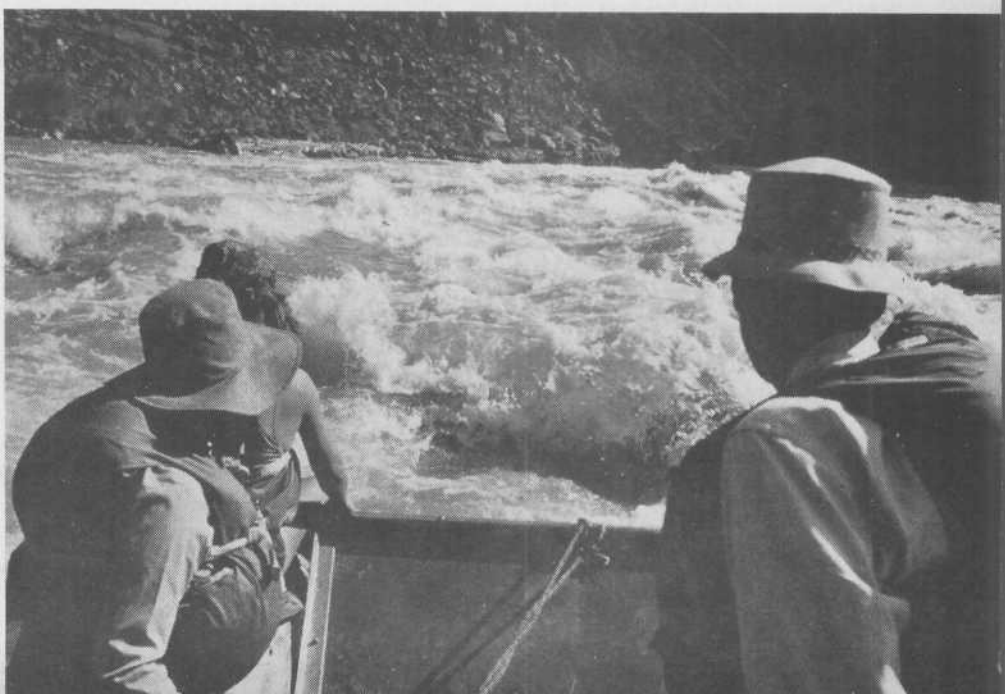
Approaching Royal Arches.

A few days into the trip, a small raft is unpacked and inflated. Called the Avon Adventurer, it's just the ticket for those for whom rapid-running in the big rafts has now become old-hat. It will be host to a full complement of volunteers for all of the rapids except a few big crunchers like Crystal Falls and Lava Falls, where discretion is definitely the better part of valor.

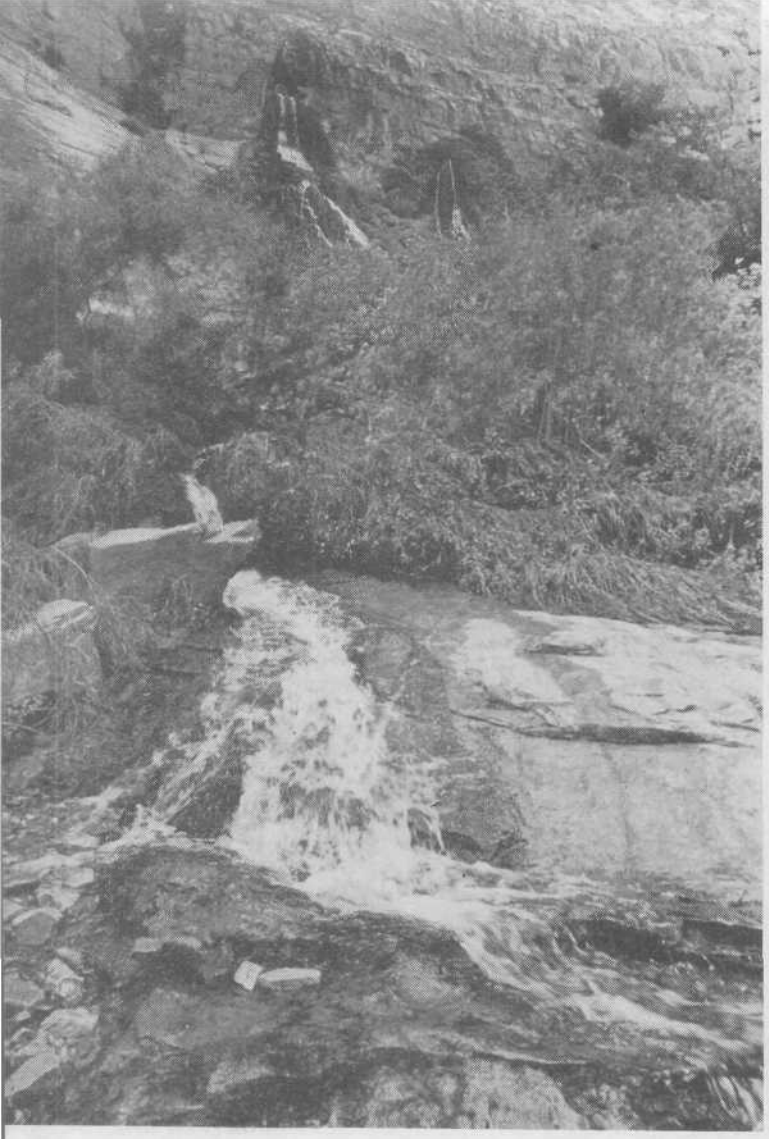
Drifting silently with the current, the stillness is a heady sensation. On such occasions, Ted Cochran, a cinematographer from Palo Alto, California, would read to us from a copy of "Wind In The Willows." It seemed quite apropos. It is the proper atmosphere in which to gaze upon such handiworks of the Colorado as Royal Arches and Redwall Cavern. As a sculptor, the Colorado has few rivals.

History buffs are rewarded at several spots along the route. Indian ruins at Unkar can be explored on shore, while other evidences of their past can be seen up on the canyon walls, such as granaries, salt mines and the Anasazi bridge. You can also hike to the century-old Hance Mine. Here is where Hance mined asbestos for a while under rather arduous conditions. He finally gave it up and started guiding tourists into the canyon in the 1880s.

A short climb into Nautiloid Canyon



Entering Soap Creek Rapids.



Left: Vasey's Paradise.
Below: Camp at daybreak on the 10th day.

lets you inspect the fossilized remains of Nautiloids, tentacled marine animals with spiral cone-shaped shells about two feet long. Water running over the canyon floor has polished the rock and exposed the fossils to view.

Other side-hike highlights include:

Elves Chasm, a narrow little canyon with a lovely feathery falls and clear pool, after a short climb.

Deer Creek. Don't miss this one. The first part of the trail is steep, and poison ivy is present in places, but easily avoided. The scenic awards are worth any effort to attain. From the river, you can see tall, slender, lower Deer Creek Falls as it cascades from the sheer wall of the canyon into a pool below. Above the falls can be seen the deep narrow cut the water has made over the eons. When you get to the top of the trail, the serpentine nature of the cut unfolds before you in labyrinthine splendor. Further along the trail is another falls, then opening into a verdant valley-like canyon. The view of the Colorado from the top of the trail is also spellbinding.

Kanab Canyon, the longest and most strenuous hike of the trip. It's not steep, as it follows along Kanab Creek, but it's several miles of climbing over piles of boulders, through mud and wading across the creek many times. In short, long walk on wet feet. The payoff, other than the walk up the canyon itself, is a short way up the first side-canyon to the right; some quiet pools and a wispy falls. A group of bighorn sheep were also seen here.

Havasu Canyon, the scenic apex of the entire trip. Webster would have to coin a whole new set of adjectives to do justice to it. Only superlatives will do. The clear turquoise waters of Havasu Creek form one sublime pool and falls after another, each one beckoning you to explore further, every bend revealing another set in this crown jewel of canyons. Little more can be said; this one must be experienced in person.

In addition to the bighorn sheep just mentioned, deer, wild burros (descendants of mining days in the canyon), ducks and great blue herons put in appearances during the trip. The comic call of the canyon wren is constantly with you. The notes start loud and quickly taper off into nothing, as if someone had tied his wings behind his back and then booted him off the rim of the canyon. Binoculars will be useful for observing the wildlife, but be sure to protect them, as well as any camera equipment, adequately from water damage. Big waves from the rapids can shove water right through things that would be quite sufficient against rain. Surplus ammo boxes are good. They're available at Lee's Ferry if you can't find any locally.

The ultimate rapid comes during day ten; the legendary Lava Falls. There is a hole on the right side that has to be seen

to be appreciated. The deafening roar that permeates your very marrow would do justice to a sound track for a Hawaiian surfing film. The sense of power that sight and sound convey is nothing short of awe-inspiring. We were aware that two rafts running that hole on the previous trip were flipped by it. No casualties, but something to think about. As at previous rapids that command a high order of respect, such as Crystal Falls and Granite, the boatmen pull the rafts into shore above the rapids and walk around to reconnoiter. This is necessary due to the fact that the nature of the rapid, and therefore the safest way through it, changes with the water level.

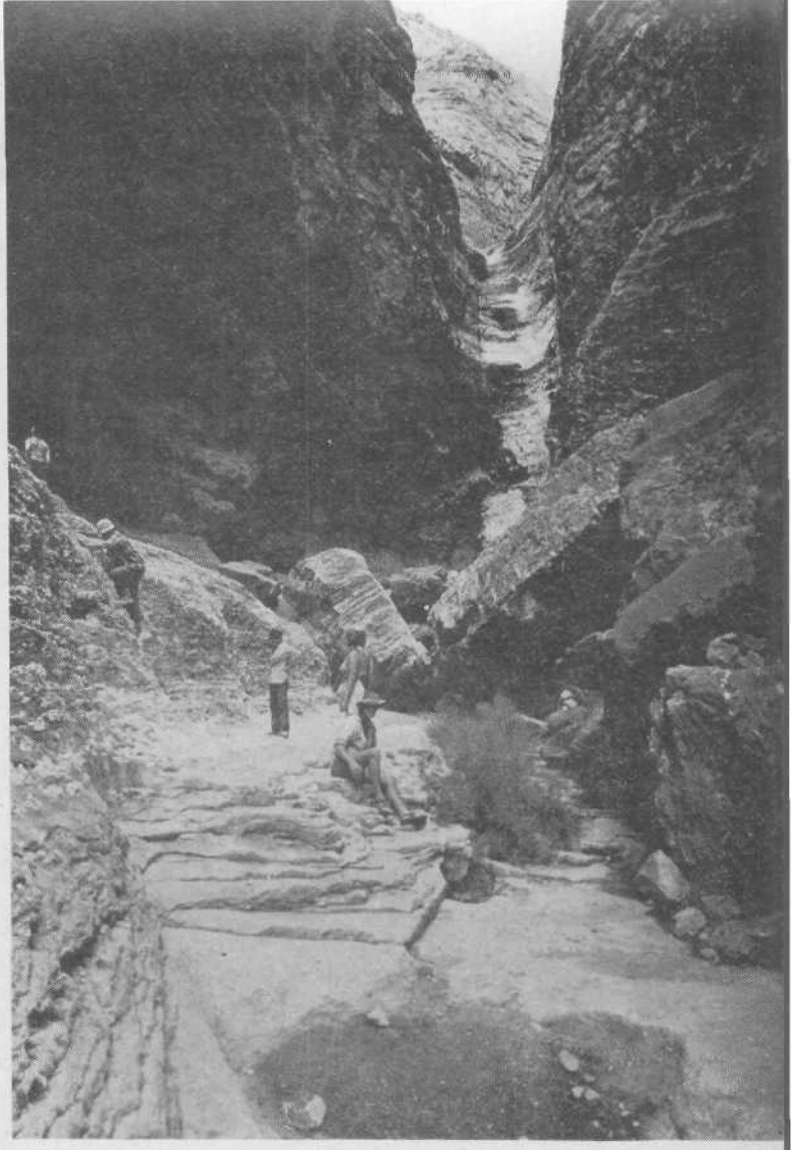
We arrived in time to watch two rafts of the eight-day trip make their runs, both safely. The last raft even went through the middle of the big hole with snout riders. Wrestling alligators in a phone booth must seem tame after that! Having picked their routes, our oarsmen headed their rafts out into the current to begin their runs. Marilyn picked the cautious path down the left side and had a relatively uneventful passage.

Don, Bob and Al chose the thrill-seeker's express down the right, through the hole. As each would dive into the hole, there would be a terrific WHUMP! as the raft made contact with the wave, water exploding around the sides and through the frame. The nose would then shoot up at a steep angle ("rocket" is right!), followed by another resounding roar as torrents of water from the cresting wave cascade down onto the raft, buffeting people about in a convincing display of raw power. Then it was over the top to safety; the brown monsters of Lava Fall's hole (legendary river demons, concocted by the boatmen) would have to wait another turn at their mischief.

We pick up a motor at Diamond Creek (mile 225.6), because as we near Lake Mead, the current becomes too sluggish to make any time. After dinner of the final evening, the four rafts are lashed together and the "float-out" is underway. We sleep on the rafts, drifting with the current. In the morning, breakfast is also served in mid-stream, and the motor is cut in for the last miles to Pierce Ferry.

Here the canyon and river widen and flatten out, gradually becoming the desert country surrounding Lake Mead. The eight-day trippers, who have been running close to us since breakfast, develop engine trouble, so we take them in tow.

Before long, the shores of Pierce Ferry come into view, with the ARTA trucks waiting to disassemble the rafts, and an unforgettable adventure draws to a close. The shuttle bus to Las Vegas carried a cargo of tired, but happy "river rats," all of whom will have quite an answer next time someone asks, "Where'd you go on vacation?" □



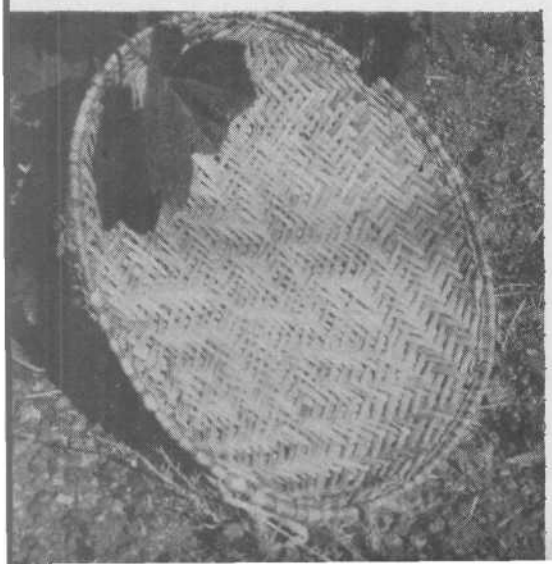
Right: Exploring fossil remains in Nautiloid Canyon. Below: Rafts from trail to Hance asbestos mine.

A Desert Blessing

by VADA CARLSON

AT FIRST glance the Southeastern desert may seem to be only a vast expanse of desolation, all hot sand, jagged rocks and hostile plants. The sand, flung by capricious gusts of desert wind, stings like so many tiny whips; the rocks are unattractive; the desert plants bristle with thorns and claws. But, in spite of all its drawbacks, the desert has its own distinctive charm, and its blessings. One of the latter is the yucca.

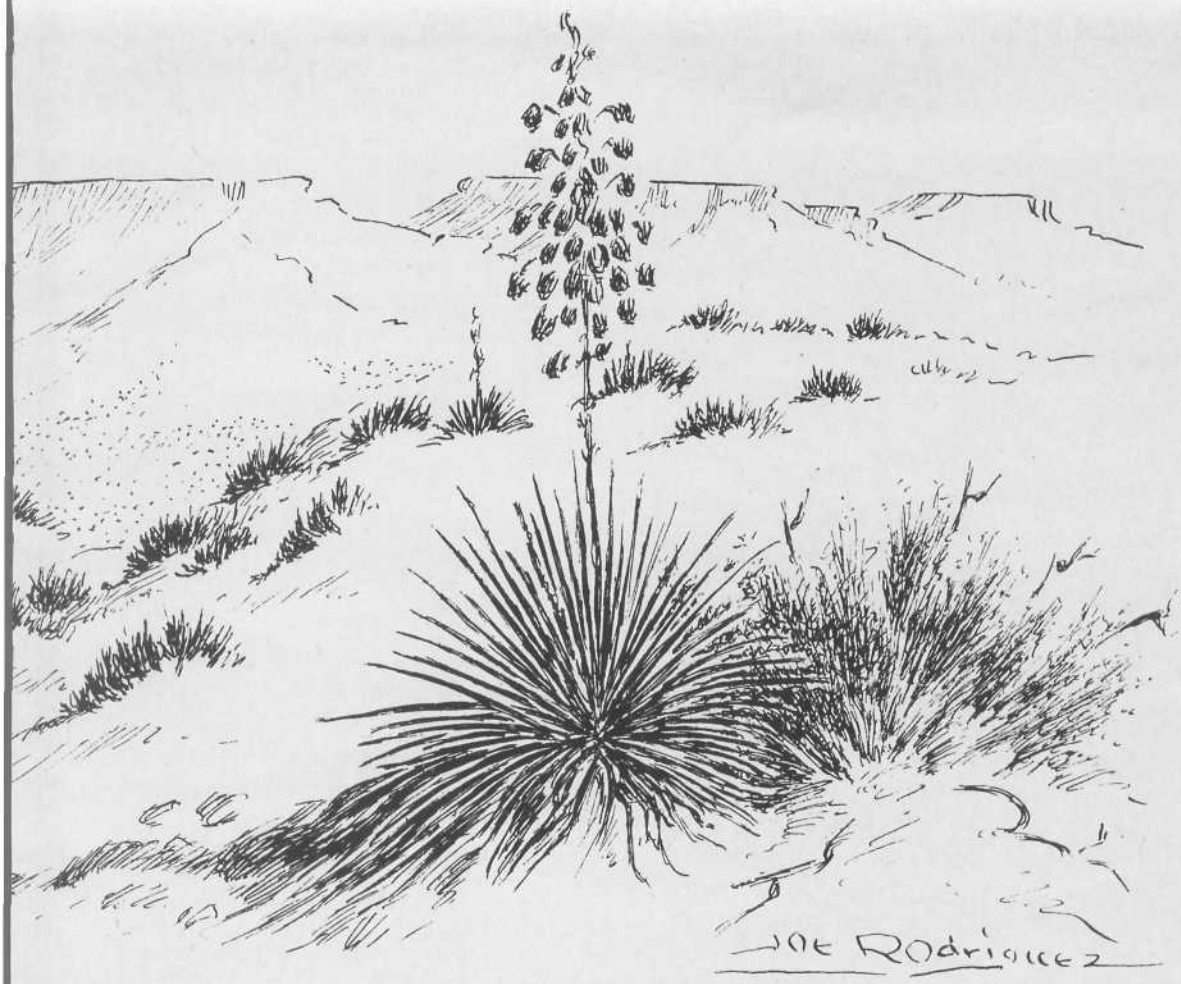
The beauty of the yucca's bell-shaped and waxy-white, or cream-colored flowers, topping a tall stem that rises from a rosette of vividly green spears, has earned it the poetic title of "Candle of the Lord." Seen against a background of black lava rock, a stately yucca shaking out its pristine shower of loveliness is a dramatic sight. The white flowers are followed by bright green seedpods that split open in the fall to reveal tight rows of flat black seeds for the wind to nudge out into flight. The empty seed pods, pale brown with touches of black, are ornamental in their natural state or sprayed silver or gold.



However, the yucca's greatest asset is its varied usefulness to man. Hundreds of years ago, when wandering bands of Indians arrived in the desert country seeking homes in this area which was later to be included in the United States of America, they were driven by stern necessity to search out advantages not readily apparent. Perhaps they came in the springtime and the beauty and lavish flowering of the yuccas aroused their curiosity. A veritable wealth of uses rewarded them. The root, they found, could be swished in cold water to provide a rich suds. In this emollient they could wash their hair, their bodies, their clothing and their utensils. The needle-sharp leaves of the plant's basal rosette were edged with a tough fiber that could be pulled loose and used as thread. The yellowish heart leaves could be sun-cured and transformed into baskets and plaques, useful in moving to new locations.

In some localities the yucca plant is called "soapweed" because of its root. It has many close relatives. About 30 species grow in an area from the sandhills of Nebraska to southern California, always in arid regions. Included is the Spanish bayonet with its rapier sharp leaves. It thrusts up a thick, pinkish stem two or three feet high and develops a pyramidal cluster of lovely blooms. The agave, another relative, grows six or seven feet tall and has outthrust "arms" with a "handful" of yellow to red flowerets at the tip of each. The sotol has a tall rough stem and a panicle of small flowers.

Other more spectacular relatives are the century plant and the maguey, as well as the shaggy Joshua tree which limits most of its growth to an area of the Mohave Desert reaching from California to Nevada. The Joshua tree has been named "Monarch of the Mohave," and



Left: Pencil sketch by Joe Rodriquez. Sifter [below left] and plaque [below] both woven from yucca material.

"wonder plant of the world." An average-sized Joshua may, so some authorities claim, be from 100 to 1,000 years old. Its flowers appear in clusters at the tips of the branches. They are much like the less pretentious yucca, but like the yucca can only be fertilized by the yucca moth, which insures the future of the plants it fertilizes while securing an incubator for its own progeny.

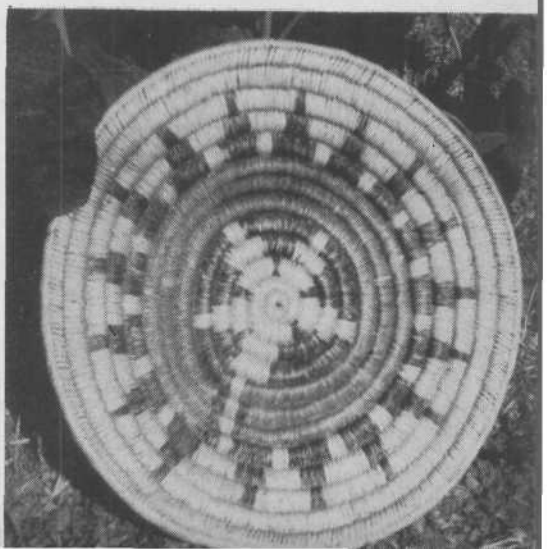
Only the Pronuba, of all the infinite variety of insects, is able to penetrate to the heart of a yucca bloom. This frail flutter of silvery white, with the sparkling black eyes in its tiny white face, flits from flower to flower gathering pollen in its tiny jaws. When it can carry no more it slithers into a yucca bloom, deposits the golden grains on the bloom's sensitive ovary, then lays its eggs in the pollen. The pollen will serve as food for the grubs that will hatch from the moth's eggs.

The petals then fall from the fertilized flower and a green seedpod develops in its place. The grubs eat their fill of pollen then eat their way through the thick green pulp of the growing seedpod and fall to the ground. There they burrow in and rest while changing into a caterpillar and later emerging as a moth, which will be prepared to complete the cycle of fertilization of yucca blooms. A small round hole in the seedpod is the sole reminder of their former residence.

The maguey, seen often in Mexico thriving on old lava flows, is like the sandhill soapweed and the hardy Arizona yucca in its ability to strike down roots in most unlikely places. Its rosette of gray green leaves is comparable to the century plant's more colorful rosette, and both thrust up a powerful tall stem. The maguey serves the more primitive Mexican farmers by furnishing dried leaves for thatching roofs and making fences, and the fiber in the big leaves can be extracted by pounding, scraping with a blunt instrument, or steaming. These strong fibers are used to make mats, sandals, ropes and other necessities. A readymade needle and thread can be secured by making a cut near one of the sharp brown thorns that adorn the thick, wide leaves, and pulling it back so that it takes with it a length of fiber from the leaf's exterior.

In addition to its other uses the maguey's tender white heart can be cooked and eaten as a vegetable. The basin remaining after its removal fills with a liquid that drains from the standing plant. It is called *pulque* and can be used as a drink, which, fermented, is intoxicating.

To realize that the growth and flowering of these magnificent plants depends on the kind offices of the wispy yucca moth is to acknowledge how amazingly the Creator works to perpetuate His creations. □



NO. 9 IN A SERIES ON CALIFORNIA PALM OASES

Fortynine Palms

by DICK BLOOMQUIST

FORTYNINE PALMS, protected within Joshua Tree National Monument and reached only by trail, has retained its air of remoteness. From the town of Twentynine Palms drive west on Highway 62 to Canyon Road. Turn left here, following the road to its end at a National Park Service parking area. From this point the trail—one and one-half miles in length—climbs a steep ridge before dropping down to the knot of Washingtonias in Fortynine Palms Canyon. Expansive views of the Bullion and Sheephole ranges, of Fortynine Palms Canyon, and of the palms themselves unfold as the pathway winds up and over the rocky spur. Closer at hand, natural gardens of desert plants grow among the boulders. Hedgehog and barrel cacti, burrobush, creosote, jojoba, desert or squaw tea, yucca and brittlebush all enliven the slopes here.

Once the oasis is reached, however, the scene changes abruptly, and dry, sunburned ridges give way to dripping springs, deep pools and the dense shade of palms and cottonwoods. Unlike Pushawalla, Andreas, Murray and other canyons in which the trees are strung out for long distances, this is a compact colony centered on a rich supply of surface water. The trail passes 10 Washingtonias on the grove's arid fringe, then enters the heart of the oasis, where some 45 palms rise above the springs and pools. The tallest trees are 30 to 35 feet in height.

Just beyond, 30 fire-scarred veterans accompanied by over a dozen youngsters crowd the lower slope of a steep hill forming part of the canyon wall. Seen from afar, this cluster is especially colorful and attractive.

I counted 99 palms at the oasis, just over twice the number recorded in its name. Like Twentynine Palms a few miles to the northeast, this stand of Washingtonias is on the increase. At an elevation of 2800 feet, it is also one of the loftier groves in the desert.

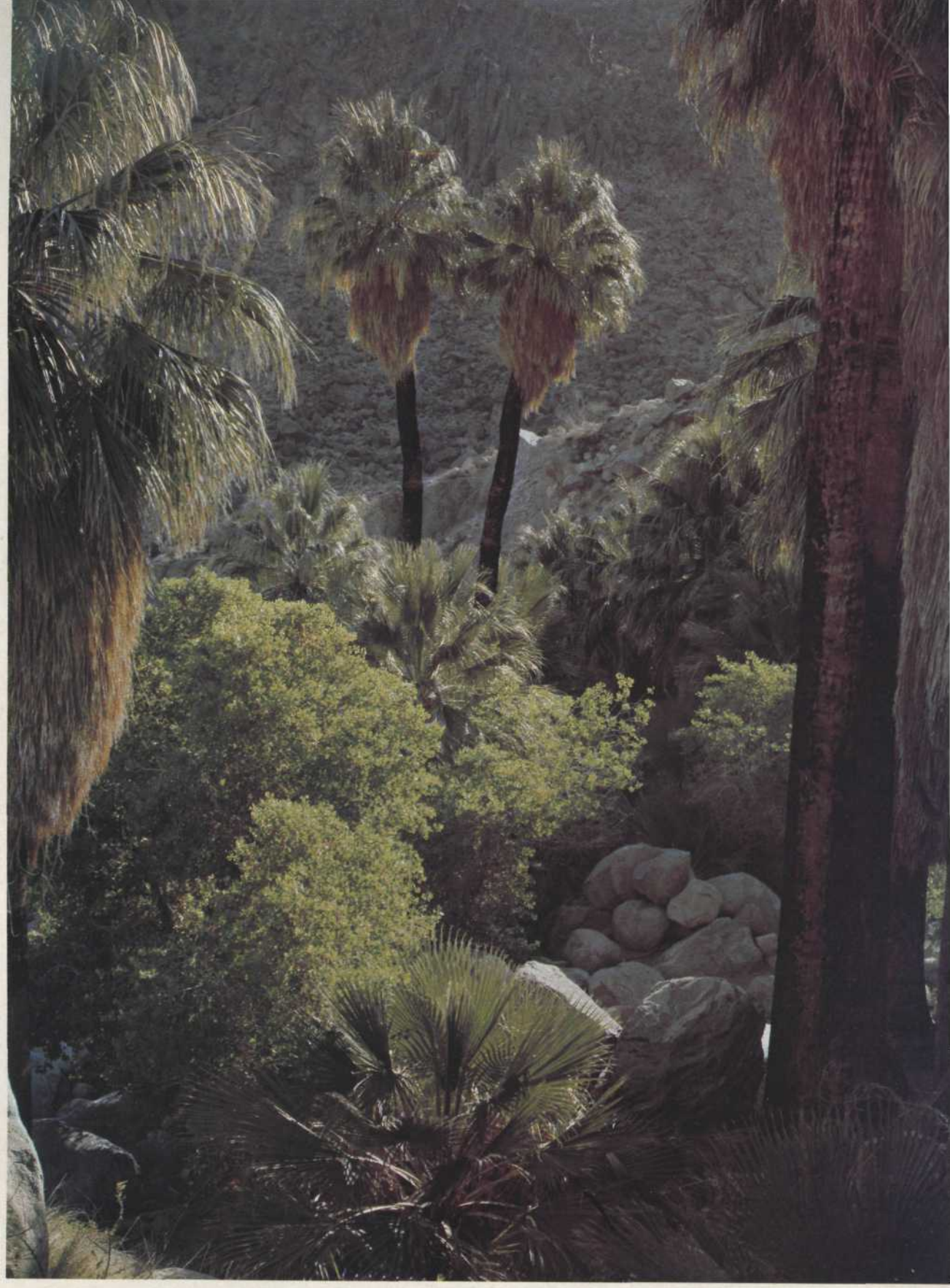
Abundant water plays an important part in the appeal of Fortynine Palms. Springs and seeps feed various rivulets, which in turn fill calm, shady pools set among the rocks on different levels. I watched water striders ply one palm-and granite-bordered pool 15 feet long, 8 feet wide and over 2 feet deep; now and then a gentle breeze drifted cottonwood leaves across its smooth surface. Another basin was supplied drop by tinkling drop from an upper level, and a third received a portion of its moisture from directly overhead. A cottonwood tree had fallen over it, and water that had seeped into the dead wood was dripping from the log's underside.

Mesquite, willow, arrow-weed, bladder pod and catsclaw have also established themselves at Fortynine Palms. I found one pinyon pine cone washed down by storms from a higher elevation. Hummingbirds hovered, house finches sang, phainopeplas called, a frog croaked. The oasis overlooks part of the town of Twentynine Palms, but in its tranquility and undisturbed loveliness it seems many more miles removed from the bustle of modern life.

Mileage Log

0.0	Intersection of Twentynine Palms Highway (Route 62) and Adobe Road in town of Twentynine Palms. Drive west toward Los Angeles on 62.
3.9	Turn left (south) on Canyon Road.
5.1	Enter Joshua Tree National Monument.
5.5	Road ends at parking lot. From here it is one and one-half miles by trail to the oasis. Elevation at palms 2800 feet.

Fortynine Palms Oasis. Photo from Randall Henderson collection.

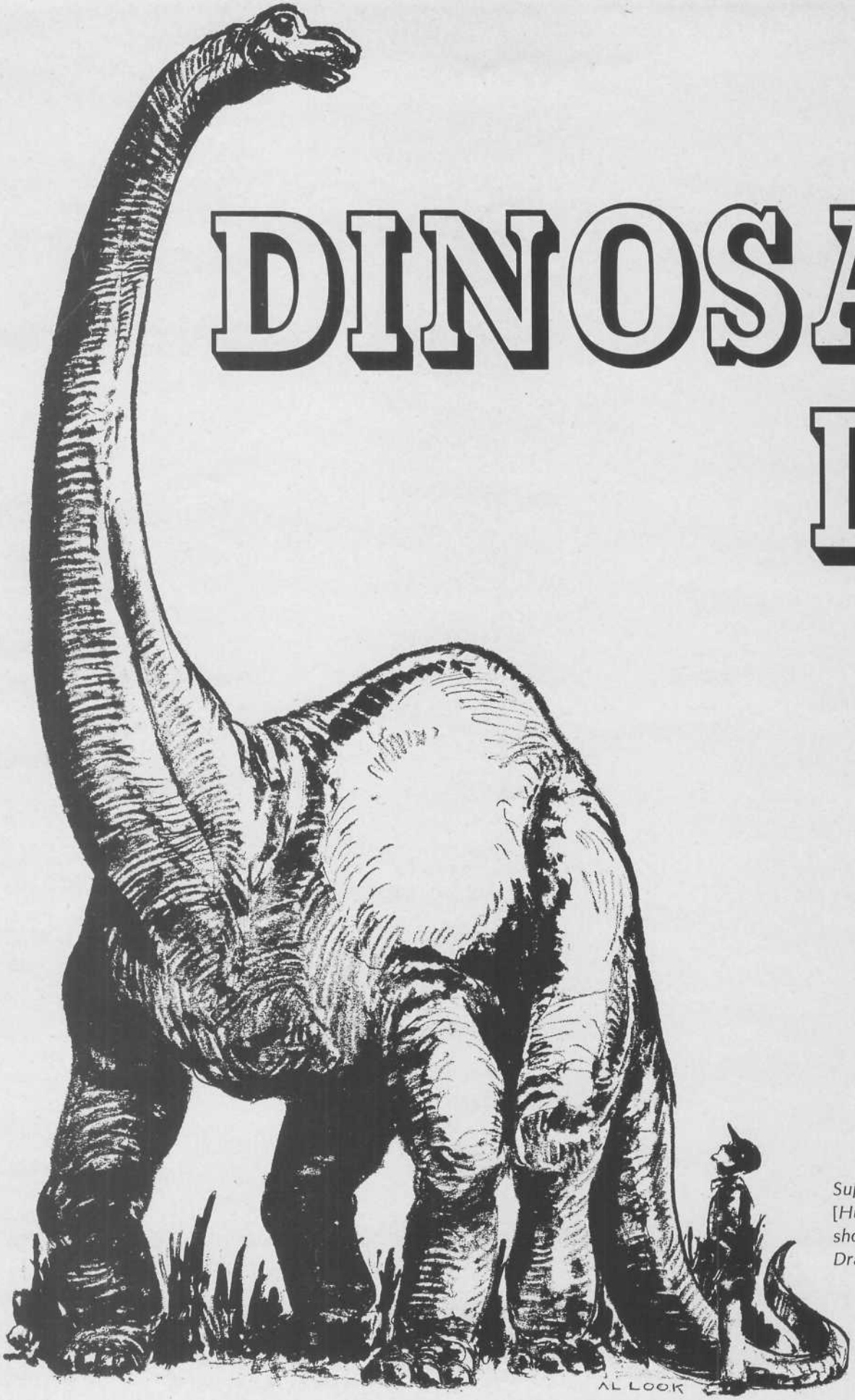


The quiet oasis in Joshua Tree National Monument. Photo by Craig Fucile, Downey, California.

A fraction of a mile southwest of the grove is Single Palm Spring, elevation 3550 feet. Although only one Washingtonia grows here, it probably has the distinction of being the highest native palm in the California deserts. Dos Palmas in the Santa Rosas is generally considered the loftiest outpost, but in reality it stands over 30 feet lower at an elevation of slightly under 3520 feet.

From Fortynine Palms we'll be journeying northeastward into the deep desert. Our goal will be little-known Mopah Spring, remote oasis of the southern Mojave. □

DINOSAU
IN



Supersaurus jenseni.
[Human figure shown to scale.]
Drawing by Al Look.

R HUNTING COLORADO

by AL LOOK

DINOSAURS COME big in Western Colorado! During 75 years of search, three monsters have been dug from antediluvian graves in the area between Grand Junction and Delta.

On July 4th, 1900, Dr. Elmer Riggs, of the Field Museum in Chicago, unearthed a petrified dinosaur bone six feet, eight inches long, and some 150 million years old. A half-century later, two rockhounds, Vivian and Eddie Jones, of Delta, Utah, discovered a leg bone seven feet long. Then, in 1972, James Jensen, paleontologist of Brigham Young University, led by the Jones', found evidence of a monster bigger than the previous two.

"Dinosaur" Jim Jensen's find is the leviathan of the animal world. He does not have a complete skeleton yet, but he is still digging in hopes of uncovering more bones. But let us go back to 1900 and find out how it all started.

Dr. Riggs was excavating near the bottom of the old "Trail of the Serpent," a Mosasaur which was a sea-going dinosaur capable of swallowing a six-foot fish whole. (There is one mounted in the Denver Museum.) Riggs' companion, it being the Fourth of July, decided to go on a paleontologist's holiday and tramp around hunting for more petrified bones. "He came back with the biggest thing yet," wrote Riggs. "He had found the largest known dinosaur in what is now known as "Riggs Hill," near Grand Junction. A plaque commemorating the find now marks the spot.

Digging in, they uncovered the large femur (upper back leg), weighing 540 pounds, and a column of vertebrae, some as big as beer kegs. Attached were ribs eight inches wide and nine feet long. By comparing the bones with a mounted, but smaller, skeleton of the same species later found in Africa and mounted in Berlin, it was deduced that the Riggs Brachiosaurus's head was elevated 50 feet into the then tropical Colorado sky.

Riggs dug out 20 bones which was enough to identify the animal, but not enough to mount. However, there was enough to classify it as a type find, which means that it was the first to be identified and establish a new species. It was also the first indication of any animal of that much bulk had ever walked over the earth's surface. Scientists were amazed that an animal of that size could get on its feet, let alone eat enough hay and foliage in a day to survive.

When he did not find the other bones, he concluded what happened those many millions of years ago. The animal's body was caught in a freshet and washed down stream, came apart, and many of the bones were scattered and caught farther down.

Fifty-five years later, two Delta rock hunters, Vivian and Eddie Jones, were poking around hunting uranium near the rim of Roubideau Canyon and found a bone plug sticking out of a hill. It was a humerus, seven feet long. They also found a vertebra some 20 times larger than a bread box. Because of their size, Dr. Barnum Brown, a dinosaur expert from the American Museum in New York, identified it as another towering beast like Dr. Riggs had found. A few large museums were contacted concerning this bone, only one responded and remarked they were not interested in any more "corn cribs.

The Jones' discovery finally wound up in the Smithsonian Institute who wanted the leg bone, but showed no interest in finding the rest of the animal. There is a cast of that bone in the Grand Junction museum, and also a cast in the visitor's center on the Colorado National Monument.

At the time when the Brachiosaurus and other dinosaurs lived in Colorado, there were no Rocky Mountains. It was

hot and tropical with abundant rainfall, slimy mud and stagnant pools formed from sluggish rivers flowing through succulent vegetation containing palm trees, pineapple-like cicads, yew trees, ferns and horsetail reeds. Crocodiles slithered through the swamps and the atmosphere was clouded with flying insects. None of the hardwoods or flowering plants had appeared yet.

There were no birds, only flying reptiles with feathered tails. The seas contained hugh swimming reptilian monsters that preyed on fish like sharks. The great number of fossils found in this layer of the earth's crust indicates a heavy dinosaur population. Under their feet, tiny fur-covered mammals darted through the reeds. They were to survive to populate the world when the dinosaurs could not cope with the changing climate several millions of years later.

James Jensen saw the bone, in the Smithsonian, and eventually went back to Delta, and Eddie and Vivian Jones took him out to the site of their find. Jensen, unlike the unconcerned paleontologists, was looking for a dinosaur "corn crib," the bigger the better. He instantly became interested. Then they walked to where the Jones' had picked up an enormous toe bone (phalanx) bigger than a dog's head, on the rim of Escalante Canyon, and Jensen became excited. Exploring around the area, he located what is best described as a dinosaur bone pile, and once again found tons of evidence of the petrified remains of "the largest animal to walk on the face of the earth."

The mass of bones were on a flood plain and washed down stream where they were trapped on a sand bar or mud flat. This quarry apparently follows an ancient stream bed buried under a 30-foot cliff rather than crossing it. To petrify, bones must be deposited under water. Any cattleman will tell you when a critter dies the bones crumble and completely disintegrate on dry land. Dozens of carcasses floated down this antediluvian river, breaking apart and became entangled in a bone jam. During the millions of years each bone cell was replaced by minerals deposited by precipitating water.

On rare occasions an ancient skeleton is found articulated. The Jones' found one with each bone in place on the rim of

Little Dominquez Canyon, a Camarasaurus, also excavated by Jim Jensen. Some 75 million years ago these bones were covered by over a mile of earth. They were then raised during the famous Uncompaghre Uplift when the Rocky Mountains were formed. The mile-thick overburden was eroded away and that big toe bone came out to await discovery by the Jones'

There is not the slightest doubt that this bone hole, 300 feet long on the rim of Escalante Canyon, some 35 miles of winding road from Delta, and first dug in 1972, is one of the biggest, most important and significant dinosaur graveyards ever found. Dinosaur Jim Jensen has uncovered seven new species of four-footed dinosaurs, and three specimens of meat-eaters not previously known. Included is a behemoth whose petrified bones are weighed in tons and measured in feet. It is bigger than the other two found earlier by Riggs and the Jones'. For the time being, Jensen is calling it "Supersaurus jenseni." Its scapula (shoulder blade) is eight feet long.

The size of this deposit indicates many years, if not a lifetime, of hard work, in the dry hot sun, with an atmosphere full of gnats and dust. You don't pick up these bones and put them in your pack sack. The bones are fragile, not well preserved, and must be shellacked when exposed by small picks and brushes. Then they are encased in burlap, saturated with plaster which, by the way, is the same method used by Dr. Riggs in 1900. Then they are lifted by a power crane into a truck. The site of a mass of individual bones which represents a great variety of reptiles, including crocodiles and turtles, and a flying reptile (pterosaurs) with feathers on its tail, but not a bird.

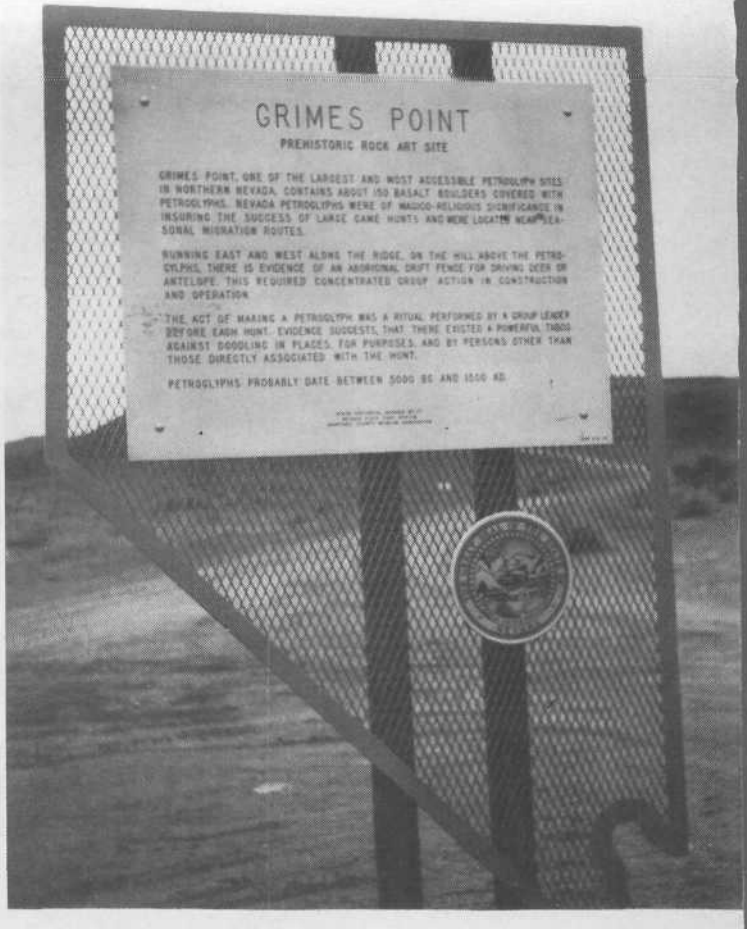
The formation is locally known as the Morrison section of the Jurassic era and in hard shale some 150 million years old. Because each bone is put in plaster when taken out, there is little opportunity to compare them one with another. That comes later in the laboratory. But it is a good guess that the big animal looked something like a cousin to the Brachiosaurus found in 1900. It will take a few years of patient laboratory study to actually determine its nature. Its size is perhaps correctly determined by comparing it with the animal skeleton in the Berlin museum.

The brain of Supersaurus was thought to be as small as a baseball which might seem inadequate to control such a huge hunk of flesh. No doubt he was a gentle, slow moving monstrosity, not mad at any one. About all the animal did was to eat when hungry, which must have been around the clock, and sleep a bit when tired. Because of its small mouth, and because it also could not move its jaws sideways to chew, it must have swallowed stones to grind the hay in its gizzard.

This description of Supersaurus is arrived at by also comparing it with the Berlin skeleton and assuming the two animals were similar. Super must have weighed 80 tons at least which is pushing the largest whales who float in the water. No doubt Supersaurus waded into the swamps and lakes which took the weight off his feet, and with its head on a long neck it could eat plenty of the jungle salad that was floating around, without moving its body much.

As among dinosaurs all over the world, the colossal Supersaurus was not able to survive when the tropical climate faded out and a colder climate and harder foods were developed. Paleontologists are not in agreement on what happened to make the dinosaurs vanish within a short million years or so. One plausible theory is that they had specialized beyond the point of no return. One thing is certain: something catastrophic happened and the dominating animals of the world disappeared, with the present-day fur-covered mammals taking over.

Digging dinosaur bones is expensive and these bones are bigger than most museums want, or have room to store. After digging for three years, and spending many thousands of dollars, Jensen has excavated around 18 tons of old bones. But Dinosaur Jim isn't through digging and it could be that this quarry will become his life's work. How far the 300-foot bone pile continued under the hill, and what is yet to be found, no one knows. Then there is always the possibility this monster's body parted as it floated down stream and that the parts are scattered elsewhere. This is what happened to the Riggs animal. But it is hoped by paleontologists that Jim Jensen will be able to raise more money to pursue his quarry back into the rock and eventually come up with a complete Supersaurus. □



Grimes Point Historical Marker is self explanatory. A road east from this point leads to an excellent wonderstone collecting location.

TRAILING THE PONY

Continued from Page 11

For the next dozen miles, the highway slowly climbs New Pass and Mt. Airy summits. Stop #11 is the ruins of the New Pass Overland Mail Station. Nestled in a picturesque canyon, New Pass was a team-changing station. A support ranch was established one mile north which provided necessary water, pasture and rest for the hard-working horses.

Another dozen miles east brings us to the last stop (#12) on our tour. Little evidence remains of the original Pony Express Station on the banks of the Reese River.

First established in 1859, Jacob's Station rose to prominence following the discovery of rich silver ores in 1862. Wm. M. Talcott, former Pony Express rider turned station keeper, was cutting wood in Pony Canyon when he noticed some interesting quartz outcrops. Talcott sent samples for assay to Virginia City and the rush to the Reese River District was on! Lander County was formed the same year and, after Jacob's Station was renamed "Jacobsville," it became the county seat.

The little community's close proximity to the more-than-a-mile-high mines gave impetus to its growth. By the end of the year, it sported a new courthouse, post office, telegraph office, several stores, regular stage line, two hotels, saloons and a population of around 400. Of more importance to the miners was the fact that Jacobsville was the only source of whiskey in the entire region.

The strike that gave rise to Jacobsville was also its undoing. By 1863, over 10,000 people were in the camps of the new silver strike and on February 17, 1864, the communities of Clifton, Austin and Upper Austin were incorporated as the City of Austin. Jacobsville began to wither when its post office was closed and the county seat moved to Austin.

No doubt many of the men who rode the "Pony" between Jacob's Station and Simpson Park wished they had paid more attention to the rocks in Pony Canyon. They had given the canyon its name since they often used this shorter route via what is now Austin instead of the regular pass. Unknowingly, a fortune in silver had lain beneath the pounding hooves of their horses!

The memory of the Pony Express lives on in Nevada where segments of its route and ruins remain for us to visit. In our recreational vehicles, we can vicariously relive some of the dangers and the triumphs. To the brave men who blazed their way to glory, we pay homage as we enjoy "Trailing the Pony in Nevada." □

LONESOME TRIANGLE

Continued from Page 23

north of present-day Needles, westerly to a junction with the military trail to Ft. Tejon. This old supply center, along the modern Ridge Route south of Bakersfield, is still standing as a living museum.

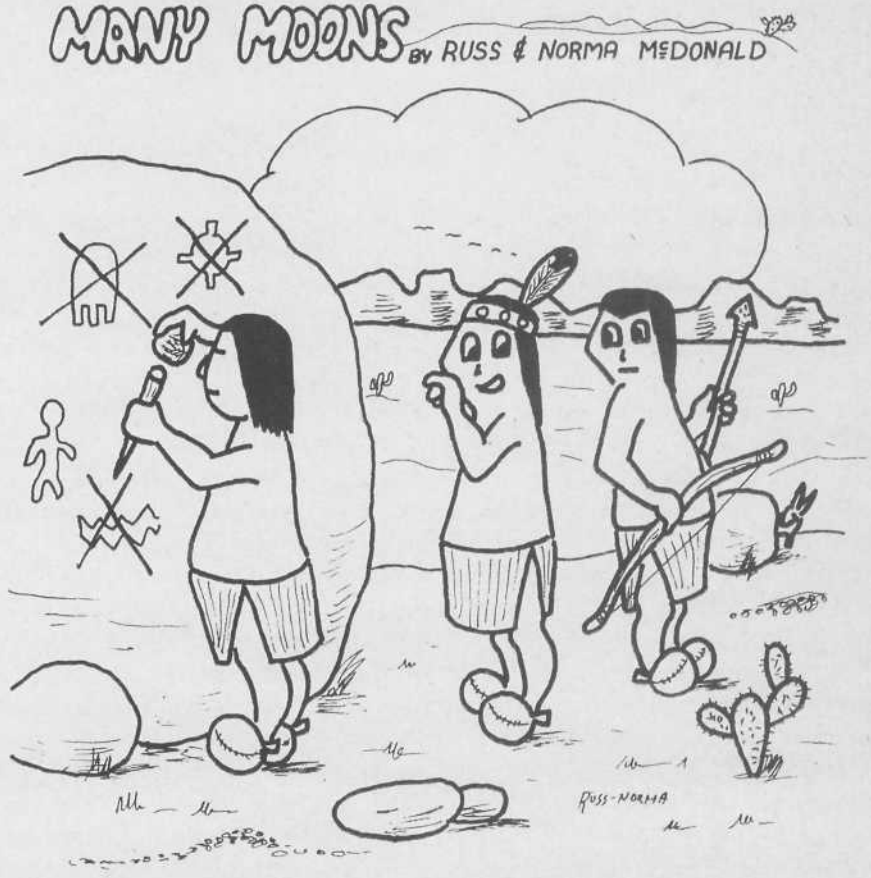
Today's travelers in the Eastern Mojave Unit, a BLM term for the Lonesome Triangle, have to plan ahead regarding fuel. There is a supply at the friendly Cima store, 20 miles northeast of Kelso, but the storekeeper has limited storage and tries to keep gas for local ranchers and miners, so don't count on a full tank. Better, 16 miles north of Cima is Valley Wells, on I-15, or try Baker, just 35 miles northwest of Kelso. Both feature 24-hour service, or did last spring.

Back on the freeway heading west, you may want to visit historic Soda Lake, another Government Road overnight stop. It was known as Zzyzx Springs under tutelage of Curtis Howe Springer, a noted radio evangelist. This tree-shaded spa has been classified as a desert research center in an agreement between BLM and several Southern California state colleges and universities.

The off-ramp on I-15 five miles west of Baker still proclaims it Zzyzx, because the road bears that official designation but Soda Lake is again the name for Springer's establishment. A graded road reaches the buildings 4½ miles south of the freeway but tracks luring the unwary across the lake on the Government Road east may be a mud trap, even for four-wheel-drive. Another trail heading southwest along the Government Road alignment tends to be sandy and frequently impassable near Rasor Ranch, four miles further south.

At Rasor, the Government Road bisects another historic, later-vintage route, the Tonopah & Tidewater Railroad, abandoned since 1941. Most drivers will head back to the freeway here, along Rasor Road which joins I-15 at the Beacon station ramp, six miles west of the Zzyzx exit.

From here it's an easy four-hour run back to the metropolitan area, even at 55. This is a marked contrast to the days and days on the way westerly on the old Government Road. It's a welcome change. □



Clown of The Desert

by KATHERINE SHEEHEY

Photos by Lee Coe.

A SPEEDY BIRD with a long tail skitters across the hot desert floor, chasing everything, invoking laughter or cries of "Beep Beep" from all who manage to catch sight of this fleeting feathered flash.

The Roadrunner is in a class by itself. If you could get up close to one, which isn't easy, you would see that he is rather shabby-looking, streaked with brown and white, and has long tail-feathers. Overall, he is about 15 inches long and has a shaggy top-knot. There is a yellow ring around his eyes, and a blue color shows through between the brown and white stripes of his feathers. He has a fairly long beak, slightly curved.

Most sensible birds enjoy the South for the winter, and migrate to the North where it is cooler for the summer, but not the Roadrunner. He lives the *year around* in the deserts of the Southwest United States, mainly Arizona, New Mexico and parts of Texas and California.

Most sensible birds fly a lot. The Roadrunner does more sprinting along the desert floor than flying. About the only time he flies is when he is frightened or when he is headed down hill.

Actually, he belongs to the cuckoo family and has another name, chaparral cock. a Roadrunner not only stays all year in the same part of the country, he sticks to the same neighborhood. He has a regular beat that he patrols every day, looking for food, lots and lots of food. He is in a big hurry about it, too, and will eat almost anything he can swallow, sometimes, unfortunately, even baby birds of another species. He will eat insects that ranchers want to be rid of — beetles, crickets, caterpillars, centipedes, grasshoppers. Also lizards, mice and snakes, of all things.

Darting around the snake like a flamenco dancer, leaping at it, dive-bombing, the Roadrunner may take several hours to kill the snake. Then, if the victim is not too long, not much larger than the bird, you may see the Roadrunner going around almost all day with part of the snake hanging out of his mouth. He will start to swallow the snake, head first, and then swallows a little bit of it a a time as the lower end digests away.

This is a part of the chain of life on the desert. The chain begins with plants

such as Schismus barbatus grass which makes its food from sunlight, air and water. Small animals and insects like the cricket eat plant food, and in turn *they* are eaten by larger animals such as the desert spiny lizard. Along comes a snake and eats the lizard. A hungry Roadrunner hunts down the snake and eats *it*. The final link in the food chain comes when a large animal like the ringtail cat may eat the Roadrunner.

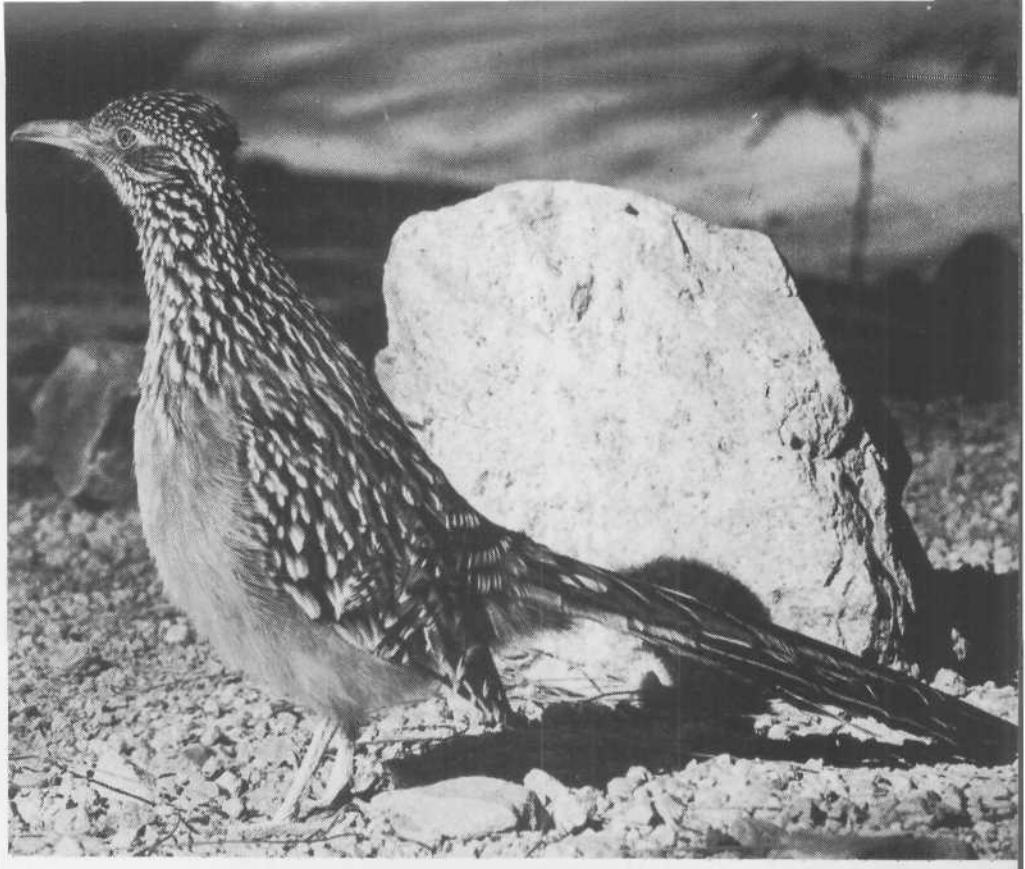
The Roadrunner is a great show-off. He *is* sensational when he goes into action, and he knows it. With his long tail extended behind him, his head down and his ragged crest erect, the Roadrunner skims over the ground at speeds up to 15 miles per hour. He will race anything or anybody willing to run, even a VW.

Sometimes a Roadrunner will stop to look at *you*. First, he may hop up on a large rock or a fence post for safety. He will jerk and switch his tail and quiver all over. The crest on his head will seem to stand up on end. You may be able to see bare white skin and a little bit of bright red showing through back of his eyes. He will probably glare balefully at you for just a moment, then open his wings and bounce along the road, half-running, half-flying, on that all-important business of his own. A real clown of the desert.

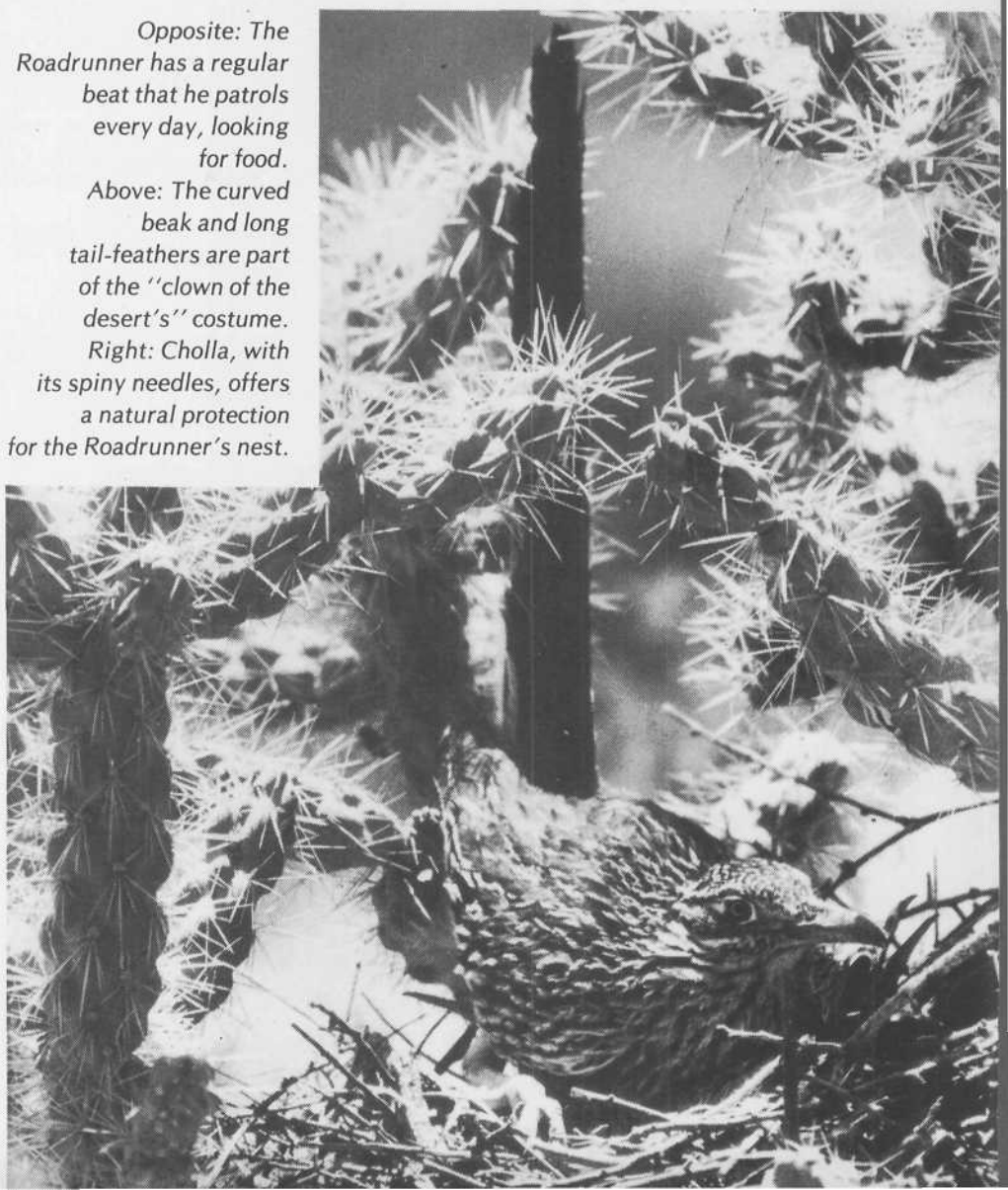
Roadrunners have a strange way of building their nests. They just throw together a lot of twigs and trash, on the ground under low brush, or in thorny bushes. Desert cactus, with its spiny needles, offers a natural protection for the nest. They build it swiftly, as if in anticipation of the blazing hot weather that comes so quickly on the desert after the cool spring. Roadrunners will line the nest with snakeskin or anything else soft they can find.

Unlike other species of birds, Roadrunners may have eggs in the same nest hatching out at completely different times. For that reason, you often find both eggs and baby birds in the same nest. The parents take turns minding the nest. One parent sits on the nest watching out for danger while the other scampers around on a scavenger hunt for food to feed the growing family.

The Roadrunner was often affectionately called "paisano" or fellow countryman by the old-timers. All in all, he is a most remarkable bird, comical, friend of the ranchers and fiercely independent. □



Opposite: The Roadrunner has a regular beat that he patrols every day, looking for food. Above: The curved beak and long tail-feathers are part of the "clown of the desert's" costume. Right: Cholla, with its spiny needles, offers a natural protection for the Roadrunner's nest.



The Trading Post

• BOOKS-MAGAZINES

FOR SALE: 62 copies of Desert Magazine, 1938 to 1948. $1.00 each plus postage. 397-4226. 84-700 Ave. 65, Thermal, California 92274.

"SURVIVAL/GUERRILLA WARFARE" Training Books and Manuals. "Survival" Freeze Dried Storage Foods. Catalog 50c. Ken Hale, (C-50), McDonald, Ohio 44437.

DEAR DAUGHTER contains over 350 favorite time tested recipes of five generations. A complete cookbook for $2.00. Booksmith, Box 7425, Tucson, Arizona 85725.

ORDER TODAY: WOODSTOVE COOKBOOK. Dry berries, fruits, vegetables, herbs, roots. Make venison, moose, beef jerky. Pemmican, sausage, smoked meats. Also over 125 delicious recipes: casseroles, candy, breads, desserts, meats, veg. Only $2.50. E.M.C. Publications, P* O. Box 324, Simpsonville, MD 21150.

TALES OF THE MOJAVE ROAD. Carefully researched stories about the Old Government Road and the Mojave Desert by Dennis G. Casebier. Six titles available now. More in the future. Send for list. Tales of the Mojave Road, Box 307, Norco, Calif. 91760.

GOLD PROSPECTORS NEWS (magazine). Join the fun for profit. Send for free copy. G.P.N., P.O. Box 507, Bonsall, California 92033. Include 25c postage.

• DESERT STATIONERY

MOCKEL'S DESERT wildflower notes 25 assorted, $4.50, Mockel's Desert Flower Notebook, soft cover, 165 illustrations, 2 indexes, $6.95, Postpaid. Henry R. Mockel, Box 726, Twentynine Palms, California 92277.

• EQUIPMENT

PRECISION LAPIDARY Abrasive Compounds for tumbling, polishing and grinding. Send for free catalogue and price list. MDC Industries, 400 West Glenwood Avenue, Philadelphia, PA. 19140. Dealer Inquiries invited.

• GEMS

SHAMROCK ROCK SHOP, 593 West La Cadena Dr., Riverside, California 92501. Parallel to Riverside Freeway. Phone 686-3956. Come in and browse; jewelry mountings, chains, supplies, minerals, slabs, rough material, equipment, black lights, metal detectors, maps, rock and bottle books.

HOW TO PLACE YOUR AD

Mail your copy and first-insertion remittance to: Trading Post, Desert Magazine, Palm Desert, Calif. 92260. Classified rates are 25c per word, $5.00 minimum per insertion.

Deadline for Classified Ads is 10th of second month preceding cover date.

• MAPS

TIRED OF the same old place every weekend? The Map can lead you over thousands of miles of Nevada's back roads to ghost towns, old mines, abandoned forts, and adventure. By county: Clark, Elko, Eureka, Humboldt, Lander, Lincoln, Pershing, Washoe-Storey, White Pine, $3 each. Set $25. The Map, Box 801C, Elko, Nevada 89801.

OLD STATE, RAILROAD, COUNTY MAPS. 70 - 110 years old. All States. Stamp for catalog. Northern Map, Dept. DM, Eagle River, Wisc. 54521.

• MINING

ASSAYS—Gold & Silver $9.00. High quality spectrographic analysis for 65 metals $6.00. Free price list. Reed Engineering, 2166 College Avenue, Costa Mesa, California 92627.

• OLD COINS, STAMPS

OLD U.S. Silver and Gold coins from a 47 year hoard. Many interesting and rare pieces dating from 1809-1964, some in original mint condition. Order by mail and save. List 50c. Bodie, Box 428, Ridgecrest, California 93555.

COLLECT COINS! How to collect coins for investment and profit! One roll of 1926s buffalo nickels are now worth $13,000.00! Where to buy and sell coins. How to find fortunes in buried treasure! How to become a franchised coin dealer. Why coins are a better investment than stocks and bonds! How to get started. This booklet is worth its weight in gold—coins, of course! Booklet #MO-53C. Send only $2.00 to: Eastern Enterprise, Brandywine Bldg. #11, Turnersville, New Jersey 08012.

• PROSPECTING

BEAUTIFUL CALIFORNIA Feather River gold nuggets. Among the world's finest grade. $3.00 to $700.00 sizes. Send for price list. Prospector Jack Ward, Box 380, Sandia Park, New Mexico 87047.

DRYWASHERS! GOLD CONCENTRATORS! Guaranteed to recover minerals, gold. A hobby that pays for itself! Write to: Nick's Nugget, P. O. Box 1081, Fontana, Calif. 92335. (714) 822-2846.

BEAUTIFUL ODD-SHAPED Natural gold just like it came from the earth $2.00. Gold panning packet with instructions $2.00. Prospector Jack Ward, Box 380, Sandia Park, New Mexico 87047.

RARE EARTH METALS. Rockhounds. Explore the exciting new field of Rare Earth Elements. Find out what they are, where they are found, why they are valuable and how they are identified. $2. Tomar Research, Dept. DM8, Box 531, Montrose, California 91020.

• PROSPECTING

DRYWASHER: MIGHTY MIDAS Gold Concentrator. Excellent recovery. Good condition. $300.00. (714) 852-4471. Box 91, Shoshone, California 92384.

• REAL ESTATE

160 ACRES Imperial County desert, mineral rights included. Ogilby, California. Private party. Marvin Hughes, 15111 Pipeline, #121, Chino, California 91710.

MAILED FREE—Descriptive foto brochure of Hi-Desert parcels. Send name, address to: Breck Nott Realty, P. O. Box 487 (61807 29 Palms Highway), Joshua Tree, Calif. 92252, or phone 714-366-8461.

FOR RENT—Twenty acre property near Silver Peak, Nevada. Excellent campsite or place to park recreational vehicle. High desert. No improvements or neighbors. Only $30.00 per month. Write for free details. Charles Bennett, P. O. Box 1722, San Pedro, California 90733.

• SEEDS & PLANTS

EPIPHYLLUM HYBRIDS—epiphytes—Orchid Cactus. Out of State deliveries April through October. Three rooted cuttings $5.00 postpaid. All different. Allow 4-6 weeks delivery. Catalog, 35c. Beahm Epiphyllum Gardens, Dept. DM 1, 2686 Paloma St., Pasadena, California 91107.

GROW "THE $1,000 Ivy Geranium" from prize winner. New. Extra hardy. Giant flowers. Three Cuttings $1.00. Larson, P. O. Box 482, Anaheim, California 92805.

• TREASURE FINDERS

BURIED TREASURE — Locate up to quarter mile away with ultra-sensitive Directional Locator. Send for free, informative phamplet. Research Products, Box 13441-BUC, Tampa, Florida 33611.

WILL YOU GAMBLE $4.00 to save $200? Build one of several detectors from our 20-page book "Build Transistor Treasure Detectors." Easily followed instructions, $4.00. Trionics, Box 164D, Brewer, Maine 04412.

INSTANT RICHES—Explore ghost towns. Find buried treasure, coins, relics, antiques, and more. Goldak—the finest "Metal and Treasure Locators since 1933." Send for free catalog. Goldak, Dept. D, 727 S. Main St., Burbank, California 91506.

FINDS GOLD. The Genco gold detector can indicate on a single speck of gold smaller than a pinhead. Free details. Polyscience Co., 2166-A College Avenue, Costa Mesa, California 92627.

• MISCELLANEOUS

RAILROAD EMBLEM T-Shirts, 195 Different Authentic Designs—Past/Present. Send choice, size, $6.00 each to: Hobo Co., Box 2492-D, Santa Barbara, Calif. 93120. Catalog 35c.

WANTED: OLD RUSTY Dug-up Handguns, Rifles and Military Relics in uncleaned condition. John Kopec, Box 218, La Puente, CA 91747

CHEMEHUEVI, APACHE, YOKUT baskets for sale. Please phone for appointment. 714-245-6120.

$10 WRITING SHORT ARTICLES at home. Begin immediately. Copywrited report reveals How & Where. $1.50. D. Evans, Rt 1-522, Liberty, Mo. 64068.

RESUMES: Just might get that job you wanted. Learn how to make a professional resume. Order Now! Instructions and forms only $1.50. Send to Bob Reynolds Enterprises, 4991 Hornet Drive, Prescott, Arizona 86301.

CERAMIC REPLICA—Hand Painted Early West high-laced ladies shoe. Lifesized, 10" tall, black or gold antique. Excellent as vase or collectors item. $14.95 each, plus $1.50 shipping fee withing the U.S.A. Carma's Ceramics, P.O. Box 169, Tonopah, Nevada 89049.

YOU'RE OVERPAYING. You can buy for 10% of retail. Learn where, how. Closeouts, A Course and Source Book. $5.95. Salts, 2370 East 16th, Brooklyn, N.Y. 11229.

MAPS! MAPS!

ANZA-BORREGO DESERT STATE PARK TOPOGRAPHIC MAPS
A set of 7 maps covering the Anza-Borrego Desert State Park, 8½"x11" format, spiral bound. **$5.50**

JOSHUA TREE NATIONAL MONUMENT UPDATED TOPOGRAPHIC MAPS
A set of 12 maps covering the Joshua Tree National Monument, 8½"x11" format, spiral bound. **$7.95**

ROADMAP TO CALIFORNIA'S PIONEER TOWNS, GHOST TOWNS AND MINING CAMPS
Compiled by Varna Enterprises. 38"x25" and scaled. Southern California on one side and Northern California on the other. Contains detailed location of place names, many of which are not on regular maps. **$3.50**

MAP OF PIONEER TRAILS
Compiled by Varna Enterprises, this is their new large map on pioneer trails blazed from 1541 through 1867 in the western United States. Superimposed in red on black and white, 37"x45" **$4.00**

ROADMAP TO CALIFORNIA'S LOST MINES AND BURIED TREASURES
Compiled by Varna Enterprises, 38"x25" and scaled Southern California on one side and Northern California on the other. **$4.00**

Please add 50c for Postage/handling
Calif. residents add 6% state sales tax

Order from

Desert Magazine Book Shop

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

WORTH SAVING!

$4.50 EACH

Including tax and postage

Gold embossed on brown vinyl. Space for 12 magazines easily inserted. A beautiful and practical addition to your home bookshelf.

MOST OF OUR READERS SAVE THEIR DESERT MAGAZINES FOR FUTURE REFERENCE AND READING PLEASURE. THE BEST WAY TO KEEP YOUR BACK ISSUES IS IN OUR ATTRACTIVE SPECIALLY-MADE

BINDERS

DESERT MAGAZINE

P. O. BOX 1318, PALM DESERT, CALIFORNIA 92260

REPLACEABLE SUBSCRIPTION FORM **August 1977**

Desert

☐ **Check here if you wish this issue replaced.**

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

☐ ENTER A NEW SUBSCRIPTION ☐ RENEW MY PRESENT SUBSCRIPTION

NAME _____

ADDRESS _____

_____ ZIP CODE _____

☐ SEND GIFT SUBSCRIPTION TO:

NAME _____

ADDRESS _____

_____

Sign Gift Card: "From _____

NAME _____

ADDRESS _____

_____

Sign Gift Card: "From _____

One Year $7.00

Two Years 13.00
(Or 2 One Years)

Three Years 19.00
(Or Three One Years)

Foreign subscribers add $2.00/year postage.

☐ PAYMENT ENCLOSED ☐ BILL ME LATER

☐ ALSO SEND DESERT'S 12-ISSUE HANDSOME BROWN VINYL BINDER FOR $4.50 (Includes tax and postage)

Date Binder(s) with Year(s) ☐ Undated

Send orders to
Box 1318
Palm Desert, California 92260

BOOKS OF

COLORADO RIVER GHOST TOWNS by Stanley W. Paher. The skeletal remains of abandoned mines and towns in the Cerbat mountains and other barren rnages in western Arizona along the Colorado River are visited by the author. Two editions available: the standard edition is a large format, paperback, lavishly illustrated with rare old photos, $2.95; the second edition available is identical with the exception of an inset of 15 beautiful four-color reproductions of etchings by noted Roy Purcell. This edition sells for $4.95. Please state which edition when ordering.

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.

ISHI In Two Worlds by Theodora Kroeber. Ishi was perhaps the most remarkable personality of his century. A Yahi Indian, and lone survivor of a doomed tribe, he was found in the corral of a slaughter house near Oroville, Calif. For the rest of his life Ishi lived under the care and protection of the staff of the University of California's Museum of Anthropology. An incredibly sad but beautifully told story. Hardcover, many excellent photos, both color and black and white, 262 pages, $14.95.

FLOWERS OF THE CANYON COUNTRY by Stanley L. Welsh, text; and Bill Ratcliffe, photographs. Two professionals have united their talents to present an informative, scholarly and artistic promotion of the beauty found in flowers and plants of vast regions of the Southwest. Paperback, 51 pages, beautifully illustrated, $3.95.

GOLD RUSH COUNTRY by the Editors of Sunset Books. A revised and up-dated practical guide to California's Mother Lode country. Divided into geographical areas for easy weekend trips, the 8x11 heavy paperback new edition is profusely illustrated with photos and maps. Special features and anecdotes of historical and present day activities. Four-color cover, 96 pages. $2.95.

THE COMPLEAT NEVADA TRAVELER by David W. Toll. An excellent guidebook listing towns of interest, campgrounds, ghost towns, state parks and recreational areas, ski areas and general items of interest. This book will appeal to the weekend traveler and vacationing families alike. Well illustrated, excellent index, 278 pages, $3.50.

GHOST TOWNS OF THE COLORADO ROCKIES by Robert L. Brown. Written by the author of "Jeep Trails to Colorado Ghost Towns," this book deals with ghost towns accessible by passenger car. Gives directions and maps for finding towns along with historical backgrounds. Hardcover, 401 pages, $7.95.

CALIFORNIA DESERT WILDFLOWERS by Philip A. Munz. Illustrated with both line drawings and beautiful color photos, and descriptive text by one of the desert's finest botanists. Paperback, $3.95.

THE AMERICAN WEST, A Natural History by Ann and Myron Sutton. A first-hand information-packed description of the plant and animal life and geological evolution of the 15 major natural areas of America's West, illustrated with magnificent photos (71 in color) and maps, makes it clear just why the forests, animals, flowers, rivers, deserts and caves of the Land of the Big Sky are exactly as they are. Large 10''x12½'' format, hardcover, 272 pages, originally published at $25.00, now only $12.98.

TEMALPAKH by Lowell John Bean and Katherine Siva Saubel. Temalpakh means "from the earth," in Cahuilla, and covers the many uses of plants used for food, medicine, rituals and those used in the manufacturing of baskets, sandals, hunting tools; and plants used for dwellings. Makes for a better understanding of environmental and cultural relationships. Well illustrated, 225 pages, hardcover, $10.00; paperback, $6.50.

DESERT JOURNAL, A Naturalist Reflects on Arid California by Raymond B. Cowles in collaboration with Elna S. Bakker. This book is filled with the observations that made Cowles a top scientist and reveal the life-long curiosity that typifies the dedicated desert researcher. It will provide the occasional desert dweller as well as the year-arounder with answers to many of the little questions you have been reluctant to ask. Hardcover, well-illustrated, 263 pages, $10.95.

HOW TO TUMBLE POLISH GEMSTONES AND MAKE TUMBLED GEM JEWELRY by Jerome Wexler. The author gives full details on how he does his work. By following his instructions, you too can turn rough rock into fascinating gems and make jewelry of which you will be proud. Paperback, $2.25.

RAILROADS OF NEVADA AND EASTERN CALIFORNIA VOL. I by David F. Myrick. The poignant record of over 43 railroads of Northern Nevada, many of them never before chronicled. Fantastic reproduction of rare photographs and maps (over 500). A deluxe presentation. Large format, hardcover, $15.00.

RAILROADS OF NEVADA AND EASTERN CALIFORNIA VOL. II by David F. Myrick. Just as Vol. I detailed the history of the Northern Roads, Vol. II expands the railroad history of the Southern Roads of Nevada. This volume also contains a useful Index to both volumes, and is a reliable and accurate travel guide today as the reader wanders among the ghost towns of the past. Lavishly illustrated with maps and old photos, large format, hardcover, $15.00.

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.

GEMSTONE AND MINERAL DATA BOOK by John Sinkankas. This book is a compilation of data, recipes, formulas and instructions designed specifically for use by mineralogists, gemologists, jewelers and lapidaries. While most of the information is derived from the sources referenced throughout the text, much is original, relecting the personal experiences of the author in testing materials and techniques used in lapidary and mineralogical work. Paperback, $4.95.

DEAD MEN DO TELL TALES by Lake Erie Schaefer. A sequel to BURIED TREASURE & LOST MINES by Frank Fish, the author knew Fish for many years and claims he was murdered. Her book adds other information on alleged lost bonanzas, plus reasons why she thinks Fish did not die a natural death as stated by the authorities. Paperback, illus., 80 pages, $3.00.

ENCOUNTER WITH AN ANGRY GOD by Carobeth Laird. A fascinating true story of the author's marriages to anthropologist John Peabody Harrington, the "angry god," and to the remarkable Chemehuevi Indian, George Laird. The appeal of this amazing memoir is so broad it has drawn rave reviews throughout the country and is being hailed as a classic. Hardcover, 230 pages, $8.95.

BIRDS OF WESTERN NORTH AMERICA, Paintings by Kenneth L. Carlson, Text by Laurence C. Binford. Great care has been taken in reproducing Kenneth L. Carlson's 50 paintings in their true-to-nature colors, and the portraits are as accurate in detail as they are aesthetically pleasing. Text is informative, but not overly technical, and data are included on size, range, habitat, diet, nest, eggs and familial relationships. An unusually beautiful book, and highly recommended. Hardcover, large format, $25.00.

THE CHEMEHUEVIS by Carobeth Laird. A superb enthnography destined to become a classic in anthropology, by the author of **Encounter With An Angry God**. Based on information provided by the author's husband, George, a Chemehuevi tribesman, the work is a delight to both scholars and general readers. With glossary, maps, index, place-name index and appendices on language and cartography. Beautifully decorated, 349 pages. Paperback, $8.95, hardcover, $15.00.

APACHE GOLD AND YAQUI SILVER by J. Frank Dobie. Author Dobie, a fabulous storyteller, includes a detailed examination of the Lost Adams Diggings and the Lost Tayopa Mine, as well as other exciting accounts of various lost mines. Paperback, 366 pages, $4.95.

THE GHOST TOWN OF BODIE, A California State Park, As Reported in the Newspapers of the Day, by Russ and Anne Johnson. Interesting facts on the ghost town of Bodie and profusely illustrated with photos. Paperback, 124 pages, $2.25.

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.

JEEP TRAILS TO COLORADO GHOST TOWNS by Robert L. Brown. An illustrated, detailed, informal history of life in the mining camps deep in the almost inaccessible mountain fastness of the Colorado Rockies. Fifty-eight towns are included. 239 pages, illustrated, end sheet map. Hardcover, $7.95.

1200 BOTTLES PRICED by John C. Tibbitts. Updated edition of one of the best of the bottle books. $4.95.

RELICS OF THE REDMAN by Marvin & Helen Davis. Relics can be valuable! Those dating back to Indian history in our land are becoming almost priceless, say the authors. How to search for these "hard to find" Indian relics, where to search and at what time of year, and types of tools needed, are among the many helpful suggestions given. Large format, many color and b/w illustrations, a striking cover. Paperback, 63 pages. $3.95.

THE WEST

Please add 50c per total order for Handling/Postage
Calif. add 6% state sales tax

THE BRADSHAW TRAIL by Francis J. Johnston. A lively, fast-moving narrative dealing with the man and events which opened California to American statehood. Rich in colorful and informative material, the book also contains a fine foldout map of California's Riverside County depicting the Trail's actual path and many of the landmarks along it. Paperback, 215 pages, $6.00.

GREENWATER by Harold Weight. Called the "monumental swindle of the century" this is the story of the 1906 stampede to the Black Mountains and how $30,000,000 disappeared. Paperback, historic photos, 34 pages. $1.00.

GHOST TOWNS OF THE NORTHWEST by Norman Weis. The ghost-town country of the Pacific Northwest, including trips to many little-knwon areas, is explored in this first-hand factual and interesting book. Excellent photography, maps. Hardcover, 319 pages, $7.95.

DOWN THE COLORADO: The Diary of the First Trip Through the Grand Canyon, photographs and epilogue by Eliot Porter. Contains John Wesley Powell's dramatic journal of 1869 when ten men in four boats swept down the raging Colorado River, over rapids considered impassable, to chart the unexplored river and its surrounding canyons. Includes a 48-page gallery of four-color photographs by America's foremost photographer of nature. Hardcover, large 10¼"x14¾" format, 168 pages. Originally published at $30.00, now priced at $9.98.

THE HISTORICAL GUIDE TO UTAH GHOST TOWNS by Stephen L. Carr. This guide lists in geographical order by counties, gives an historical summary, defines locations and describes with text and photographs more than 150 ghost towns in Utah. Important landmarks are included as well as an abundance of maps. Large format, paperback, 166 pages, $5.95.

LOST LEGENDS OF THE SILVER STATE by Gerald B. Higgs. The author provides interesting reading on 16 legends about the golden age of Nevada. Illustrated with rare old photos. Hardcover, 147 pages, $7.95.

GOLDEN CHIA by Harrison Doyle. The only reference book on the chia plant and seed. This book illustrates the great difference between the high desert chia, and the Mexican variety sold in the health food stores. If you study, practice and take to heart, especially the last ten pages of this nutritionally up-to-date, newly revised book, you will find many answers you've been searching for to the achievement of health and well being, lengthen your life expectancy measureably, and be 99% less susceptible to disease of any sort. Fourth printing, 105 pages, illustrated. Paperback $4.75, cloth, $7.75.

CALIFORNIA PLACE NAMES by Erwin G. Gudde. This book presents the story of thousands of geographical names of California, giving their dates, circumstances of naming, their origin and evolution, their connection with our national history and their relation to the California landscape. This third edition incorporates many new entries and extensive revisions to older entries. An important addition is the reference list of obsolete and variant names. Hardcover, 416 pages, $15.75.

HELLDORADOS, GHOSTS AND CAMPS OF THE OLD SOUTHWEST by Norman D. Weis. The author takes you on a 7,000-mile tour of the Old Southwest, visiting some 67 ghost towns and abandoned mining camps, one never before mentioned in written history. 285 excellent photos. Hardcover, 320 pages, $9.95.

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

DESERT WILDLIFE by Edmund C. Jaeger is a series of intimate and authentic sketches depicting the lives of native animals of our Southwestern deserts, from mammals to birds and reptiles, as well as many of the lesser desert denizens such as land snails, scorpions, millepedes and common insects. Paperback, well illustrated, 308 pages, $2.95.

GOLD RUSHES AND MINING CAMPS OF THE EARLY AMERICAN WEST by Vardis Fisher and Opal Laurel Holmes. Few are better prepared than Vardis Fisher to write of the gold rushes and mining camps of the West. He brings together all the men and women, all the fascinating ingredients, all the violent contrasts which go to make up one of the most enthralling chapters in American history. 300 illustrations from photographs. Large format, hardcover, boxed, 466 pages, highly recommended. $17.95.

THE ROCKS BEGIN TO SPEAK by LaVan Martineau. The authors tells how his interest in rock writing led to years of study and how he has learned that many—especially the complex petroglyphs—are historical accounts of actual events. Hardcover, well illustrated, glossary, bibliography, 210 pages, $8.95.

NATURAL REMEDIES FOR BETTER HEALTH by Dr. Ingrid Sherman. Basically Dr. Sherman writes advice that will help prevent the coming of sickness. She shows how to bring body, mind and soul into balance with nature and God. Instructions and exercises, the uses of many types of foods and drinks, and how to overcome some of the dangers of living, are explained in a pleasing manner to make this book highly useful to all who read it. Paperback, 128 pages, $3.00.

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 medication. Buckram cover, well illustrated, 188 pages, revised edition boasts of 96 4-color photos added. $5.95.

OLD TIME CATTLEMEN AND OTHER PIONEERS OF THE ANZA-BORREGO AREA by Lester Reed. First-hand accounts of the historic mines, cattle drives, homesteads, life among the Indians and invaluable geographic information about locations, place names and other obscure facts of what is now the huge Anza-Borrego Desert Park and other colorful corners of California's Colorado Desert. Paperback, 148 pages plus index, illustrated, $4.95.

BALLARAT* Compiled by Paul Hubbard, Doris Bray and George Pipkin. Ballarat, now a ghost town in the Panamint Valley, was once a flourishing headquarters during the late 1880s and 1900s for the prospectors who searched for silver and gold in that desolate area of California. The authors tell of the lives and relate anecdotes of the famous old-timers. First published in 1965, this reprinted edition is an asset to any library. Paperback, illustrated, 98 pages, $3.00.

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.

GRAND CANYON JEEP TRAILS I by Roger Mitchell. Eight interesting trips on the forgotten Shivwits Plateau on the Northwest rim of the Grand Canyon are described. A rating system is included to determine how rough a road is before you try it. Much of the material in this book is original research, never having appeared in print before. Paperback, amply illustrated with maps and photos, $1.50.

SHADY LADIES OF THE WEST by Ronald Dean Miller. Everyone knows that the harlot was in the vanguard of every move westward, and that she was as much 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 very valid. Author Miller, in this enlightening books, seeks to remedy some of the paucity of information on the American pioneers of this ancient profession. Hardcover, comprehensive bibliography, 224 pages, $7.50.

SHELLING IN THE SEA OF CORTEZ by Paul E. Violette. The shelling techniques described here are applicable anywhere. With the guides included in this book, you will be led to the most probably locations of each particular type of shell. You will be told what to look for, the best times to search in relation to the tides, and how to preserve the specimens. Paperback, well illustrated, 96 pages, $2.45.

UPHILL BOTH WAYS by Robert L. Brown. A selective introduction to a wide variety of attractive trails in Colorado's Rockies. The hikes are divided into six groups, and each group is accompanied with a map. The hikes vary in difficulty, length and scenery from short easy walks to climbs of several 14,000-foot peaks. You will find youself on roads to ghost mining towns, stagecoach roads, and old prospector trails. Paperback, profusely illustrated, 232 pages, $4.95.

BACK ROADS OF CALIFORNIA by Earl Thollander and the Editors of Sunset Books. Early stagecoach routes, missions, remote canyons, old prospector cabins, mines, cemeteries, etc., are visited as the author travels and sketches the California Backroads. Through maps and notes, the traveler is invited to get off the freeways and see the rural and country lanes throughout the state. Now available in paperback only, large format, unusually beautiful illustrations, 207 pages, $5.95.

DEEP CANYON, A DESERT WILDERNESS Edited by Irwin P. Ting and Bill Jennings. This is the first effort to describe both for the imformed layman and the general scientist the environmental relationships of plants, people and animals in this special area of the Colorado Desert. It is also the first book ever to feature the low-desert photography of incomparable Ansel Adams. Large format, hardcover, $12.50.

Rambling on Rocks

by
GLENN and
MARTHA VARGAS

CHALK
It Named a Period in History

NO ONE needs to have a description of chalk. Every school child has held many pieces of it, and it is used as a method of marking in many industries. In spite of this familiarity, few people know exactly what it is made of.

First, a bit of history of the formation of chalk. Surprisingly, it was evidently formed in only a small portion of the earth's history. This period, known as the Cretaceous, was named for chalk. The word is from the Latin, meaning chalky, or chalk-like. During this period, virtually all of the chalk deposits of the world were formed. None of any size or importance were formed in an earlier or later period of the earth's history. The Cretaceous period produced other types of geologic formations, so it was not unusual in other respects.

The most important aspect of the Cretaceous period was that it was the time of the disappearance of the dinosaurs and toothed birds, and the rise of the early mammals and flowering plants.

Also, during this period, the water bodies were filled with many small animals known as foraminifera. These were usually microscopic animals, but a few did grow to lengths of almost 10 inches. The foraminifera, as a group, are very important today, as they are used an indicators when geologists are searching for petroleum deposits.

The foraminifera formed a thin "shell" around their body. This was usually calcium carbonate (calcite), but some formed a shell of quartz or opal. Each of these materials are found dissolved in large bodies of water. All that was necessary was for the animal to cause it to precipitate out as the mineral in the form of a shell. Some of these shells are extremely beautiful; covered with ridges, patterns of tubercles, or other small markings. Most of the animals were in the form of coils, much like snails. Those that are responsible for chalk are known as cocoliths, with shells of calcium carbonate, somewhat resembling flattened discs.

During the Cretaceous period certain shallow seas were teeming with these animals. They were evidently shortlived. At death, their tiny bodies would sink to the bottom, with untold millions of them forming what we now know as chalk deposit. The best known of these is the famous Chalk Cliffs at Dover, England. There is also a large deposit in our southern states (Alabama, Mississippi and Tennessee), and another in the middlewest (Kansas and Nebraska).

Common blackboard chalk is made by using a very pure chalk, softening it slightly, and then extruding it (or molding it) into sticks. The purity is most important, any particles (however small) or a harder substance (such as quartz or opal) will stop the chalk from making a mark on a blackboard. (Today, most are green, but the term blackboard is still used.)

Earlier, we stated that these chalk-forming animals were microscopic. To illustrate this, if one would make a one-inch-long mark on a blackboard, this would contain the bodies of hundreds of thousands of the animals that formed the original deposit. This extremely fine texture is the basis of the value of chalk as a writing medium, as well as some other industrial applications.

Chalk can be used as a polishing agent. Even though calcium carbonate (the minerals calcite and aragonite) has a hardness of only 3 on the Mohs scale of hardness, it can have a mild abrasive effect on other soft materials. During the time that bone and mother-of-pearl buttons were popular, chalk was used to polish them. Any such buttons that may be made today are probably still polished with chalk. Most buttons of today are made of plastics, and the method of manufacture usually produces a smooth lustrous surface that needs no polishing.

Certain metals, such as silver, brass, nickel and sometimes gold, are polished with chalk. For this purpose, the chalk is formed into sticks with some type of wax-like substance as a binder. At times, silverware is given a polish with chalk, but other methods are much superior.

The farmer has a use for chalk in the conditioning of soil. If the soil is high in clay, chalk can be mixed with it to give it a lighter texture.

Chalk has many uses in the building trades. Carpenters and bricklayers use it to make long alignment marks. They impregnate a long string with powdered chalk. When the string is stretched tightly between two points along a floor or wall, then snapped against it, the chalk will be forced out of the string and onto the flat surface. Early use of chalk for this method was simply rubbing a piece of chalk along the string. Today, the string is wound into a box-like reel that is filled with powdered chalk. When the string is pulled from the reel, it has been impregnated with chalk.

Cement, used for making concrete, is made from a very pure limestone (which is predominantly calcium carbonate). Chalk is often used as the raw material in the manufacture of cement. It is also used to make mortar and plaster. Chalk is the usual basis for putty used by plumbers and glaziers. An impure and hard form of chalk can be used as a building stone. It is often used as a filler and soft rubber articles, such as gloves, commonly are made with chalk to give body to the article.

Chalk holds a place of interest in the past and the present. An animal of microscopic size that lived in only a short span of the earth's history has contributed much to our present life style. □

Letters to the Editor

Letters requesting answers must include stamped self-addressed envelope

Bare Facts on Valley Wells . . .

Please be advised the Valley Wells Slag Pile is on private property belonging to the Valley Wells Corporation. If there are no signs attesting to this it is because vandals destroy or steal them just as they destroy or steal everything else that isn't constantly guarded.

It wasn't too many years ago that we had a fine adobe ranch house, fully equipped blacksmith shop, barn, corrals, diesel generator, etc., all the appurtenances of a good cattle ranch. Because of misfortune in the family, we have not been able to maintain proper surveillance and this is what our nice neighbors and friendly visitors do under such circumstances. Instead of trying to help a fellow human who is beset by misfortune, they carry off everything piece by piece.

We would appreciate it, therefore, if you will inform your readers that Valley Wells is private property and if they wish to visit will they please:

1. Not remove anything that is already there.
2. Do not leave any trash.
3. Bury the feces.
4. Send us a donation of $3.00 a day for person, couple or family. ($2.00 if they go naked, it is a nudist guest ranch.)

As we are unable to police the ranch, we can only hope that visitors will be honest and appreciative enough to mail their donation to Valley Wells Ranch, 10094 Meads Ave., Orange, California 92669. Please make checks payable to Ardeane Raab.

ARDEANE AND HAPPY JACK RAAB,
Valley Wells Ranch.

Dog Tags Identified . . .

In reference to the dog tags mentioned in your May issue, before World War II, all Army, Army National Guard and Army Reserve personnel were issued two stainless steel dog tags that were retained by a long and a short chain loop. They included a considerable amount of information relating to the service man concerned. At that time it listed his home address, or of his family.

After World War I, many of the world's nations assembled at Geneva, Switzerland. At that assembly of nations an accord was agreed upon that established what information a military prisoner of war must provide his captors.

When World War II was suddenly thrust upon us, it was realized that a military person's home address should not be in the possession of anyone who could suddenly be held by our enemies. Also his rank, rating, warrant or classification could change instantly by official order.

All Army members were required to turn in their old stainless steel "dog tags" for new ones that included certain changes in data thereon and the elimination of home address and rating. Supply personnel were required to pick up all old ID tags from the military member upon the issue of new, correct ID tags.

Where your findings show two metal tags for a member is evidence that the service man had not lost either of the two originally issued to him. The existence of only one tag can be assumed that the person who surrendered one ID tag had lost one or had secretly retained one improperly as a souvenir. This had serious dangers!

Supply personnel were required to dispose of all tags taken in. No real disposal method was given. The dog tags of stainless steel are fire-resistant and corrosion-resistant, so effective disposal was almost impossible. The ones you found, after 35 years, appear to be in good shape!

Let us look at the history of this change. If a home address could fall into enemy hands when a service man was taken a prisoner of war, the enemy may provide that information to enemy agents. The prisoner's family could then be annoyed and harrassed.

Also, with the address in the service man's possession, and no clear military information available, there were problems. In the case of an injury or fatal accident in our Stateside area controlled by civil authorities, there were instances where the family was approached concerning the accident and no notification was made to military authorities until later.

I was assigned to an Overseas Discharge and Replacement Depot before World War II and for more than a year thereafter. The checking of "dog tags" of all arriving and departing troops was essential and also required at the OD&RD where I was on duty.

RUDOLPH J. STEWART P.E.,
Lt. Col. USAF Retired,
Canby, Oregon.

Mohave, Mojave? . . .

While reading Mr. Jenning's article in the April issue of *DESERT*, I could not help but notice his concern over the proper spelling of the name of the desert which occupies such a large portion of eastern California. I, too, was concerned about the etymology of the word and in the course of other studies compiled a rather lengthy list. Perhaps your readers will be interested in the results of my own research on the subject. I call it Mojave, Mohave, What's in a Name."

In recent years writers for both popular and academic journals have taken sides over whether the desert landscape which dominates southern Nevada and part of eastern California should be spelled "Mojave," or "Mohave." In a recent issue of *Desert Magazine* (April, 1977) Bill Jennings ("Crucero, A High Desert Crossing") indicated that the spelling "Mojave" was a California-ism. Indeed, "Mojave" is used to identify the town, river and portions of the desert within California. The lake formed by Davis Dam, the Indians living along the Colorado River, the country and town in Arizona are all identified by "Mohave." It would seem that present usage *is* a California-ism. The same pronunciation holds for both spellings, however.

Some controversy exists over which is the "true" spelling. Adherents of "Mojave" claim that the word is derived from Spanish and therefore the "H" spelling is phonetically inaccurate. Those who favor "Mohave" say the word comes from an aboriginal language and that their spelling is the accurate English transliteration of the word. Both sides cite precedents to support their arguments. However, neither spelling is of more than recent origin.

The oldest known spelling of the word is found in Escobar's journal of 1605 which chronicled the progress of Onate's expedition to the Colorado River. Bolton translated Escobar's journal in 1908 and came up with "Amacava." Even here there was controversy. In 1953 Hammond and Rey, interpreting the same passage from Escobar, used the spelling "Amuacava." Note that neither spelling contains a "J" or "H." Later, two Spanish missionaries offered two additional spellings: "Jamajab," from Garces' diary of 1776, and "Yamajab" from Font's writing in 1776. Although dissimilar in spelling, considering the regional variations in late 18th century Spanish, the two are phonetic twins. The "J" in 18th century Castillian Spanish was pronounced differently than is common among modern Spanish speaking peoples of the Southwest. There is no sound in English which is completely analagous to the 18th century Castillian "J." In 1826, Jedediah Smith, the last English speaker to contact the Indians of the Colorado River before the great wave of immigration of the 1840s, used the spelling "Amuchaba."

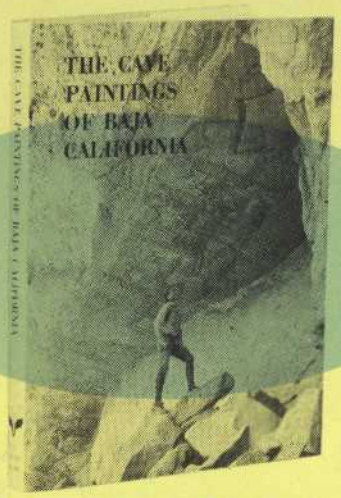
None of the spellings thus far presented was generally accepted. In 1852, G. S. Heap, who traveled overland with Beale, wrote about the "Mohahveh River." "Mohahve" appeared on the U.S. map of 1856. Bancroft, writing in the 1880s and 1890s used "Mojave" to describe areas in Arizona as well as California. "Mohave" appeared on Auto Club maps of California well into the 20th century. It should be noted here that none of the writers using spellings based upon modern pronunciation had spoken to the native peoples at the time that their culture and language were free of European influence.

Both "Mojave" and "Mohave" are relatively recent inventions. Neither is correct, but neither can be termed wrong. They are approximations and have evolved from modern usage. Any attempt to resolve the spelling dispute at the present time is in vain. The spellings as they appear on topographic maps are as good as any, "Mojave" in California, and "Mohave" in Arizona.

DR. H. F. GILMAN,
Dept. of Earth Science,
University of California, Riverside,

EXPLORING OLD CALIFORNIA AND BAJA

Great Reading from
Copley Books, La Jolla, Calif.

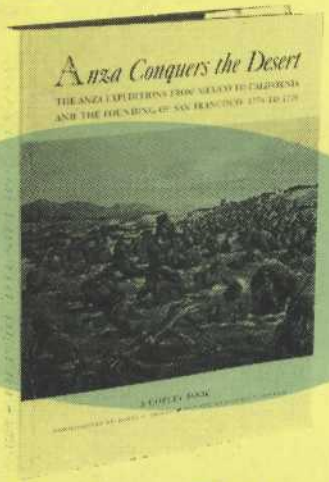


The Cave Paintings of Baja California

A dazzling report on a vast array of the great murals of an unknown people, filled with pages and pages of full color reproductions. A handsome book written by Harry Crosby. List price $18.50.

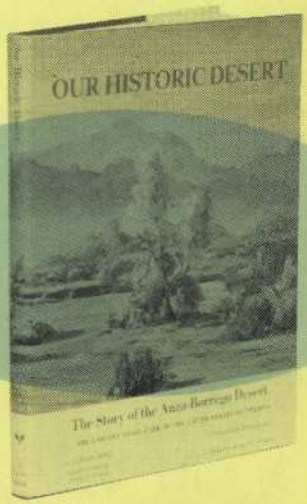
The King's Highway in Baja California

Retracing the ancient Mission Road for the first time in 100 years. A fascinating report of exploration in search for the trail of the padres in neighboring Baja California. Beautifully illustrated with photographs, sketches, maps. Cloth. 182 pages. List price $14.50



Anza Conquers The Desert

A vivid portrayal of Captain Juan Bautista de Anza's conquest of the Great Desert—an arid wasteland that had impeded the northern advance of the Spanish Empire for 200 years. List price $12.50.



Our Historic Desert

The beauty, lore and history of America's largest state park — the Anza-Borrego Desert. Manificent photographs . . . many in full-page color . . . trails and sketches. A thoughtful gift for those who love the desert. List price $10.50.

The Colorful Butterfield Overland Stage

A story in art and text on how the West was first linked to the East. This book depicts the California section, by far the most colorful of the entire route. A new and revised edition of the popular book of the famed paintings by Marjorie Reed Creese which are accompanied by a text for each illustration. List price $6.50.

ORDER TODAY FROM

Desert Magazine Book Shop

Box 1318,
Palm Desert, California 92260

Please add 50c for postage/handling
Calif. residents add 6% state sales tax