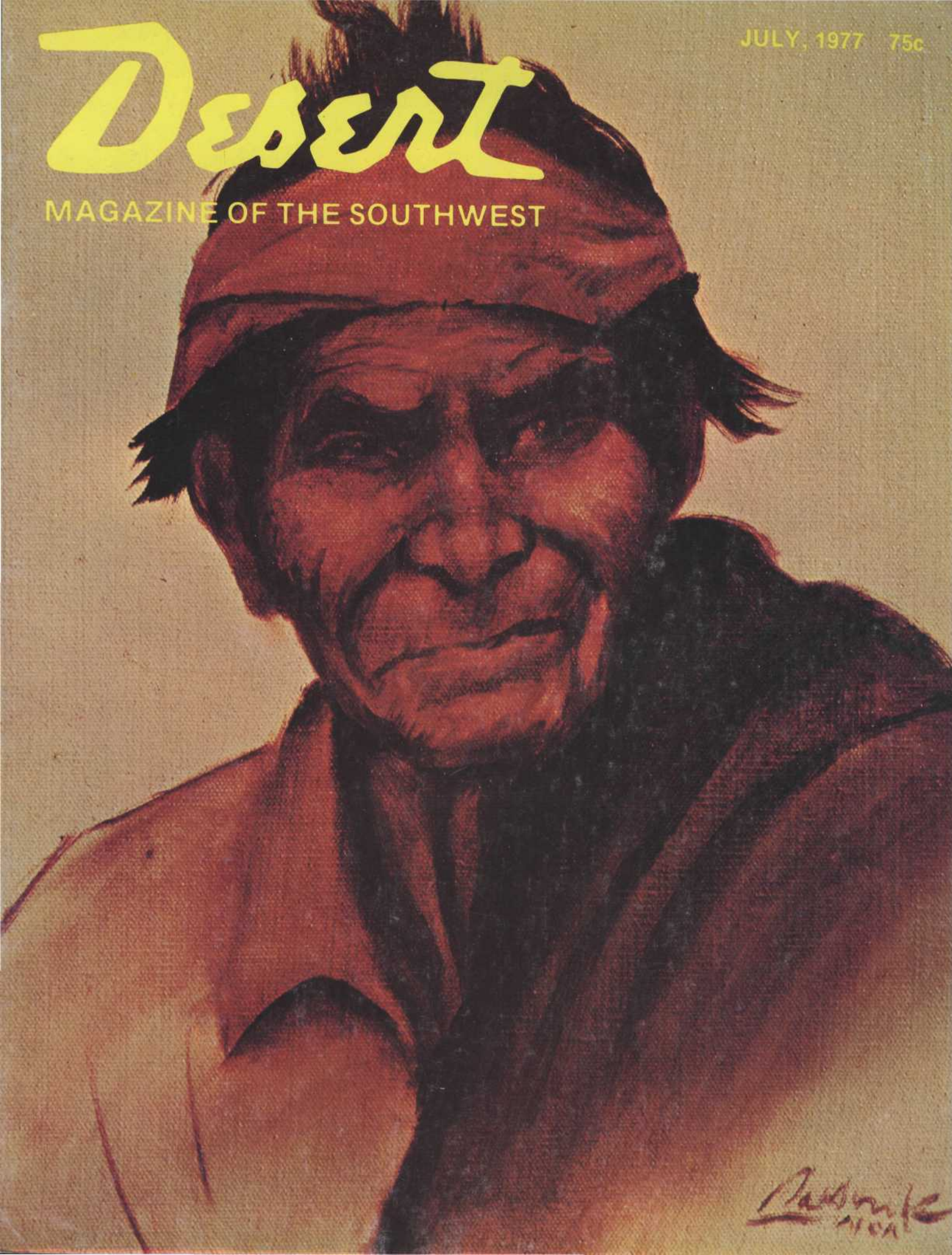
JULY, 1977 75c

Desert

MAGAZINE OF THE SOUTHWEST



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Desert MAGAZINE

Volume 40, Number 7 JULY 1977

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THE COVER:
"Tarahumara Man," 16" x 20" oil, by Charles La Monk of Palmdale, California, this month's feature artist. Courtesy of Mr. and Mrs. James Smullen, Pasadena, California.

FEATURES

DEPARTMENTS

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A Peek in the Publisher's Poke

THIS ISSUE of *Desert* retraces two dusty historic trails. Mary Frances Strong follows the memorable Pony Express across Nevada in the first of a two-part article, and Bill Jennings pursues California's old Bradshaw Road from the Salton Sea to the Colorado River.

A triple treat is in store for lovers of Indian legends and lore as Ruth Armstrong covers the summer ceremonials on Puye Mesa in New Mexico, and Jim Smullen tells us about the Tarahumara tribe of Mexico, reportedly "the fastest humans." Our feature and cover artist, Charles La Monk, of Palmdale, California, who specializes in Indian rock writings *and* Tarahumara portraiture, completes the treat.

On the flora and fauna side, Michele Methvin "sweeps the flora" with the much overlooked juniper tree, while naturalist K. L. Boynton "has a little fauna" in his hummer of a treatment on the Costa Hummingbird.

For the chasers of dreams and gold, Howard Neal tells us how it was and is at Mokelumne Hill, California, one of the Gold Rush towns of 1949, while out in Utah, Dale Maharidge hikes down Trachyte Creek, an interesting side door to majestic Lake Powell.

And, after a long hike, what better place to end up in than a cool palm oasis, as Dick Bloomquist's series covers Twentynine Palms in Joshua Tree National Monument.

If this list of articles hasn't struck a nerve, try reader Gifford's "Letter to the Editor" on your funny bone! □

William Kruger

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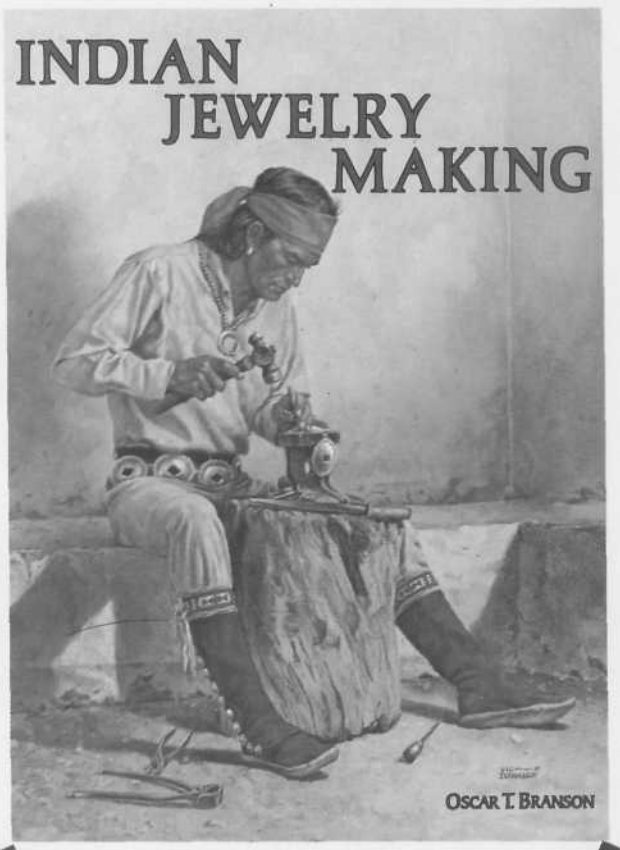

TURQUOISE, The Gem of the Centuries

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.

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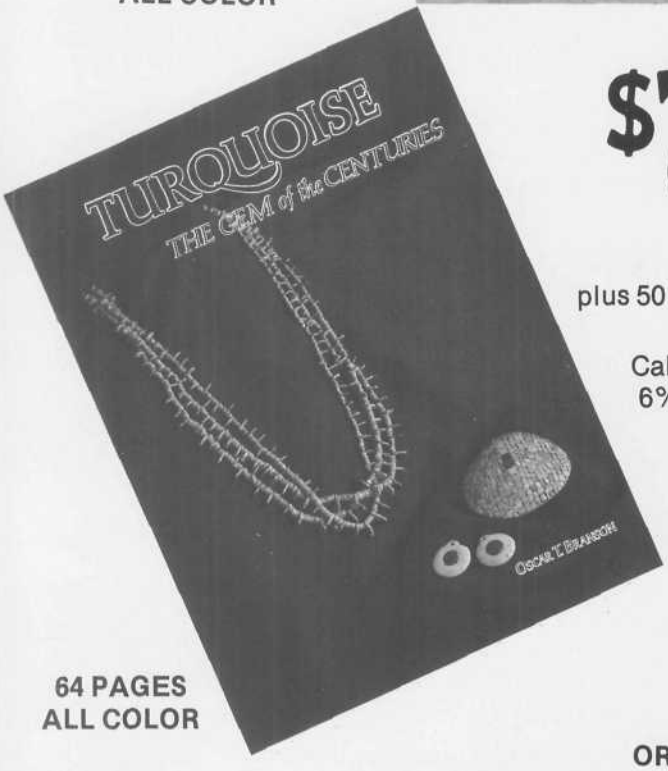

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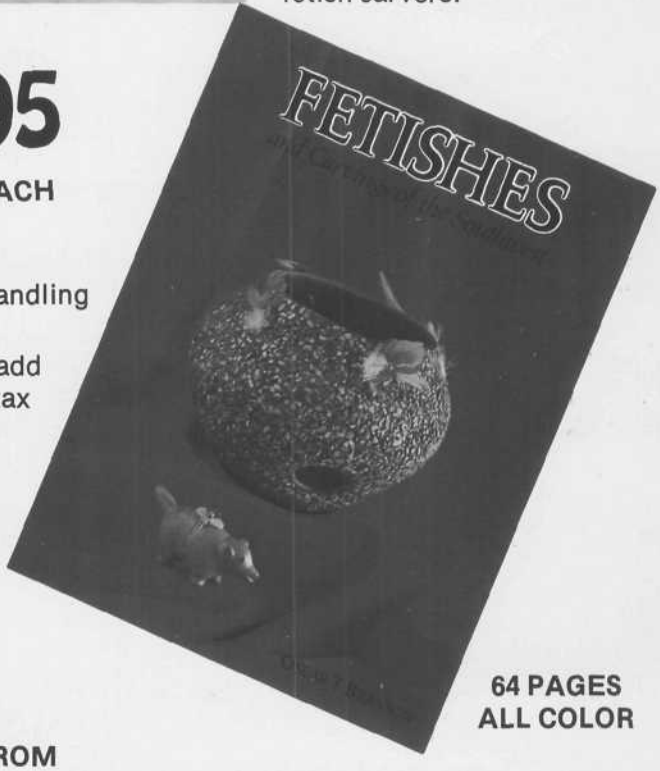

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OLD TIME CATTLEMEN
AND OTHER PIONEERS
OF THE ANZA-BORREGO AREA

By Lester Reed

In 1963, one of the classic regional books of the desert southeastern corner of California was published by its author, Lester Reed, descendant of a pioneer family in the Borrego and Hemet region. It has long been out-of-print but now a second edition has appeared.

Unchanged from the original, the new edition adds only a preface and an index. None of the text and photographs are revised. Then and now, *Old Time Cattlemen and Other Pioneers of the Anza-Borrego Area* offers the most accurate, eye-witness account of the early days in the Colorado Desert yet published.

It features 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 State Park and other colorful corners of California's Colorado Desert.

The author spent a long career as a cowboy, government hunter and trapper before turning author, a happy circumstance made even more enjoyable now that his little book has reappeared.

Old Time Cattlemen and Other Pioneers again is available to fill a large void in the bookshelf of useful volumes about the California desert country.

In his preface, Bill Jennings explains his reasons for reviving this desert classic. As he says, it is an invaluable regional history that could not be allowed to disappear. And, the index proves to be equally invaluable as a tool for the hurried reader who needs to find the true story of how Collins Valley got its name, or, where the old Indians made their home.

A valuable, highly readable and very accurate book. Paperback, illustrated, 148 pages plus index, $4.95.

THE BRADSHAW TRAIL
By Francis J. Johnston

The Bradshaw Trail is a lively, fast-moving narrative dealing with the man and events which opened California to

American statehood and awakened that virtually undisturbed giant of raw material, Arizona. The book is rich in colorful and informative material and contains, along with illustrations and index, a fine foldout map of California's Riverside County depicting the Trail's actual path and many of the landmarks along it. The Appendix contains tables noting the names and modern location of camps, springs and state stations. Names, routes and dates-in-use of Western stage line companies are also included.

Paperback, 215 pages, $6.00.

DESERT JOURNAL
A Naturalist Reflects
on Arid California

By Raymond B. Cowles
in collaboration with
Elna S. Bakker

The layman reading this lifetime reminiscence by one of the California desert's most renowned naturalists will make an inevitable comparison to the work of one of his distinguished peers, Edmund C. Jaeger.

Both men fell in love with the desert at an early age. Both have the knack of writing about a basically scientific subject in a way both understandable and highly enjoyable to the average reader, particularly to the average reader imbued, as they, with a lifelong infatuation with the arid regions.

Cowles' field was as varied as his imagination. He was one of the University of California's outstanding biology teachers. His students have followed him to distinguished careers in various specialties, encouraged and exhilarated by his example. Dr. Cowles has written many works, both technical and popular, but this, his last manuscript before his death in late 1975, in many ways may be his monument.

Desert Journal is more than one man's observations of the teeming, if sometimes inobtrusive life of the southwestern arid regions. It offers food for thought to those of us who feed or otherwise alter the natural environment of the desert denizens around us. Cowles warns against manipulation of the natural homeland for countless small creatures, with many examples of well-meaning but deadly assistance to the natives that result in death.

The book is filled with the observations that made Cowles a top scientist and reveal the life-long curiosity that typifies the dedicated desert researcher. The book will provide the occasional desert visitor as well as the year-around desert dweller with answers to many of the little questions you have been reluctant to ask, and probably your equally curious friends couldn't have answered anyway! Ray Cowles learned the answers in a lifetime of desert living and loving.

His collaborators, Gerhard and Elna S. Bakker helped turn his lifetime's collection of notes and random thoughts into a highly readable book. Gerhard Bakker, one of Cowles' students, drew the handsome black and white illustrations and Mrs. Bakker, a successful desert author in her own right, organized the narrative into an excellent, concise book.

Hardcover, well-illustrated, 263 pages, $10.95.

TRAILING THE "PONY" ACROSS NEVADA

PART I—THE HISTORY

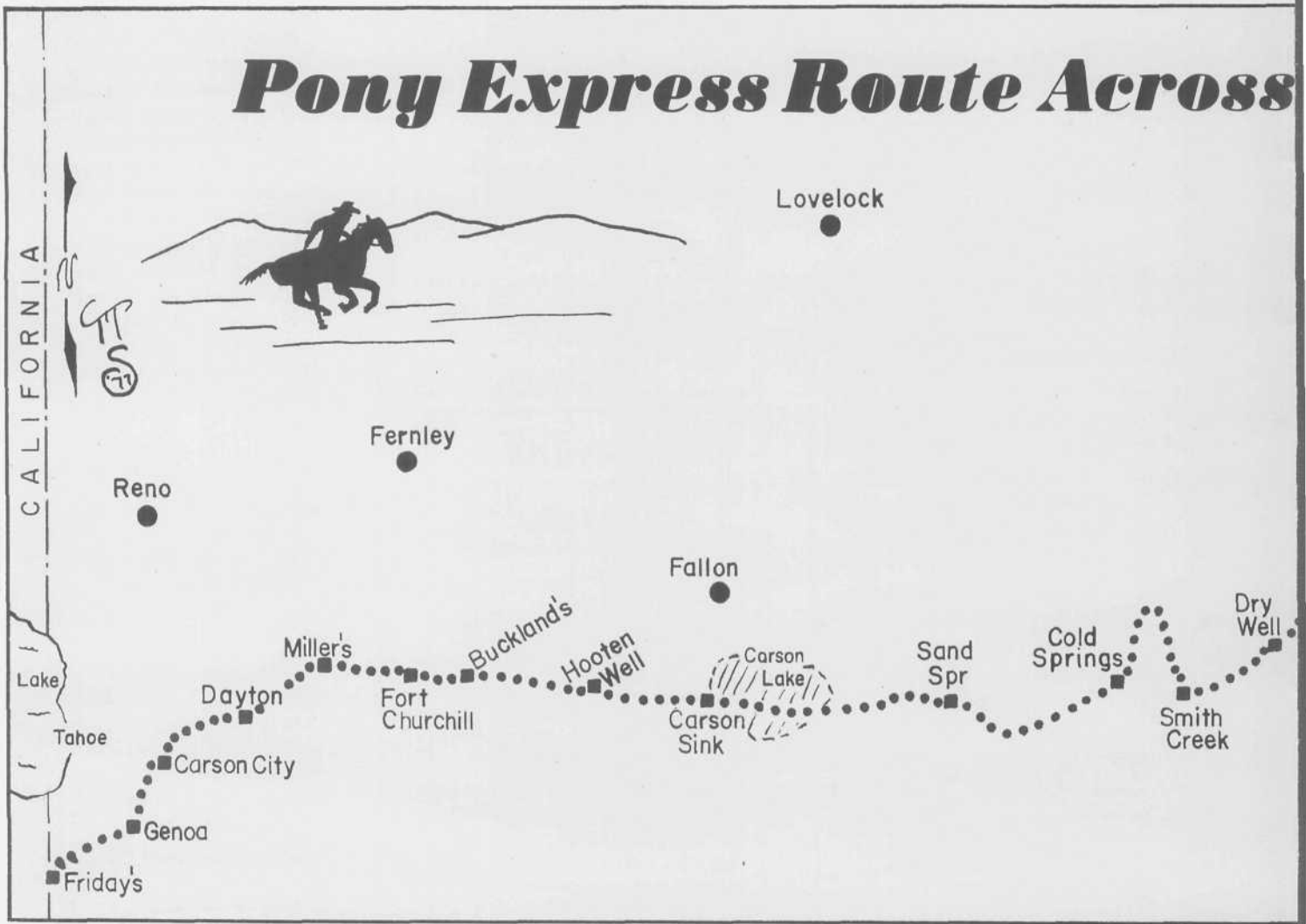
by MARY FRANCES STRONG

photos by Jerry Strong

EVERYONE HAS HEARD a great deal about the legendary Pony Express. Our school history classes gave us the facts. However, it was the Saturday afternoon movies that showed us the exciting tales about these brave and daring young men. Fact was so deeply embellished with fancy it seemed as if the Pony Express had played a long and intrinsic role in the settling of the west.

The "Pony," as it was affectionately called, was one of the most successful endeavors of the 1860s. However, it proved to be a financial failure even though postage rates were $5.00 per half-ounce. It was also doomed to early extinction by the "stringing of the wireless" west. Actually, the Pony Express was in existence for only a hectic 18 months — April 3, 1860 to October 28, 1861. Yet, it gained immortality as one of the most dramatic undertakings in Western History.

As part of our Nation's Bicentennial Celebration, the Pony Express Route through Nevada has been marked and



some of the original ruins protected. This was accomplished by the joint effort of the Nevada Districts of the Bureau of Land Management, Youth Conservation Corps members and summer fire crews. Their labor has provided travelers an opportunity to "tune in on the past." An exciting adventure will be the result of "Trailing the Pony in Nevada." Before embarking on such a trip, let's bone-up a little on the "Pony's" history.

The years 1841 to 1857 saw the greatest mass migration in history take place as thousands of emigrants packed all their possessions and followed the sun west. They were searching for prime land on which to settle and begin a new way of life. Included in the movement were farmers, ranchers, merchants, tradesmen and professional men. Also joining the ranks were gamblers, prostitutes, crooks and gun slingers. They, too, planned to try their luck on the new frontier. Their journey was long and hazardous. Many lives were lost, yet, undeterred, the movement west continued.

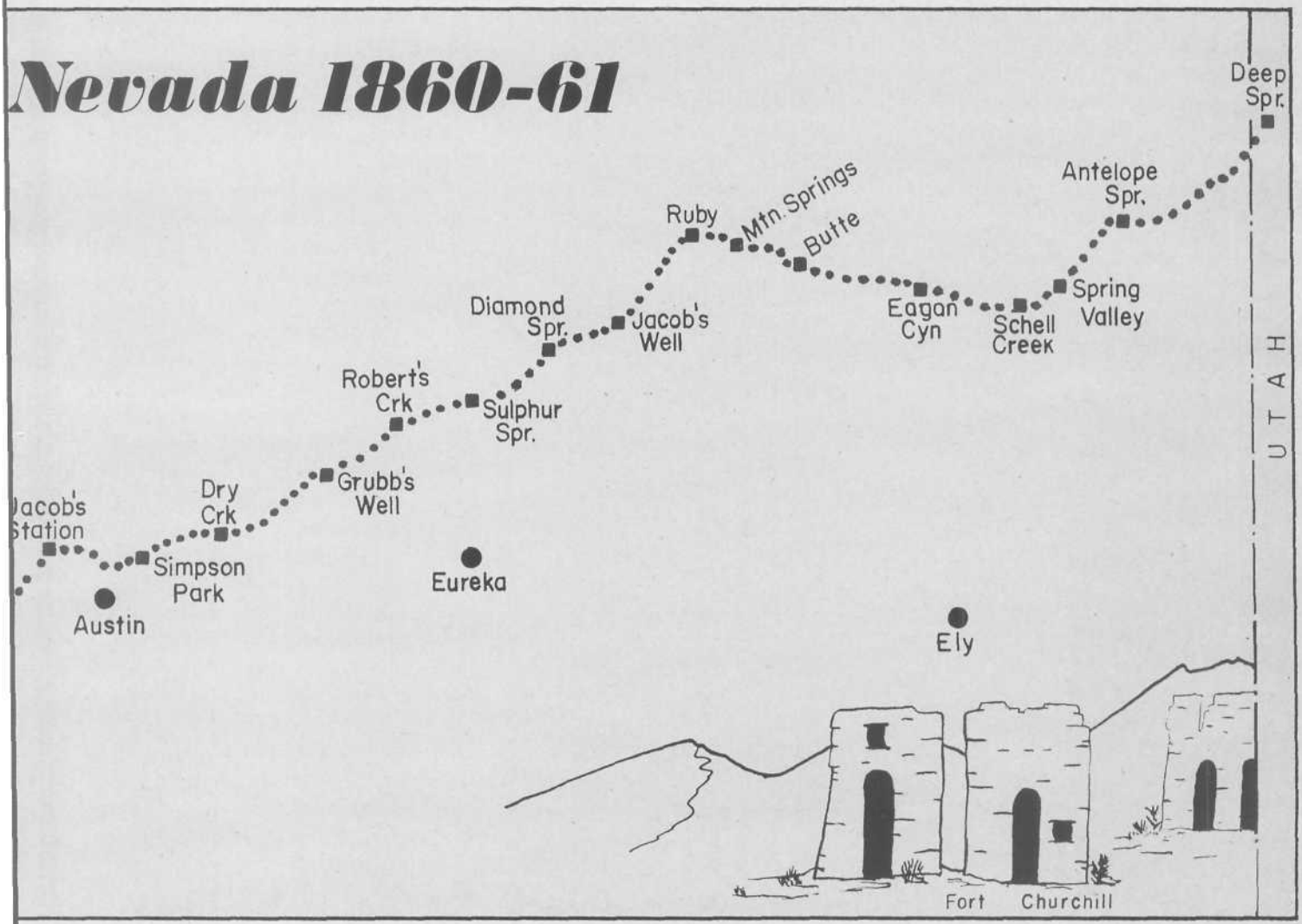
Nearly 2,000 miles of vast, unpopulated land, plus the mighty Sierra and Rocky Mountains separated the pioneers from their relatives back home. Once settled in, they yearned for news of those left behind. Letter mail was usually shipped around the Horn to West Coast ports then dispatched by stage to final destinations. Time enroute could vary from six to nine weeks.

By 1858, mail service had improved due to shipment via stage lines including John Butterfield's Overland Mail Service to California. Delivery time had been reduced to three or four weeks. Still, the new frontier hungered for more up-to-date news of country and loved ones.

When ominous war clouds began threatening the young United States, it became apparent to many that a fast, dependable method of communication with California would be imperative. California's Senator William M. Gwin had long been of this opinion. He had proposed such a service, via the Central Overland Route, to Congress four years earlier but the project had aroused little interest.

The imminence of war and the great Colorado Gold Strike of 1858 combined to make the freighting firm of Russell, Majors and Wadell aware of the need for an overland route to serve the Rocky Mountain Regions, as well as California. They decided to charter a new company (Central Overland California & Pikes Peak Express (to operate a freight service and weekly mail delivery to California. The latter to be called the "Pony Express." They also provided a million dollars to set up the new enterprise.

Some historians feel Russell, Majors & Wadell's backing of the "Pony" was not essentially to provide a faster mail service. Instead, they hoped to prove the Central Overland Route shorter and more feasible than the southern route used by Butterfield's Overland Mail Company. They were after the lucrative mail contracts held by the latter. Since Butterfield's route ran through secessionist territory, they also hoped to show that mail would be safer on the Central Route. This was a persuasive point in their favor toward obtaining the government contract.



Genoa, the first permanent settlement in Nevada, was the second stop eastbound on the Pony Express Route from California. Originally established as Mormon Station in 1851, a replica of the original trading post now houses a fine museum. Items used by the Pony Express and other local, historical artifacts are on public display.

Be that as it may, the monumental task of placing the Pony Express in service began. Plans called for the establishment of 190 stations along the near-2,000 mile route. Stations already in use by the Overland Stage Line between St. Joseph, Missouri and Salt Lake City, Utah, were quickly utilized.

From Salt Lake City, the Pony Express Route headed across the Utah Desert and followed the 49'er Trail through Central Nevada to Sacramento, California. Nearly all the stations needed along this section of the route would have to be constructed. This was accomplished in just two months!

Two types of stations were built — home and relay (the latter also called "changing stations"). Home stations were approximately 50 miles apart and a rider's regular run was back and forth between his home stations. Fresh mounts were obtained at 10 to 15 mile intervals at relay stations along the way.

Fort Churchill was established in 1860, following an uprising by the Paiute Indians and interruption of the Pony Express Mail Service. Camping is permitted.

Riders rested at the home stations until a rider from the opposite direction arrived. There were few "days off." Pony riders had to be ready whenever the mail arrived — anytime of the day or night.

Home stations had sizable crews including the all-important blacksmith. A stable and corral housed a considerable number of horses. Maintenance of the horses and equipment was provided along with sleeping and eating accommodations for riders at the end of their runs.

Relay stations were quite primitive and usually built from materials available locally — rocks, logs or adobe. A corral and crude shelter held the horses. The latter was often part of the men's living quarters. Two men operated the relay stations and a saddled horse was ready when a rider arrived. Initially, the rider blew a horn as he approached the station. It was soon learned the pounding of the horse's hooves gave ample warning of an approaching rider, thereby eliminating the need of a horn. Only two minutes were allowed for the rider to dismount, remove the mochila (mail carrier), place it over the new mount and then take off.

The mochila were an innovative leather blanket which had been specially designed for use by the Pony Express. It fitted over the saddle and was held in position by the saddle horn and weight of the rider. The load limit was 20 pounds of mail — carried in four pocket-like compartments. Three held transcontinental mail and remained locked until arrival at San Francisco. The fourth compartment held local mail to be delivered along the way. Each home station keeper had a key to the local compartment. He counted the letters and made note of the number and arrival time in his log before removing any mail for his area.

Because riding the "Pony" Route would be grueling work, only wiry, brave young men were suited to the task. Speed was of the essence. Riders had to be under 18 years of age and weigh no more than 120 pounds. They were required to be excellent riders with enough stamina to endure up to 10 consecutive hours in the saddle. It didn't take long to recruit the 80 such men needed. Though young, many were already skilled couriers, guides and scouts. They were paid $120 to $125 per month, dependent on their run.

The first Pony Express Mail delivery left San Francisco, California and St. Joseph, Missouri simultaneously on April 3, 1860. Destinations were reached in just under 10 days! Both ends of the line held gala celebrations for the new era of rapid communication. "Pony" riders achieved a remarkable record by consistently carrying the mail between "St. Jo and Frisco" in 10 to 13 days. Only once, during the entire operation, did mail fail to come through. This was due to both rider and horse being killed.

Pony Express riders were some of the youngest (many just 14 years of age), most daring men in the West. Those who covered the 420 miles through Nevada at breakneck speeds encountered mountain blizzards, blinding desert sandstorms, flash floods, extreme heat and bone-chilling cold. Adding to their worries was the uprising of the Nevada Paiutes.

The Indians had long endured mistreatment by the whites and many were on the verge of starvation. Most of their raids were made on isolated stations where food and horses were available. Many men were killed and stations burned. It was also a dangerous situation for the riders. They would arrive to find a fresh horse unavailable, then be forced to continue their run on a tired mount through hostile Indian territory.

The longest ride in Pony Express history was made by Robert "Pony Bob" Haslan in May 1860. Bob's regular run was from Friday's Station in the Sierras east to Buckland's Station near what is now Lake Lahontan. His first awareness of a problem came at Reed's Station where he found all horses had been confiscated by the militia. The Pyramid Indian War had begun! Even though his horse was nearly exhausted, Bob made it to Buckland's Station where he was to be relieved by rider John Richardson.

Richardson refused to take his run because of Indian problems. "Pony Bob" agreed to make the extra run when station keeper Marley offered him a $50.00 bonus. Bob, after three relay stops, arrived at Smith's Station — a total distance of 190 miles. He took a short rest, then began the return trip. His first stop was a Cold Springs Station where he found the Indians had killed the keeper and taken all the horses. Bob was able to change mounts at the next station (Sand Springs) and safely returned to Friday's. He had traveled 380 miles and was but a few hours over the regular schedule! His reward was an additional $50.00 bonus.

The Bureau of Land Management marked the Pony Express Trail across Nevada as part of our Nation's Bicentennial Celebration. Their efforts were an attempt to make us all aware and proud of our heritage. Unfortunately, a great deal of vandalism has occurred. Some people seem to feel these expensive signs make fine souvenirs. Such thievery by fellow Americans shames us all. Photo courtesy B.L.M., Battle Mountain, Nevada.

Bolivar Roberts, based in Carson City, was the superintendent of the Western Division of the Pony Express. He was responsible for the construction of 29 stations across the Nevada wilderness, plus the hiring of riders and men to man the stations. When the mail service commenced, Roberts was constantly on the trail handling emergencies; taking care of horse thieves, seeing to it supplies reached the stations, rebuilding stations the Indians burned down, hiring new men and making sure the horses were kept in good condition.

The "Pony" route was divided into three districts. It was the deep dedication of the superintendents — Bolivar Roberts at Carson City, Nevada, Joseph A. Slade at Julesburg, Colorado and A.E. Lewis at St. Joseph, Missouri — that was largely responsible for the outstanding efficiency of the service. In the vast, unpopulated territory along the Pony Express Route, the superintendents were "general, judge and jury."

Today, the Pony Express lives on in Nevada, perhaps more dramatically than elsewhere along the route. It is possible to follow most of the tortuous trail from border to border across the Silver State. You will travel through country that, except for fine highways and a few towns, remains much the same today as it was 117 years ago.

Thanks to the effort of the Bureau of Land Management, you can easily locate the various station sites — some with ruins, others where nothing remains. A few are on private property. On such a trek, you will become aware of the hardships endured and marvel at the courage of the men who rode the "Pony" and manned the stations.

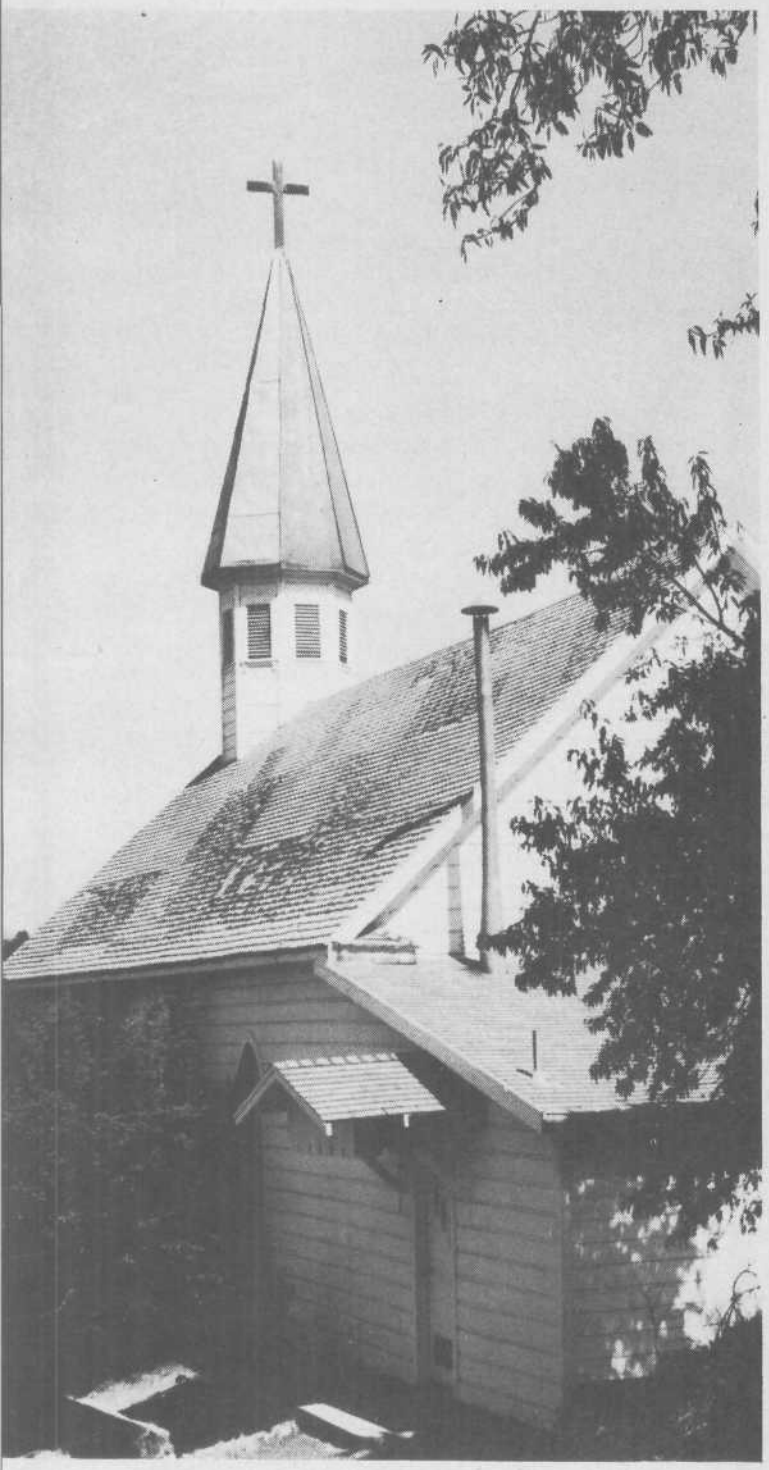
For those who would prefer to follow the "Pony" over a shorter route, you will find Highway 50 from Fallon to Jacob's Station a fascinating trip into the past.

To be continued in the August issue — "Trailing the Pony in Nevada, Part II — The Tour." □

Desert GHOSTS

by HOWARD NEAL

Mokelumne Hill, California



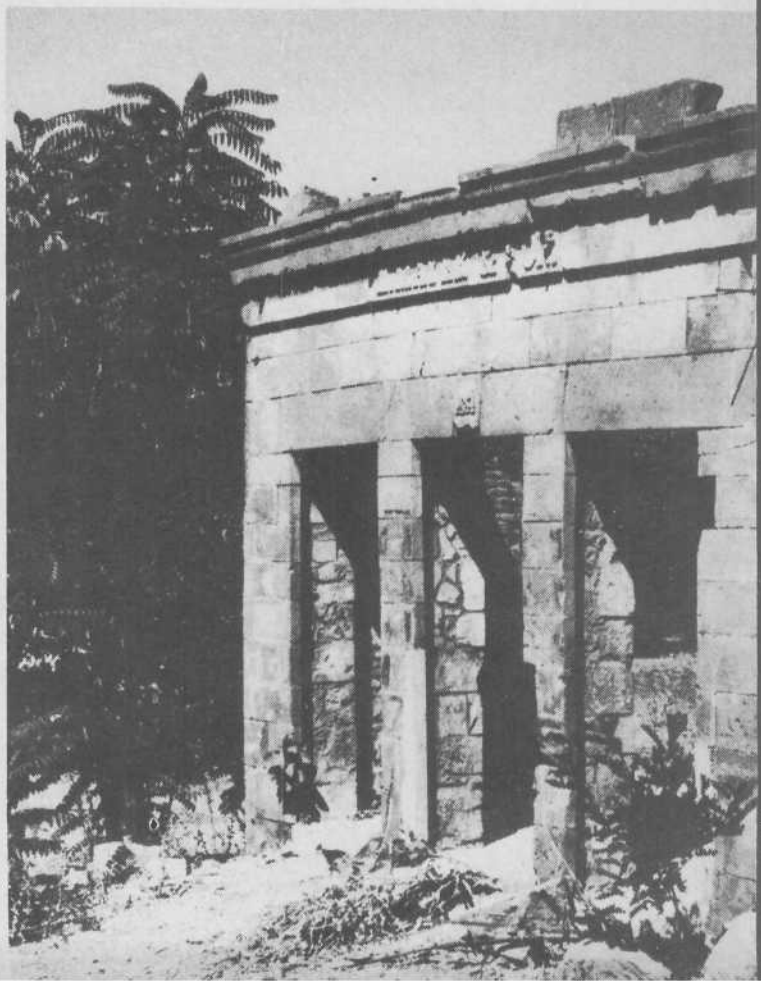
Mokelumne Hill's Catholic Church is one of two beautiful small wooden churches in the community. The other is the Congregational Church, built in 1856. New England sailors were among the first "49ers" and strongly influenced the design of early buildings.

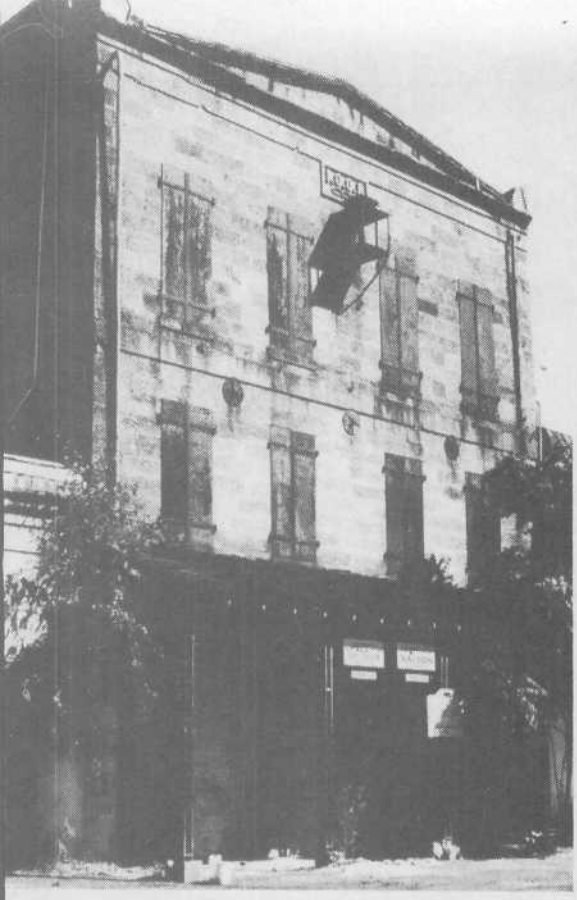
To the casual traveler, moving north or south along Highway 49, California's Mother Lode country appears to present a quiet vista of pastoral peace. It was not always so.

One gold rush town, Mokelumne Hill, can boast the following roster of murder and mayhem: five killings in one week, a minimum of two lynchings, a 17-week period during which there was at least one murder per week, and two . . . yes, two . . . wars!

The first war, in 1849, went down in history as the "Chilean War." It seems that one Dr. Concha was using slave labor to work his claims, and the "Yankees" did not appreciate that use of slaves. The Americans attacked and won the only battle of the war. One can only speculate how much the Americans were influenced by a desire to take over the rich diggings being worked by the South Americans.

Two years later a group of French miners, in a show of poorly-timed patriotism, raised a French flag above their claims. The Americans didn't like this any more than they liked slavery. Besides, the





The I.O.O.F. Hall was the first three-story building to be built along the Mother Lode. A light brown stone, which is known as rhyolite tuff, is a very common building material used throughout the California Gold Country.

Above: Hotel Leger, one of the most famous along the Mother Lode, is still operating. Hotel property includes the building that once served as the Calaveras County Courthouse. The county seat was moved to San Andreas in 1866. Left: The remains of the Mayer & Son store is a noted ruin on one of Mokelumne Hill's main streets. Gold was discovered in the "Mok Hill" area in August of 1848. The town was established as a supply center less than three months later. Photos by Howard Neal.

French claims were very rich. Again, the Americans attacked and won both the battle and the gold.

To this day, the visitor to Mokelumne Hill will not only find pleasantly winding streets and an excellent display of gold rush architecture, but he will find French Hill and Chile Gulch, the sites of the two "wars."

Mokelumne Hill is located on California Highway 49, seven miles south of Jackson. □

SPLENDOR IN

by MICHELE METHVIN

A VACATION TRAVELER sees so much while on the road, that quite often what is seen is taken for granted. It is there, it is noticed, and it is passed by, without a second thought. The juniper tree is just such an example. Without them, the desert would lose part of its grandeur and splendor. And yet, are they really seen at all?

The juniper tree is found throughout the world, from the United States to the Himalayas. Though they usually come to mind in association with the desert, they are actually native to cold and temperate regions. Thus, junipers grow in both high and low altitudes. The juniper is a member of the Pine family; genus *Juniperus* and this includes about 40 species.

The juniper has a tough, scaly stem. The bark is separated from the woody layer by a resinous-gummy structure which enables it to be easily stripped. Indians made use of the bark for such necessities as mats, sandals, padding and rope. The tree itself provided the Indians with shelter from the sun in summer and its wood provided them with warmth during the winter. Its utilization has always been versatile; always in demand. The wood of the juniper is fine-grained and, today, is used for cabinet-work and inlay design.

The juniper is seen generally as a spreading shrub, with its twisted and gnarled body bent and contorted into numerous shapes. But the juniper can also obtain the heights and dimensions of a tree, regal and majestic in stature.

Two types of leaves are produced by the juniper; small, scale-like leaves and needle-like, sharp-pointed articulated leaves; these without oil glands. The leaves can be found on separate plants, needle-like on younger and scale-like on older plants and some plants produce both simultaneously.

In most species, male and female cones are borne on separate plants. The male cones are dry and bear pollen — producing cells on shield-shaped scales. The female cones have fused scales which are fleshy when mature and give a solid "berry-like" appearance. The berry can vary from one-quarter to one-half inch in diameter and contain from one to 80 bony seeds. The Utah juniper distinguishes itself from other junipers in that it contains but one seed and one seed only.

The juice of the berries is both bitter and lasting; quite unpleasant to the taste. Some varieties of the juniper are even poisonous. The berry, or cones, grow in clusters and are red, purple or blue-gray in color.

The Utah juniper is also different in one other aspect; its main trunk

Just a part of a lengthy juniper root that searches for water and life.

THE DESERT

branches start just above the ground, rather than below ground.

So what is so outstanding about the juniper tree?

Many junipers are old-looking trees, even when they are very young. They look wind-blown, they look tired. They look as though it is all they can do to keep from falling over. During the dry, summer months when they are tortured by the unrelenting rays of the sun and the hard, hot, blowing desert winds, they look dusty and drab. But even with that they are beautiful to behold. There are no two alike. Each has its own character, its own personality. They are as individual as anything on this earth.

And for every shrub that is grotesquely gnarled in shape, there is a tree that holds itself up straight and proud and weathers the elements with dignity.

They can grow and live anywhere they can get their roots into a little soil, even if that soil is but a few grains embedded in a crack of sandstone. Their roots spread and travel great distances in search of water to sustain their lives. It is not unusual to see roots, above ground, fingering their way for 60 feet, groping and feeling for water.

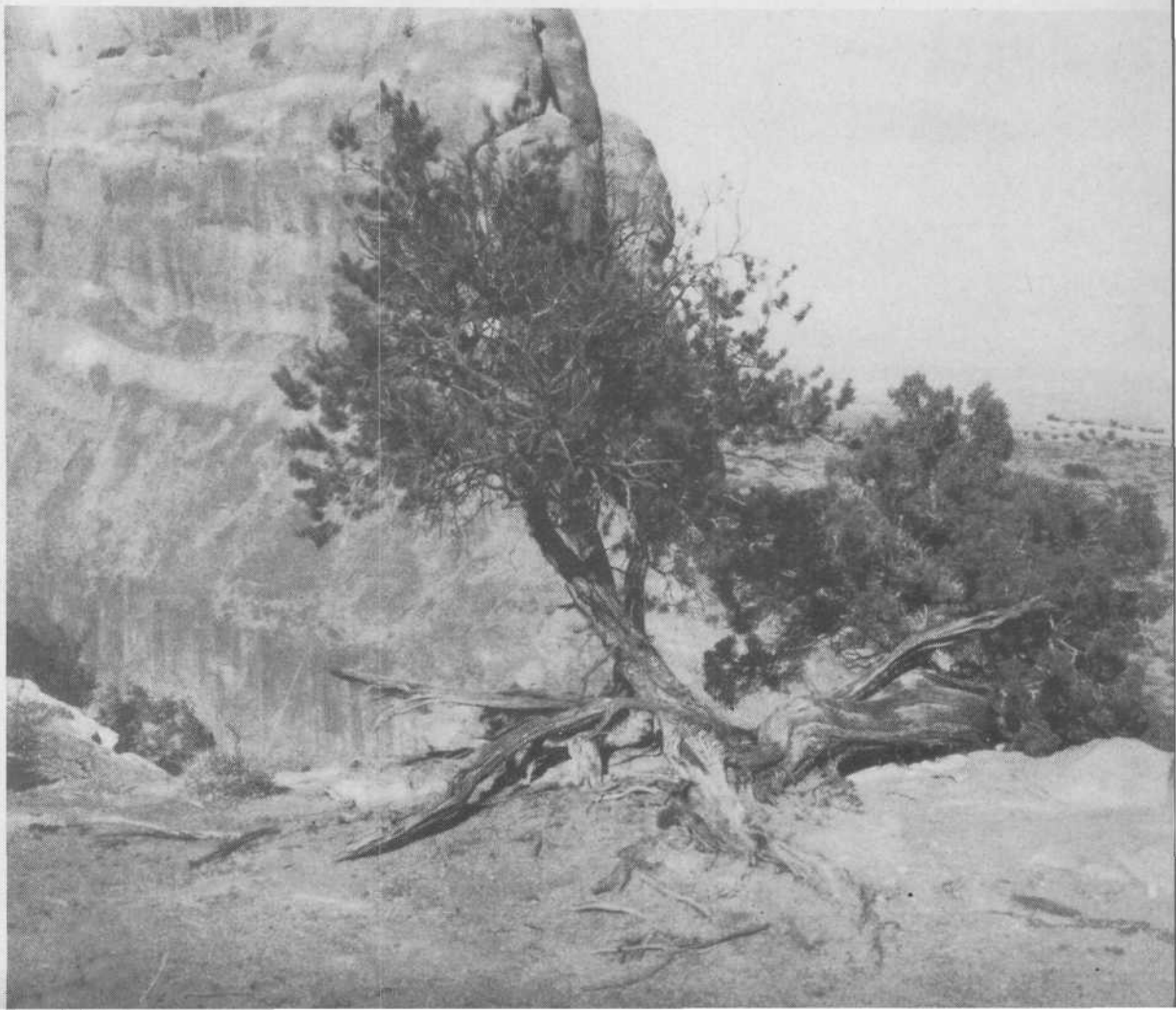
They persevere in an environment that is not always kind. That alone makes them worthy of notice and makes them beautiful.

The Navajo Indians believe that the juniper tree is the tree of life, for it is sometimes the only living tree to be found in the hot, burning desert. They have the ability to survive where nothing else can or will.

From a distance, their twisted appearance is very ornamental, and they are decidedly breathtaking when spectacularly perched on the edge of a cliff with no apparent support. And when covered with snow in winter, they sparkle and illuminate themselves as rays of sunlight reach out and touch them.

The junipers also provide another form of beauty that is forever. If it were not for the squirrels of the desert, who work at surviving each day, this may never have come to be. With their sharp teeth, the squirrel makes a hole in the large end of a berry. At the same time, the hull is removed. As the squirrel removes and eats the tiny inner seed, he leaves behind the hulled outer casing of the seed. The Navajo Indians gather these outer casings and by poking a hole in the small end, they string the casings and create unusually fine jewelry.

Next time, when traveling through the desert, give some thought to the juniper trees you will see. Don't see just a tree. See instead, a life that is determined to survive, and while surviving, is providing additional beauty to a land that abounds in beauty. □



A gnarled and twisted juniper crowning the edge of a sandstone cliff.

Summer Ceremonials on Puye Mesa

by RUTH ARMSTRONG

Opposite: About a half dozen tribes take part in the ceremonies, performing many different dances and lasting two days. Photo courtesy Albuquerque Chamber of Commerce.
Left: The colorful dancers on top of Puye Mesa give photographers a rare opportunity to photograph authentic dances and costumes in a spectacular mountain top setting. Photo by Ellis Armstrong.

THE LAST week-end in July each year the Santa Clara Indians of New Mexico return to their ancestral homes on Puye Mesa in the Jemez Mountains, and host two days of spectacular dances where visitors have the rare opportunity of photographing the ancient dances and brilliant costumes of several different tribes in a setting of outstanding scenic beauty.

At most ceremonial Indian dances photography is strictly forbidden, but because this is a social event with several other Indian tribes participating, and is not a religious event, the rules are relaxed. The program varies from year to year, but one year we saw the Belt, Buffalo, Bull, War, Blue Corn, Rainbow, Corn Grinding, Rain, Butterfly, Harvest, Basket and Morning and Evening Dances in two days. The Rain Dance, incidentally, is still strong medicine. We have never yet attended the dances at Puye when there weren't thunder showers.

An open market surrounds the plaza where other tribes sell pottery and jewelry, and it's always more fun to buy directly from the craftsman. Some of the better craftsmen usually attend this event, because Indians, like almost everyone else, love a party. Santa Clara is best known for its black and red pottery which is in collections all over the world, but you're also likely to find pottery from Acoma, Jemez, San Juan or San Ildefonso, and jewelry from Santo Domingo and Zuni.

As you approach Puye Mesa you can see that the face of the cliff is pock-marked with dozens of caves. The plateau is composed of compressed volcanic ash, in which wind and water have eroded natural caves. Prehistoric Indians found shelter in these, and in time also built houses along the base of the cliffs,using the caves as additional rooms. The "talus" houses are only piles of rubble now, but the caves, with their smoke-blackened ceilings, look as if their inhabitants moved away last week instead of five to eight hundred years ago. Petroglyphs, prehistoric carvings, are scattered the length of the mesa.

The dances take place on top of the mesa in a plaza surrounded by ruins of an ancient pueblo where 2,000 people once lived. The two- and three-story pueblo was abandoned somewhere around 1500 or 1600 A.D. Only a small part of the ruins has been excavated, and you actually sit on the ruins to watch the dances. A road goes to the top of the mesa which is covered with juniper, pinon and some pine trees. A short distance from the plaza booths are set up by the Indians where chili, Indian bread, coffee and hamburgers can usually be bought.

A good way to make the history of these ancient people come alive is to read *The Delight Makers* by Adolph Bandelier, which puts flesh on the bodies and thoughts in the minds of the Tewa tribes that inhabited the entire area from around 1000 to 1500 A.D., give or take a century. They were ancestors of many of the modern Rio Grande Pueblo Indians.

Just as spectacular as the dances and costumes is the view from Puye Mesa. Mountain ranges are in all directions, and you feel as if you are up in the clouds too, though the elevation here is only

Above: Headquarters building at the entrance to Santa Clara Canyon and the Puye Cliff Dwellings. Below: There are four small lakes up the canyon with nearby campgrounds. In dry years the lakes may not have much water in them, since they are made by dams on Santa Clara Creek. In wet years trout fishing is good, and the camping fee included a fishing permit. Photos by Ellis Armstrong.

around 8000 feet. The thin, clean air makes the sunlight brighter and pine smells sharper. The beat of the Indian drums is loud and strong, vibrating through the ground, up your legs and into your body. The monotony of the chants hypnotizes you until the drum beat and your heart beat are one. You feel you know the people who once lived here. You understand why they chose to live in this beautiful place, and how they must have loved it. And you feel a twinge of sadness that they found it necessary to go down to the valley so they could raise more food to feed more people. But you are happy that they care enough about their ancestral homes to return here each year for a beautiful ceremony.

Puye Mesa is part of the Santa Clara Reservation, and is reached by driving 15 miles north of Santa Fe on U.S. 84, then west on N.M. 4 about eight miles to N.M. 30, then north five miles to a sign that directs you to the Puye Cliff Dwellings. This road continues past the cliff dwellings another three or four miles to a recreation area where the tribe operates campgrounds. Trout fishing in the stream and four small man-made lakes is permitted, though the fishing isn't usually spectacular. The campgrounds are in small meadows or beneath the pines along the stream. If you're not a camping family, however, there are many good motels in Santa Fe, 35 miles away, and one of two good ones in Espanola just three miles on up N.M. 30.

Even without the dances at Puye, the trip to the ruins on this mountain mesa is worthwhile, but if your trip falls on the fourth weekend in July, you will have an experience not soon forgotten. □

CAMPING INFORMATION

Camping at any of the four small campgrounds in Santa Clara Canyon is $3 a night. There are no hookups but there are primitive rest room facilities. The fee includes the permit to fish in the lakes. Photography fee at the ceremonials is based on the size and type of camera, but is quite reasonable.

For further information you may write directly to Gov. Paul Tafoya, Santa Clara Pueblo, New Mexico.

FOLLOWING THE BR

HISTORIC OLD MINING TRAIL BACK WAY TO COLORADO RIVER

FOR TWO CENTURIES, Indian runners carrying Spanish dispatches, mule trains, horse-drawn wagons, freighting wagons and, more recently, off-road vehicles, have traversed a network of rocky and sandy canyons through lonely passes beyond often-dry springs between coastal Southern California and the Colorado River to Arizona — known optimistically as the Bradshaw Road.

It's no road, and William D. Bradshaw didn't really pioneer it, although a new book closely links the 49er from North Carolina with the track. *The Bradshaw Trail*, by Francis J. Johnston of Banning, has been published by Riverside County's Historical Commission Press as a belated but important contribution to the nation's bicentennial celebration. (See book review page 6.)

Originally the route headed east from San Bernardino up San Timoteo Canyon to Cherry Valley, Beaumont and eastward through the San Gorgonio Pass via Banning, Cabazon, the Whitewater River to Agua Caliente, now better known as Palm Springs.

From there, the sandy trail led southeast past Indian Wells, the present-day Torres-Martinez Indian Reservation and the Salton Sink of Dos Palmas. The route then headed more or less straight east through Salt Creek Canyon by Canyon Spring, Tabaseco Tank, the Chuckwalla Spring region, present-time Wiley Well into the Palo Verde Mountains and eventually to the old mining camps of Ehrenberg and La Paz.

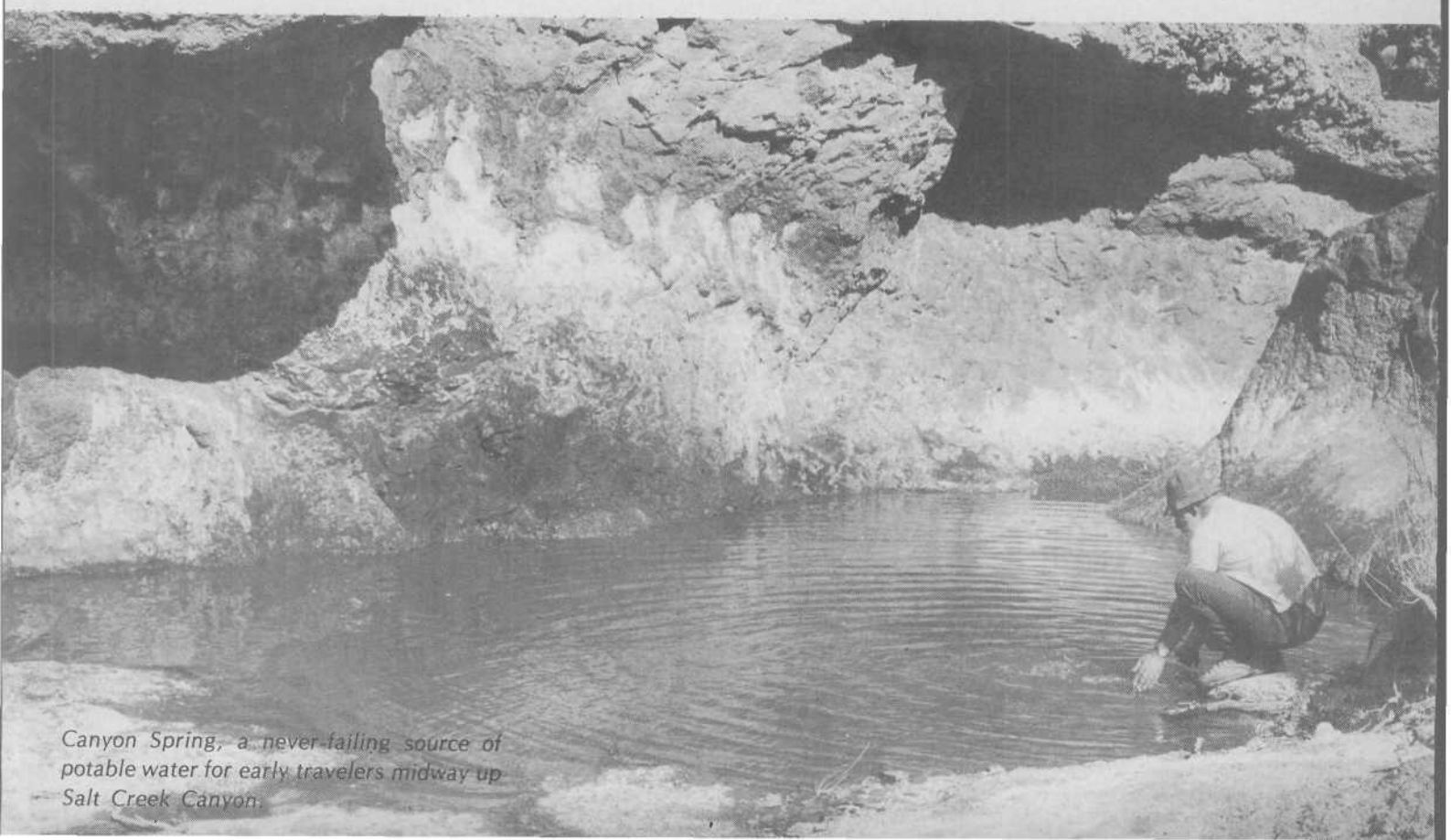
Today, the route is invisible west of Dos Palmas but the traces from there east are strong and often highly visible.

Johnston noted that the trail lost favor after the Southern Pacific Railroad pushed through the desert in 1876-1877, but current users of off-road vehicles tend to deny that assumption. Except for the middle of summer, the Salt Creek trail is well traveled on an almost daily basis.

The revival actually began during early World War II when General George S. Patton's armored legions swarmed over the entire Colorado Desert and much of the southern Mojave on training sweeps. Their tracks still show vividly in the Orocopia and Chuckwalla Mountains south of Interstate 10 and many of the soldiers — and their four-wheel-drive vehicles — returned after the war to start the present off-road travel boom.

Actually, the Salt Creek route for a time had been proposed as an all-year highway shortcut between the Coachella and Palo Verde Valleys but a shorter and easier route through Box Canyon east of Mecca to Desert Center won the informal competition in the early 1920s.

The late Randall Henderson, founder and longtime editor-publisher of this



Canyon Spring, a never-failing source of potable water for early travelers midway up Salt Creek Canyon.

This gap in the rocky wall of Salt Creek Canyon is now nearly impassable due to repeated flooding.

ADSHAW ROAD

by BILL JENNINGS

magazine, described the road search in an article, "Waterhole on the Old Bradshaw Route," that appeared in the January, 1947 issue.

Henderson recalled his first auto trip along the route in 1920 with a group of Blythe residents scouting for the new road. He had not retraced his trip until 1946 when he camped at historic Dos Palmas, site of a Civil War-era stage station and setting for the unsolved murder of Herman Ehrenberg.

Ehrenberg's grave is still at Dos Palmas, although the stone marking the spot had been removed between this writer's 1950 and 1977 visits. The area is posted private property.

Ehrenberg was an early surveyor, mining prospector and Indian Agent. He was shot to death at Dos Palmas Oct. 18, 1866. Johnston's version of the tragedy differs from Henderson's earlier account but it is usually agreed it was robbery. Ehrenberg carried upwards of $3,500 in gold dust, some say, and his killer or killers got it all.

The grave and the now totally-obscure Dos Palmas stage station site are on private property, just a quarter-mile south of the All-American Canal service road that offers a usually well-graded detour around the Bradshaw route through the Dos Palmas marsh just east of the Salton Sea.

This is as good a place as any to begin a modern re-creation of the old Bradshaw. West of Dos Palmas the only trace of the original route is the Whitewater stage station, just south of the rest stop on the eastbound lanes of Interstate 10, two miles east of the junction with State Highway 111. Everything else is either buried under new roads, subdivisions or has long since been plowed up as farmland.

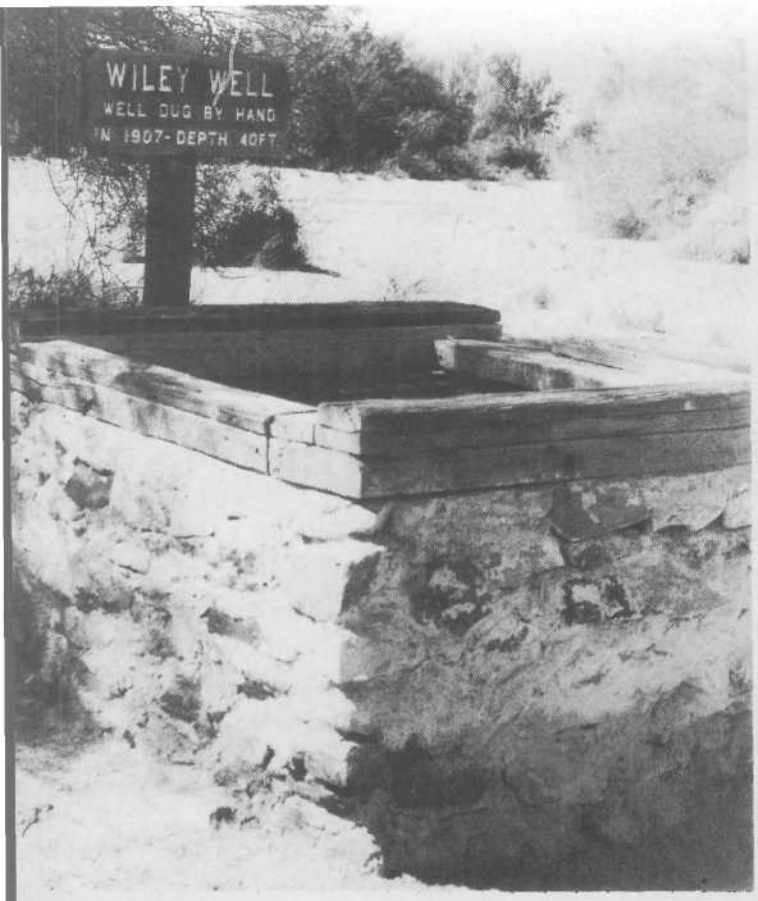
Today's Bradshaw starts inconspicuously enough as Parkside Drive, east from Highway 111 at the main entrance to the Salton Sea Recreation Area.

This public park and fishing mecca also is a likely place for an overnight camping spot for motorists attempting to re-establish the Bradshaw route. It boasts good campsites plus a brand new interpretive center and is adjacent to the last gas stations along the Bradshaw until you reach Ripley, 85 miles to the east.

Parkside is paved two miles east of the highway and halts abruptly at an unmarked T-intersection. The left fork takes you to the Coachella branch of the All-American Canal and the right fork eventually becomes the powerline road that can be followed southward to Niland, if you like powerline roads.

From the canal bank, which you reach near Siphon 30, you travel southeasterly eight miles to the beginning of Salt Creek Road, at Siphon 24. The siphon system on the unlined canal permits the Colorado River water to pass under flood channel washes. The numbers increase northward from the junction with the main canal east of Holtville.

The land along the canal is posted against trespassing by the Coachella Valley County Water District but pass-



Wiley Well, at the junction of two historic Colorado Desert roads, is now a public campground maintained by the U.S. Bureau of Land Management. Well was dug to serve ranches and later-day travelers past the heyday of the Bradshaw Road. It is now dry.

age on the graded road is not restricted.

At Siphon 24 the route crosses the canal and heads steeply up the Salt Creek wash along a rocky path that should be traveled slowly to protect the vital underparts of your vehicle. Warning! There are few turnouts along the boulder-strewn road and passing is precarious. For safety, let the westbound or downhill vehicle swing out. This is no road for sissies or low-slung sedans.

It gets worse some three miles east of the canal when you pass over the Kaiser Eagle Mountain railroad and enter the wash proper. Here soft sand replaces the rocks for the next eight miles.

Two miles east of the rail crossing the route passes under the Kaiser Salt Creek trestle, a frequent camping place for groups. From this point on to the junction with the Salvation Pass road, about 38 miles, the road skirts the northern and northeastern boundary of the U.S. Navy's Chocolate Mountain Aerial Gunnery Range. Stay to the north of the frequent signs along this border or expect to answer a trespass charge in an Imperial County justice Court!

A short mile beyond the trestle the road passes historic Clemons Well, long-since dry, now fenced and marked with a sign, both courtesy of Kaiser Steel. The well was drilled after the mining boom ended and was primarily used by mining freighters enroute to and from mines and mills in the Chuckwallas. While historic in its own right, the well is not part of the Bradshaw legacy.

Another 1.7 miles or thereabouts upstream you will pass the unmarked site of Canyon stage station, on your right. Until 30 years ago or so the rock walls were plainly visible on the bank above the stream bed but the big floods of 1965, 1969 and 1976 removed all traces of the little rest and team-changing station.

At this point, however, watch carefully for tracks leading left, across the wash, with a small hill as your landmark. This is the entrance to Canyon Springs wash, a side trip of less than a mile and well worth your time. For many, this is the best overnight camping site along the Bradshaw west of Wiley Well, almost 50 miles to the east.

Wiley and nearby Coon Hollow offer improved campsites, with good well water, provided by the U.S. Bureau of Land Management, but many still prefer Canyon Spring, improved only to the extent of an occasional Kaiser railroad tie left behind by another camper. Be warned, these are excellent firewood but they are heavily creosoted, so don't sit downwind!

Canyon Spring is a major gathering place for rockhounds in this region. Experts say there are bloodstones and other gem-quality rock on the slopes above the always-filled pools, but the writer is no rockhound so don't take his word for it.

The spring is salty and unpalatable, as attested by the heavy alkaline incrustations below the two small pools. But in more than 30 years, the writer has never found the well dry and it therefore is a worthy emergency supply, for radiator and stomach.

Above the Canyon Spring turnoff, the main road continues its steady climb along the iron-ore railroad, which accounts for the generally well-graded condition of the historic route. Just four miles east of the spring side canyon the motorist has a choice. The left fork, or main road continues along the railroad 10 miles to Interstate 10 midway between Chiriaco Summit and Desert Center. If you enter Bradshaw country this way, look for. the Red Cloud Mine Road off-ramp, nine miles east of Chiriaco Summit.

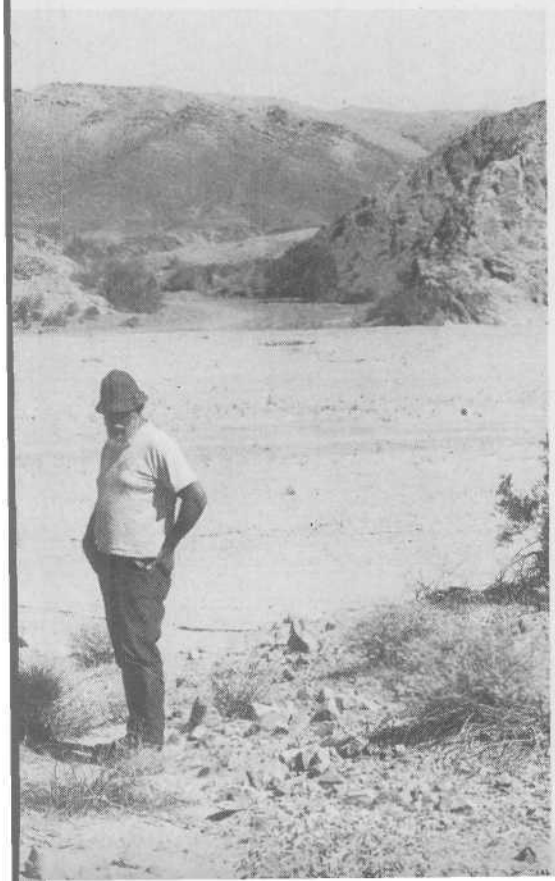
No trace remains of the Canyon Spring stage station in Salt Creek Canyon, but this mound of rocks on the approximate site may be an old grave. Gap in hills opposite is mouth of side wash containing never-failing Canyon Spring in Orocopia Mountains.

The right-hand fork crosses the tracks at an unmarked junction and heads southeasterly along the gunnery range boundary. This is the approximate route of the old Bradshaw and is graded for the first leg to Tabaseco Tank, marked by a well shot-up Auto Club road sign, about 3.5 miles.

The writer always hedges when giving mileage between points in the off-highway regions because of the discrepancy among car speedometer and odometer readings. Your tire size, inflation and speed make a decided difference at times.

This traveler depends on topographic and Automobile Club of Southern California maps for directions, terrain and mileage figures, respectively. To cover the Bradshaw from Salton Sea to the Colorado River you will need the following 15-minute series U.S. Geologic Survey topo charts: Cottonwood Spring, Hayfield (or Canyon Spring, old series), Chuckwalla Mountains, Iris Pass, Chuckwalla Spring, and Palo Verde Mountains. The Auto Club's Riverside County map is a worthy companion as well, although it shows great gaps in the old road alignment east of the railroad tracks particularly.

Tabaseco Tanks are within the boundary of the Naval range, with a warning sign just south of the main road to remind you. Years ago, before the Naval boundaries existed, this was an excellent place to see desert bighorn sheep on occasion. Nowadays they are very scarce, just as desert mule deer, which the author recalls vividly, bounding away from Canyon Spring on an earlier visit, circa 1949 or 1950.



From Tabaseco easterly the road skirts the navy boundary past the gas line road, 3.5 miles, past the Augustine Pass road, another 13 miles and nearly to the junction with the Beal Well road, as the old Niland-Blythe "highway" was called a generation ago.

At this point, eight miles east of the Augustine crossing, the motorist has another choice. Northward across Graham Pass is an alternate route to I-10, albeit a very rocky and sometimes barely passable 20 miles. This area was the setting for this year's Fast Camel Cruise — an annual off-road jaunt sponsored by the Sarrea El Jamel four-wheel-drive club of Indio.

Graham Pass is also the center of a historic mining area that played out early in this century. The jeep run, as might be expected in this contentious time, drew protests from environmentalists but the writer found few signs of destruction along the old county road through the Chuckwalla and Little Chuckwalla ranges a week after the run.

From the Beal Well road junction it is another short span, about three miles to the Salvation Pass road. In this area, the Bradshaw track blends with several other roads, including one of General Patton's tank trails. The only safe advice is to follow the heaviest-used route and stay heading generally east. You begin to bear more to the north just east of this junction, along the south slope of the Little Chuckwallas.

It's another 14 miles to Wiley Well, and if you have tired of the ruts, the washboard and endless dust, this is a good place to pack it in and head for the freeway, just nine miles to the north. On our pre-run the writer and photographer merely made a first-hand check easterly through the Mule Mountains to Avenue 30, seven miles southwest of Ripley, and headed back to our overnight camp at Canyon Spring.

Dos Palmas oasis near the Salton Sea is now under private ownership as explained by this unvandalized, official-appearing sign. Site of a Bradshaw Road stage station, the old spring now contains upwards of 50 palms instead of original two

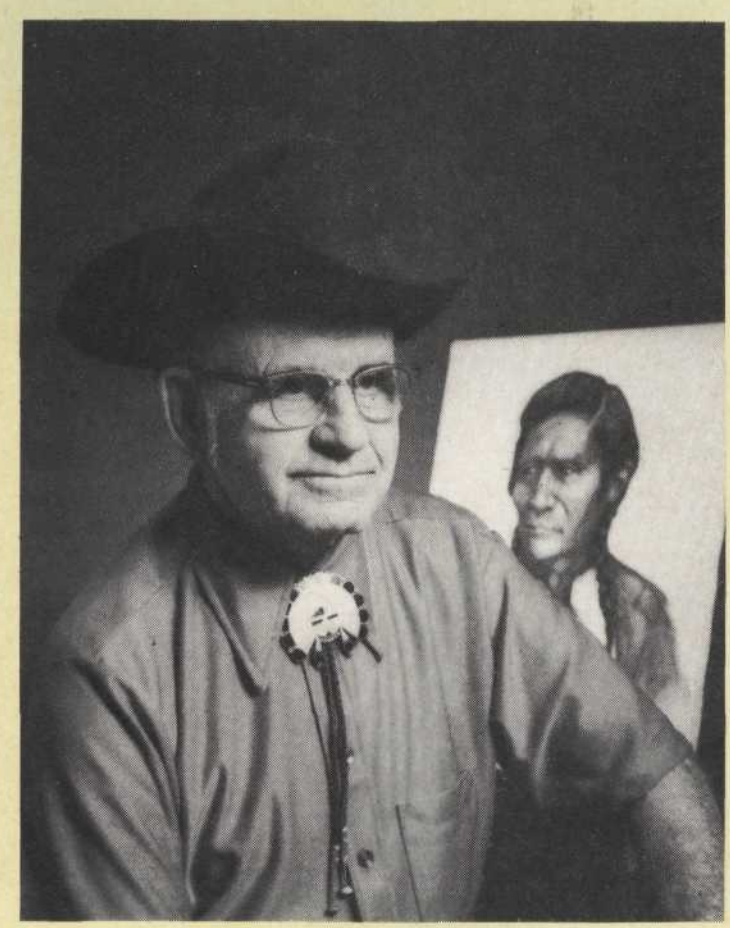
Wiley Well Junction, however, offers more adventure to the traveler. It is a crossing with one of Patton's major supply and training routes, the old Milpitas Wash trail that heads southeasterly past Coon Hollow to State Highway 78 near Palo Verde, 22 miles to the southeast. This is also a shortcut to Walter's Camp and other Colorado River fishing and boating haunts.

Several old mines dot the ridges on all sides of Wiley Well, which was originally a county-drilled oasis on the old Blythe-Indio highway. Until recent years, Wiley Well was the winter home for a colorful group of squatters, mainly retired miners and desert denizens. Current BLM regulations restrict the length of stay and impose other limitations on all-winter campers.

The Bradshaw route is generally usable by high-center two-wheel-drive vehicles as well as all sorts of four-wheel-drive rigs, but it's a good idea to check the route in advance before venturing east of Dos Palmas or west of Wiley Well in conventional vehicles.

The only safe drinking water on the entire 90-mile run between the Salton Sea and Blythe can be found at Wiley Well and Coon Hollow. Canyon Spring, Chuckwalla and Chuckwalla Well are doubtful sources although all three were used during stage and freight wagon days a century ago. □

"Tarahumara Children"
20"x16", Oil,
Desert Magazine Collection.



Charles S. La Monk, A.I.C.A.

LaMonk
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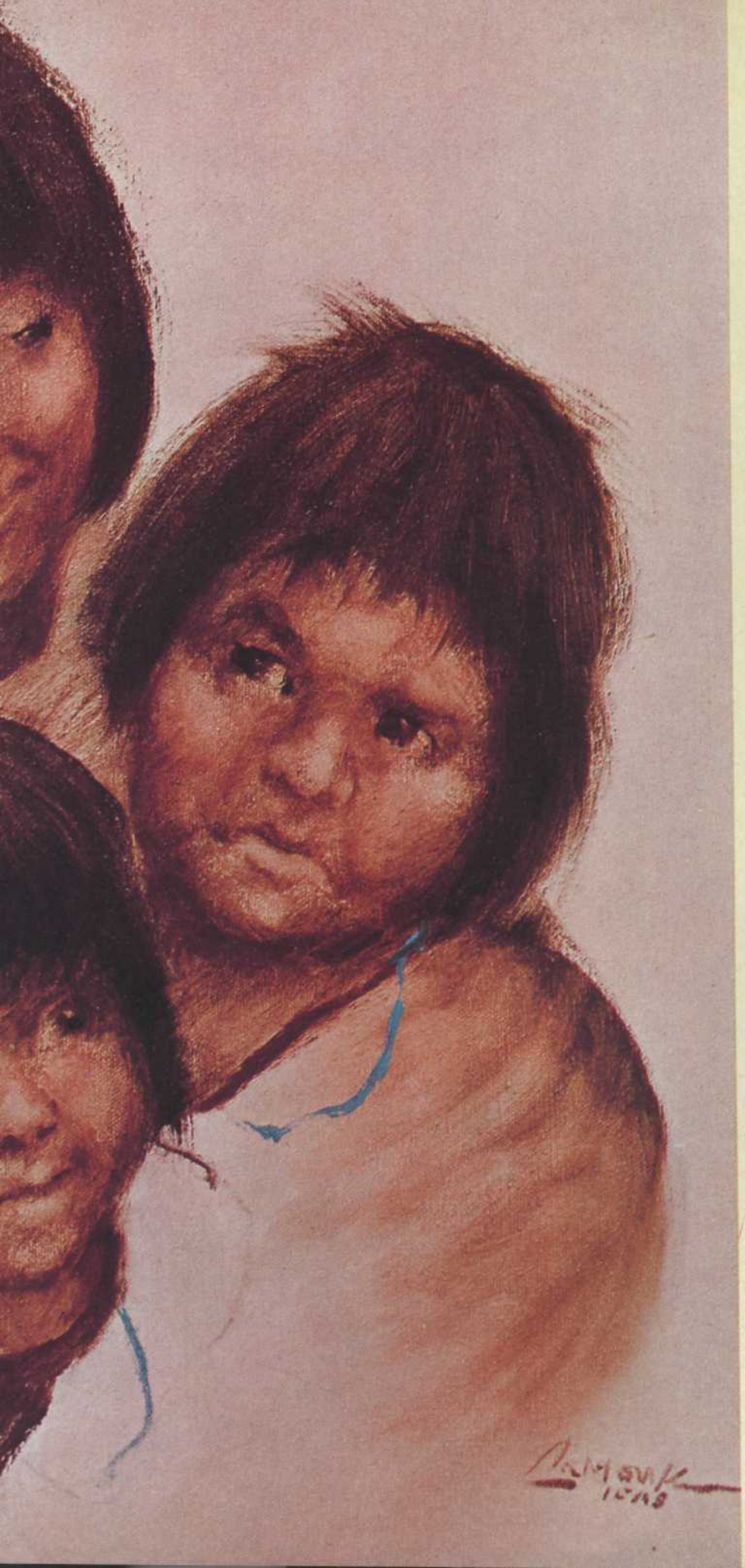
Petroglyphs, Pictographs and Portraits

by BILL KNYVETT



NO MATTER what line of work a person pursues, success depends greatly on the enthusiasm and dedication or drive of the individual. Artist Charles La Monk, of Palmdale, California, is a worthy example of these qualities.

He has two channels for his dedication. First, the recording and preserving of Indian rock writings (petroglyphs and pictographs), and secondly, the portraiture of the Tarahumara Indians of Mexico.

La Monk's renderings of rock writings involve on-site study and most well-preserved petroglyphs are very inaccessible, requiring considerable hiking. Using eroded sand and rock, he applies it over a white lead base building a realistic facsimile of a chosen petroglyph.

The pictographs are painted on a simple base, using a frayed deer hide on a one-half inch wide stick some four inches long. By experimentation he found this ideal to produce the strokes and dots of the ancient rock artists. Little wonder that with his great interest in Indian art he was drawn to the primitive tribe of Tarahumaras that inhabit an almost inaccessible area.

His love for the Tarahumaras has led him on many, many trips to the fortress-like barrancas of Mexico. I asked him why he chose this obscure tribe to preserve on canvas and his answer gives an insight to the kind of man he is.

"If I can show in my paintings of these American Indians a bit of the background of their lives, by the expression in their eyes, their gestures, or capture that haunting, emotional quality so often seen in them, then my efforts are not in vain.

"Fortunately, the majority of Tarahumaras have retained their Indian identity. They are closely linked with the ancient past and possess those wonderful facial qualities that moves and inspires the portrait painter.

"Long ago, as a boy living on a ranch in western Wyoming, I saw on occasion small bands of mounted Indians traveling through the mountains or plains. They were picturesque, graceful in the saddle, so in harmony with the environment. What a thrill for this boy! I

"Inyo County, California Petroglyph,"
24"x30",
Oil and natural sand.

longed to ride with them. Those days are gone. A few artists and writers witnessed it, recorded what they saw and made a valuable contribution to Western Americana.

"The Tarahumara's stone age life style will change now that their land has been declared a Mexican National Park. An influx of tourists from all over the world are entering the area. I shall document them as I see them, not polished or sophisticated. Just small transcripts from life as seen through an artist's eye."

"Small transcripts," indeed! Working in earthy tones, his portraits come to life from the lined oldsters to the shy, downcast looks of the youngsters.

"Tarahumara Child"
14"x11", Oil.

"Tarahumara Trio"
20"x16", Oil
Desert Magazine Collection.

Charles, who is a member of the American Indian and Cowboy Artists Society, has paintings on display at the Los Angeles County Museum of Natural History; Southwest Indian Museum, Los Angeles; Palm Springs Desert Museum; the Early Man Research Center in La Verne, California, and The Desert Magazine Art Gallery in Palm Desert, Calif.

He has had invitational shows at the Museum of Man, San Diego; Herd Museum, Phoenix; University of Arizona, Tucson; University of New Mexico; Denver Museum of Natural History; and numerous other universities and state colleges. □

"Tarahumara Family"
20"x16", Oil.

"Tarahumara Mother"
20"x16", Oil.

TRACHYTE CREEK

by DALE MAHARIDGE

EVERY ONE of 186-mile-long Lake Powell's countless hundreds of remote slickrock side canyons is totally different and unique than any other one in the sprawling redrock recreation area of southern Utah—like fingerprints, no two are exactly alike. They can differ in character and be as close as one mile apart. Some are desolate dry washes that only contain water during rare thunderstorms in the form of furious flash floods. Others are open and wide, ending in lonely box canyons that are accessible only to lizards and mountain lions. A very few—the exceptions—are well-watered edens, isolated paradises that invite casual exploration by investigative hikers.

One of these exceptions is Trachyte

Creek Canyon. It flows from its source in the lofty Henry Mountains south into Lake Powell about eight miles below the present location of the Hite Marina. This interesting canyon can easily be reached from Lake Powell—or by hiking into it, following the deepening canyon from its juncture with Utah 276, a paved road that leads south from Utah 95 to the Bullfrog Marina further down on Lake Powell.

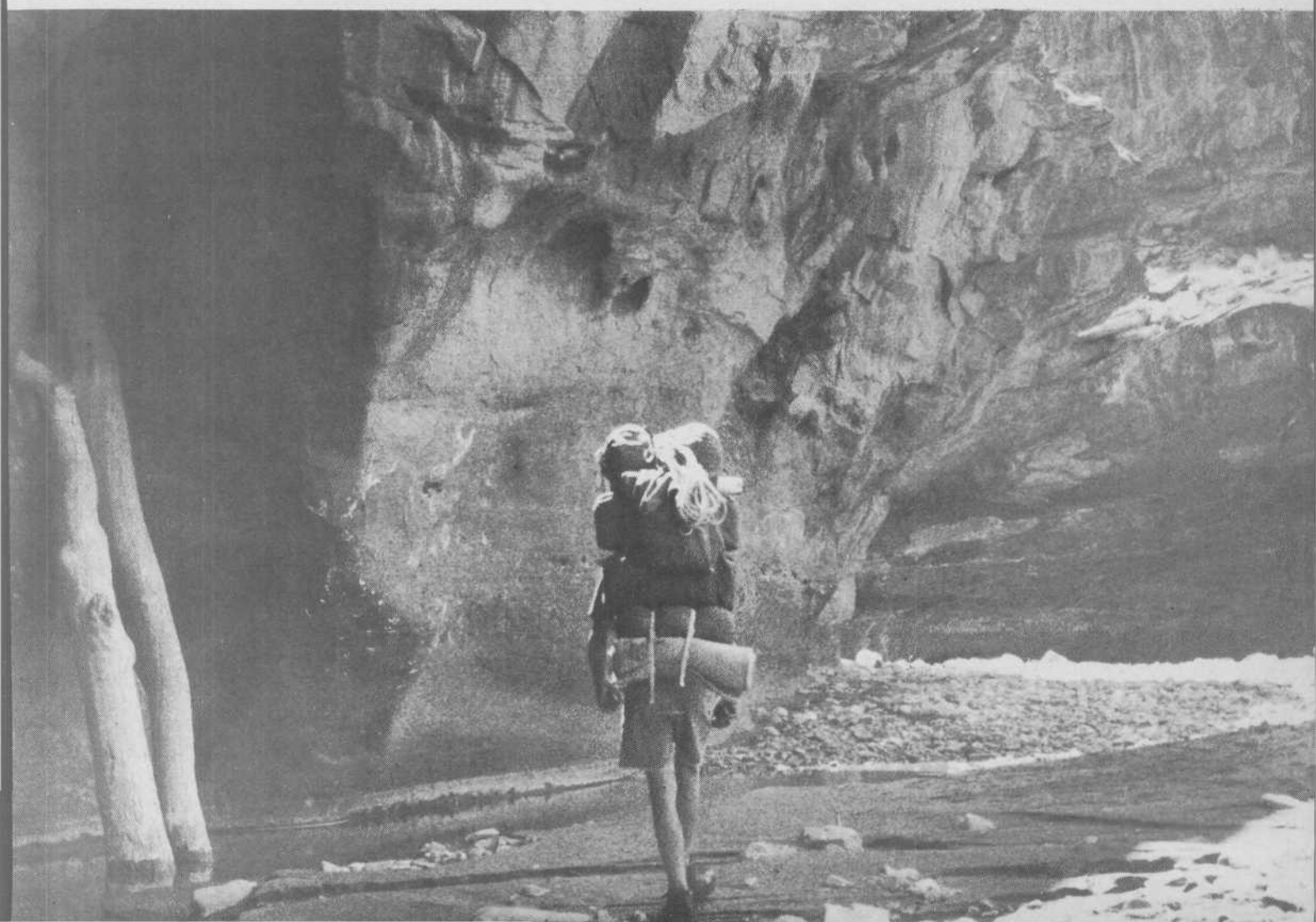
Visitors to this watered canyon can find shaded groves of cottonwood and tamarisk-studded sandbanks nestled in rocky alcoves that offer plenty of excellent campsites. The rounded, unscalable red canyon walls are splashed with the electric purple hues of ancient desert varnish, and are broken only where occasional side canyons enter. Hikers can explore these invitingly narrow branch canyons that snake back into the rimrock and end in huge, vaulted amphitheaters that usually have dozens of dripping, tinny-tuned springs harboring miniature jungle-like gardens of maidenhair ferns at their bases. In Swett Creek, a large tributary canyon in the lower reaches of Trachyte, is the sphinx-like towering butte called Hoskinnini Monument—an easy, worthwhile destination to see.

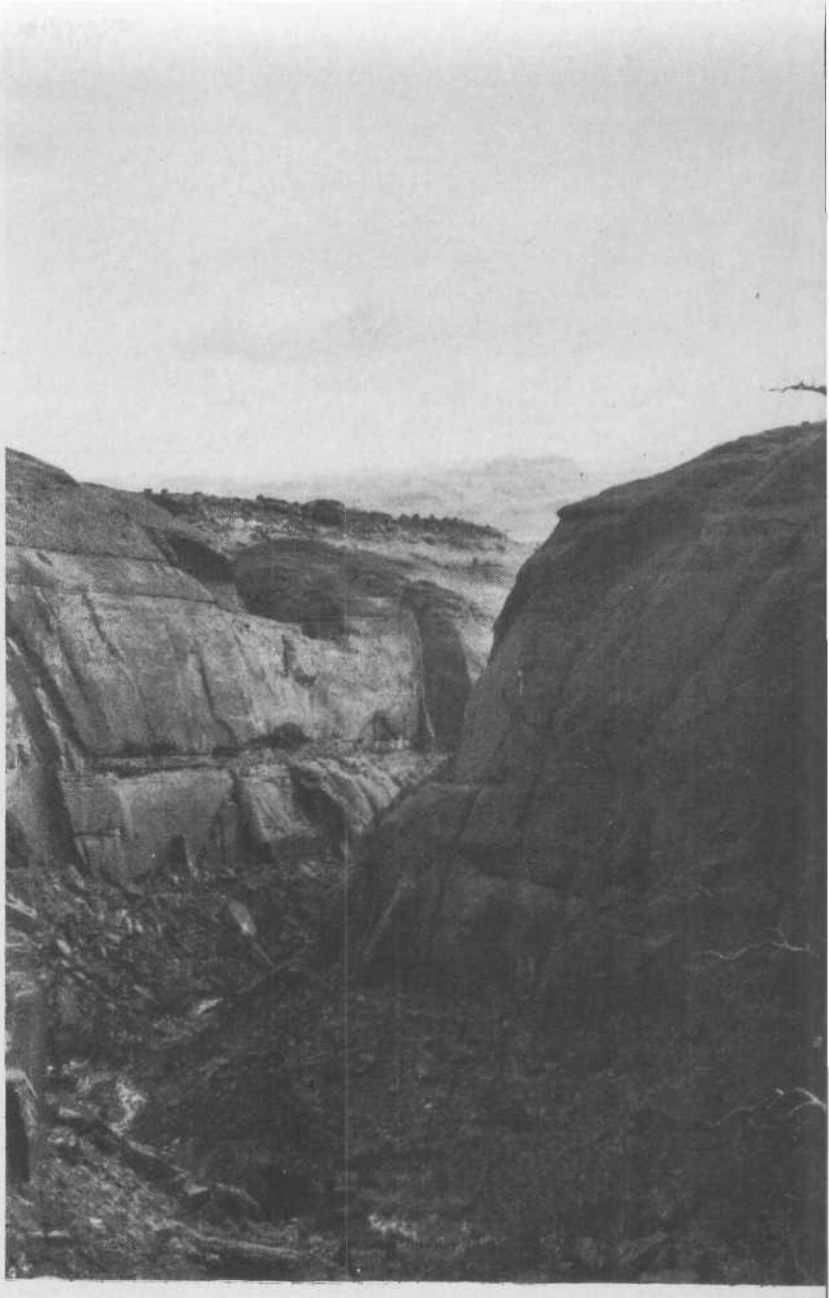
Trachyte Creek was named by the first white men to see it, a group of Major John Wesley Powell's men. They had already come down the Green and Colorado Rivers from Wyoming, on Powell's second river trek in 1872, and were spending the winter in Kanab,Utah, before continuing down through the Grand Canyon. Making use of their idle time, they searched for an overland route from Kanab to the mouth of the Dirty Devil River where they had hidden a boat to float down Glen Canyon. On June 20th, after having crossed the Henry Mountains, they reached a small canyon that they had thought to be the present-day North Wash. Realizing their mistake, Professor Thompson (leader of the expedition) decided to christen it Trachyte Creek, according to Frederick Dellenbaugh in his historic book, *A Canyon Voyage*, that gives an excellent account about his participation on the second Colorado River journey.

Later, the canyon served for a short period of time as a wagon route from Hanksville to the old settlement of Hite on the Colorado River.

Trachyte Creek begins high up in the Henry Mountains as a series of small washes in between the 11,000-foot summits of Mount Pennell and Mount Hillers. It doesn't form much of a formidable canyon until after it crosses the Bullfrog road and turns south toward Lake Powell, where it incises its way into a deep trench as it circumvents the very rugged and southernmost range of the Henry Mountains known as the "Little Rockies"—Mount Holmes and Mount Ellsworth—so called after their fierce

Left: The sphinx-like form of Hoskinnini Monument awaits hikers who venture up Swett Creek, a tributary in lower Trachyte Canyon. Below: Towering canyon walls overshadow hikers in Trachyte Creek Canyon. Sandbars and cottonwood groves offer plenty of ideal campsites.





Sweet Creek, above Hoskinnini Monument, overlooking the maze of canyons of Trachyte Creek in the distance.

and impregnable disposition on their eastern flanks.

The Henry Mountains were the last "discovered" range in the United States. They extend south of Hanksville to Lake Powell, ending in the Little Rockies. Much of the Henry's wilderness character has been lost through the building of roads through the heart of the mountains, but some official protection has finally been given to at least a portion of these strange desert mountains. Recently, the Little Rockies have been set aside as the Henry Mountains National Natural Landmark, preserving for all time at least a significant section of these rugged peaks. The boundaries of the newly created area extend from east of Utah 276 to the edge of the Glen Canyon National Recreation Area, and from the north on Swett Creek to the southern flanks of Mount Ellsworth.

The National Park Service, which administers the Glen Canyon National Recreation Area that encompasses all of the desert land surrounding Lake Powell, is considering adding much of Trachyte Creek for inclusion as wilderness under its jurisdiction. Their proposal would cover approximately 16,000 acres, extending from Ticaboo Canyon north to Trachyte Creek.

The streambed of Trachyte is littered with cobblestone-sized, water-polished igneous boulders, a stark contrast from what you would expect to find in a sandstone canyon. This oddity is a result of the laccolithic nature of the Henry Mountains—that is, they were formed when rock layers from deep within the earth broke through the Mesozoic sedimentary surface strata thrusting the mountains skyward—thus exposing the blackened cinder-colored rocks to ero-

sion. As the mountains have been broken down, they've deposited the weather-rounded boulders in the canyon bottoms.

The most convenient access point to the canyon for a casual visitor is from Lake Powell. Hikers have only a short distance to walk to reach Swett Creek, which enters from the western side of Mount Holmes. About one mile up Swett Creek, past turquoise-tinted waterfalls, is Hoskinnini Monument—formed where three small canyons come together in one place. The monument is a needle-like spire that from certain angles looks like a sphinx, and from others, a giant winged gargoyle. The canyons above the monument are especially rough as they are chock full of car-sized slabs of rock fallen down from the steep mountainside. Lake Powell has yet another 40 feet to rise above its present elevation of 3,660 feet from sea level. When the lake reaches 3,700 feet, the mouth of Sweet Creek will be inundated.

The side canyons that flow into Trachyte from the east almost extend to the rim of the 1000-foot cliffs of North Wash. Most of them are passable only for a short distance before you are stopped by cryptic narrow canyon walls that defy entrance—sometimes the convoluting ramparts are so close that you may touch both walls with your outstretched arms. In one unnamed canyon, flash floods have burrowed their way so deeply that this wash occasionally "goes underground" in sections, forming short tunnels and little natural bridges. Other side canyons end in unscalable cirques, or where building-sized rocks have rolled into the main channel, blocking these washes from rim to rim.

Except for cows that are pastured down in the canyon bottoms, Trachyte Creek remains an almost untouched wilderness—a pristine canyon that has been formed over the centuries by the slow but steady action of the endless cycles of wind, sun, rain and frost chiseling away at the seemingly unchangeable sandstones. Here you will find the simple pleasure of casual unhurried walking by day, and the sweet silence of a stellar night, broken only by the chirping voice of tiny Trachyte Creek that will put you to sleep like the singing of a thousand lullabies. □

The Desert Dazzler

by K. L. BOYNTON

Photo by Karen Sausman, Palm Desert, California.

SPLENDID IN HIS jewel-bedecked raiment, the tiny Costa hummingbird puts a sparkle and dash into the desert scene. His is the most beautiful of all costumes, done in greens, his crown with its burnished helmet, his ruff of feathers at his throat shining with iridescent ever-changing hues of violet, sapphire, amethyst and brilliant emerald. Nor is the lady to be outdone. True, she is not so flashily dressed, but still turned out by a most imaginative couturier, her gown of more quiet greens subtly touched with gray or black, with accents of white on certain feather tips. A sight to gladden the eye, these little three- to four-inch bits of fluff and feathers! Revved up and on the go almost every minute, they buzz in from seemingly nowhere, hover in mid-air before a flower, tiny wings but a blur in the speed of their beat. And then . . . the next instant they are gone in a flash of color. Most of their active time is spent on the wing, and in just going about their normal business, they burn energy at a rate some 10 times that of a running man.

Now no desert — the Mojave, the Colorado, and certainly not Death Valley — is any place for so wasteful an expenditure of energy in the face of food and water shortage, high daytime heat and severe drops in temperature at night. Yet, these little hummingbirds select these very same grim and forbidding places for nesting and raising their young. Naturally such a state of affairs is too much for inquiring biologists who have to find out how in the world the birds get away with it.

Ironically, the very thing that demands so much energy — their marvelous flying ability — is in large part responsible for their success. And, as anatomist R.H. Brown points out, it in turn is due to superior body construction and design. So it all starts with the skeleton. First, the hummingbird has a breastbone with a very deep keel, providing a broad area for the attachment of powerful flying muscles. Second, the bony parts of the wing itself are proportioned for high speed, with the upper arm shortened while the lower part and hand are greatly lengthened, thus producing a thin-bladed, narrow-tapered wing. And third, the shoulder joint rotates freely. This means that when the wing is stretched out fully it can be moved backward and forward in almost a horizontal plane, its top and undersurfaces alternately facing downward. Wings beating this way produce an air reaction that is almost vertical which helps to support the bird and makes it possible for it to hover. With a little skillful change in the beats and in the angle of the body, the bird can move forward or as easily backward.

Speed of the beat is naturally important, the flying hummingbird doing about 50 to 75 per *second*. (A pigeon makes about nine, the leisurely vulture only one.) Muscles supply the go-power,

and while it takes many of them functioning together to produce flight, two main ones do most of the work. The first of these provides the powerful down stroke. It originates on the breastbone and connects with the underside of the upper arm of the wing. The second main muscle lies under the first on the breastbone but its tendon part goes through a hole between the bird's shoulder bones and attaches to the top part of the upper arm. This makes a fancy rope and pulley arrangement so that when this muscle contracts on the breastbone, it hoists up the wing.

Now most birds use the powered downstroke much more in flight than the upstroke, and hence in their cases, the muscle that depresses the wing is much larger than the one that raises it. In a robin, for instance, it is about 10 times bigger. But in the hummingbird, who depends on the upstroke to help in hovering, the wing-raiser is relatively enormous. It is almost half the weight of the depressor which is also very large in this tiny bird. Pondering this, Anatomist Savile concluded that there was no reason why these outsized elevating muscles couldn't also furnish a forward thrust about as powerful as the downstroke muscles. So why couldn't the birds use them in level flight too, unless, of course, the flight feathers separated and the wing bent at the wrist which would spoil the action? To his delight, he found that indeed the feather shafts and webs of the primary flight feathers of the hummingbird wing are surprisingly rigid for their size and do not separate under pressure. And the wrist does not bend. The hummer's marvelous powered upstroke, then, contributes to the speed of its flight and is why a hummingbird, hovering before a flower, can suddenly zoom off like a streak of light.

Fueling this jet machine is mainly sugar from flower nectar. The bird's probing bill is excellent for getting deep into a flower cup, and its long tongue designed for nectar slurping. It is protruded from the mouth by muscles connected to the tongue bone, the horns of which are so long they curve up around the back of the bird's skull — a tongue shoving device also shared by woodpeckers. This high suger diet — a quick energy producer — is also bolstered with proteins from insects and spiders the birds find on plants and

small insects they catch in the air. But so high is their metabolic rate they must eat probably 50 to 60 times a day, consuming almost half their weight in sugar alone.

Finding nectar is easier than catching reluctant insects, fortunately. Vivid flowers are easy to locate, the birds shopping by color and the shape of the flower. The sweetness of the nectar offered has to be up to certain standard, too, apparently. What all this adds up to, as biologists Wolf and Hainsworth discovered while looking into the energetics of Caribbean hummers, is that hummingbirds are out to get their money's worth. The cost of foraging for food is so high per unit of time that how much nectar is in the flower is important. The showiest flowers are the easiest to see, a great time saver, and are thus visited most often. Certain flowers are pollinated by hummingbirds and these plants may have evolved a nectar source and cup length best suited to their customers' collecting devices. They thus insure that the hummers will patronize them consistently and, becoming pollen-dusted in one flower, cart it to the next one as they feed.

Incidentally, there's no accounting for hummingbird taste, since the yellow-flowered bladderpod *Isomeris arborea* eclept for good reason the Mojave stick weed, is a favorite with the Costas.

The females sitting on well-insulated nests and the nestlings tucked in tight seem to get along successfully on what they take aboard in the way of food during the day. But the males would run out of fuel if their metabolism were to stay at their daytime rate. What has evolved then to take care of non-feeding periods is a fine system whereby the bird becomes torpid temporarily, thus cutting down on his energy requirements. His breathing rate slows down, oxygen consumption is greatly reduced, and his temperature drops. Zoologists Bartholomew, Howell and Cade, working together on the Anna hummingbird, for example, found that a male weighing some 4.6 gr. with a body temperature of 41C became torpid surprisingly fast when the air temperature around him dropped to 21-23C. Sitting quietly, eyes closed, feathers fluffed out, he seemed hardly alive. Arousal, too, is also very rapid, oxygen consumption increasing, breathing rate stepped up, and body temperature rising so that by the time it reaches about 35C, the bird is active once more. Triggered probably by the central nervous system, a temporary dormancy of this kind is a first-rate energy conserver. The fact that arousal is so rapid in the morning is an added safety factor, for the sluggish bird is up and going before predators get around. Up in time, too, to get into that competition for food which among male Costas involves staking out choice feeding territories and defending them with great determination. The toughest birds have the best floral feeding grounds, naturally, and their defense demands a lot of extra flying to chase out intruders.

Then there's a fellow's social life to be considered. Biologists Miller and Stebbins, checking up on the affairs of the Costas residing in California's Joshua Tree National Monument, reports that there the birds are off to a very early start in the year. By February the domestic hustle and bustle has begun, the main nesting season being over then by the end of May, the birds thus avoiding the intense summer heat.

Courting Costa hummingbird-style takes a lot of energy, for the suitor puts on a big show of stunt flying. Rushing up into the air, he plummets earthward faster, faster, swooping upward just in the nick of time. It's a fine aerial performance, the bird flying his U-shaped arcs always from different points of the compass. Sound effects are included too, high-pitched whistles and hissing adding greatly to the show. Oh, a dazzling sight he is indeed, his jeweled feathers glowing and shining with the changing colors, his ruff spread wide, his tail thrown so jauntily from side to side. Naturally all this is too much for the watching lady to resist and she succumbs to his charms.

But alas! In no time at all the bloom is off the rose. The Costa hummingbird may be a deluxe aerial artist, but he's no family bird. Any nest building and youngster raising that's to be done is up to her. He's off now to tank up on nectar for more high-powered courting, and to continue his fierce protection of his territorial feeding grounds. Biologists, watching such a jilted lady busily prospecting for a nest site with obviously no broken heart, wondered. Was it the stunt flying and the bejeweled raiment of the suitor that dazzled her or — did she really have an eye on the groceries of his private feeding ground? Anyhow, that's where the lady sets up housekeeping.

The upshot of all this is that, in defending his floral nectar bar, the gentleman also defends the nesting female, willy nilly. And he has to divy up the food supply with her, too. However, since the gents with the best feeding grounds attact the most females and get to do the most courting, they may not regard this as such a bad deal after all.

The lady, meanwhile busy with her nest construction, selects plant down and fine shreds of vegetation for its walls, making it about 1-5/8 inches across the top and 3/4 inches deep. She lines it with feathers and covers it with bits of leaves or lichen. The whole works is held together and fastened in place in a cactus or shrub by strands of silken web, compliments of some local spider who, if not fast-footed enough, probably also furnished a protein snack for the nest builder.

Two small bean-size eggs are par for a clutch. What hatches out some 12 to 16 days later are so tiny, so naked and so gray with such skinny black knobs for eyes that they look, as even a bird lover like ornithologist Wheelock had to admit, more like worms than hummingbirds. But Mrs. C gets right onto the grocery detail. Thrusting her long bill deep into the gaping mouths, she delivers a brew of regurgitated nectar and insects, poking and shoving it down the chicks' gullets, and why they aren't stabbed to death in the process, nobody knows.

What with repeats of this at least once an hour and sometimes as often as 25 minutes, she begins to get results. The youngsters grow surprisingly fast and a magical transformation takes place. By the twelfth day, the chicks, covered with greenish feathers but with wisps of down still sticking out here and there on the tops of their heads, at last begin to look somewhat like miniature adults. Ten days later as their wings grow longer, they're ready for their first flight, and then it's just a matter of time before they're off on their own.

Probably the best adapted to desert life of all hummingbirds, the Costas still face the problem of moisture loss through evaporation and in excrement. For these high-powered little birds, there must always be nectar, succulent food and if possible, surface water. These are to be had in the great deserts, and the Costas seem to know exactly where. □

TARAHUMARAS
THE FASTEST HUMANS

YOU MAY have heard of them, but it isn't probable you have seen them at close range unless you have treated yourself to one of the most dramatic and spectacular train trips in North America, if not the world.

We're referring to the Tarahumara Indians who wander the vastness of the Sierra Madre Occidental where it forms the lower spine of our continent as it passes through the Mexican state of Chihuahua.

Usually the Tarahumaras are distinguished among the Indian tribes of Mexico for their feats of running. They have been called the world's fastest humans and in their native language are known as Raramuris, or foot runners.

by JIM SMULLEN

Photos courtesy Charles La Monk.

The huge barrancas, which the Tarahumaras call home, has such inaccessibility that the tribe has been isolated from the crush of civilization.

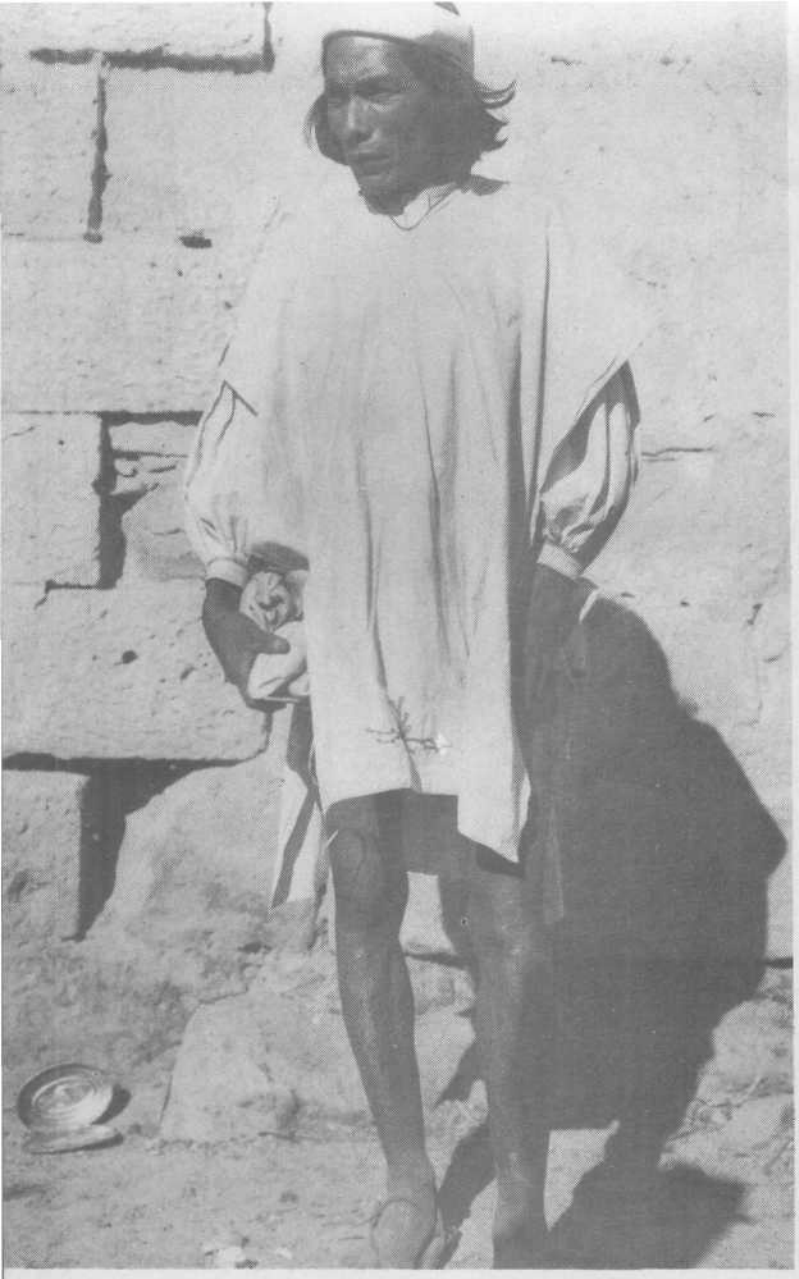
A Tarahumara man, with a typical headband and bloused shirt, presents a rugged profile in a rugged land.

Too often their accomplishments of speed are passed off as unverified myths, perhaps an exaggeration that really doesn't beg for proof.

The home of many of the Raramuris is in the Tarahumara Range of the Sierra Madres and one vantage point for seeing them is at the small town of Creel on the Chihuahua Pacific Railroad. This rail line—a hundred years in the building—bisects the state of Chihuahua from Ciudad Juarez and Ojinaga to Los Mochis and Topolobampo on the Sea of Cortes. In the mountains, it passes through 73 tunnels and crosses 28 bridges spanning gorges that plunge thousands of feet to the canyon floors below. Building the bridge on numerous occasions was declared an impossible venture; it wiped out fortunes in the attempt, was interrupted by revolutions and claimed countless lives. But the road was completed in 1960 by the Mexican Government and much of the labor was performed by the Tarahumaras.

It might be suspected that the efforts of the Tarahumaras in giving the white man expanded access to his lands was an ironic contradiction in the story of the mysterious foot runners. Not entirely so, because beyond the steel threads of the Chihuahua Pacific there is no other way into these lands.

The countryside is almost totally impenetrable. Perhaps a jeep might probe the rough country a few kilometers, but that is all. Immediately there are barriers of crags and precipices and chasms —the creations of violent earth upheavals that formed the barrancas. These canyons—including Urique, del Cobre, Batopilas, Oteros, Tararecua, Sinforosa and Divisadero at the point of the Continental Divide are so expansive that they could contain four Arizona Grand



Left, below and opposite page: Even when being photographed, the Tarahumaras are remote and unsmiling.

Canyons. Basaseachic is a waterfall rated as the world's 12th highest. Tremendous amounts of mineral wealth—gold, silver and copper—were extracted here for the Spanish Crown during and after the days of the Conquistadores.

Twenty-six thousand acres is the heartland of the Tarahumaras, estimated at 50,000, and are protected by the Mexican Government. Its highest slopes are alive with stands of pine, evergreen, juniper, cedar and red oak. The canyon floors are tropical, flourishing with varieties of orchids, pineapple and mangoes. The species of animal life include mountain lion, panther, jaguar, wolf, coyote, deer, ermine along the streams, and chattering monkeys.

All of this expanse lies unblemished by modern man. For the Tarahumara it is his legacy and he prefers to keep today as much as it was yesterday. You see the Tarahumaras almost at their leisure, if not their pleasure. Stealthily they will appear at your side, the women and children, to offer handcrafts for a few pesos. Or you will see them moving about their business in the society of their own, practically oblivious to the white man. The men choose to be less visible.

But these Indians haven't always lived here. At one time it was the Apache who wandered the valleys and stalked the ridges, drank from springs, and trapped fish in the plunging Urique River. About 700 years ago they left the Sierra Madre Occidental for the deserts of the north. Their reason? It is still locked in the secrets of the canyons.

The Tarahumaras originally were plains Indians who roamed the eastern slant of the mountains. They were—and still are— nomads, wandering, stopping for a season to plant and harvest corn, to hunt and practice their handicraft—belts, basketwork, headgear.

In temperament the Tarahumara is remote, unsmiling. Even children and babies show little merriment. Despite this sullen attitude, the Tarahumara is less hostile than the Seri or the Mayo. But the encroachment of the Spaniards in the 16th century drove them into the mountains. Occasionally in response to the harsh treatment of the intruders they joined other tribes in bloody attacks on the strongholds of cities such as Alamos far to the west.

The Tarahumaras do not live in vil-

lages or communities like other tribes. They choose to dwell in single family units and often make their homes in caves, always ready to move with their small herds of goats and sheep to other places recently vacated by fellow tribesmen.

Their tribal government is loose knit and while there is a chief, his powers are limited as each family is an entity. There is a traditional ethic—perhaps now tarnished by his contact with the white man—that marks his business transactions and trading. If he is selling or bartering an item and it contains a flaw or defect, the fact is pointed out immediately, never concealed.

While the Spaniards moved in on the Tarahumara even in his mountain retreat, their influence was minimal. They accepted the Christianity offered by the Jesuits among the 20 missions established, but it became a blend with their own ancient beliefs. The Spanish language was only adopted through necessity and is used sparingly. Their own tongue—dissimilar to neighboring tribes—has a sound that is almost Germanic with special emphasis on accents to give different meanings. In some instances, it is said to resemble Polynesian. This similarity is not regarded as a possibility that they may have had their beginnings in another part of the world.

The Tarahumara diet covers a great variety of food. Corn is his staple and is called *pinole* in a parched form. Fermented, it is *tesshino* providing an alcoholic libation popular at ceremonies. He knows the hallucinogenic powers of *peyote*, but uses it sparingly. Delicacies are caterpillars and hummingbirds. Of course wild game is plentiful.

Long ago he created his own musical instruments: a lyre, a flute of reeds, the drum and rattles. When the Spanish settled in, the Tarahumaras became fascinated with the violin. They copied it in a crude form and it is still one of their articles on sale. No Stradivarius, the Tarahumara violin is fashioned of native wood, glued by materials from bulbs and orchids and has strings of horse hair.

Sports focus on the Tarahumara powers of running. This is no myth. Races are the big event, lasting continuously for as long as 72 hours. Fortified with *tesshino*, the runners kick a ball of juniper as they streak over the slopes and through the canyons. At night their way is lighted by torchlight and this is one of the few occasions the Indians give in to merriment or show emotion as wagers are made on the favorites in the race.

Raising crops of corn, in background, and cooking in homemade pots, the Tarahumaras' life style has changed little through the years.

The runners didn't restrict their abilities to games. At one time, the Tarahumara carried mail over a 300-mile route. A single runner would make the journey, never stopping, in six days. He rested a day and then retraced his steps at the same speed. When hunting deer or wild turkey the runners literally ran their prey to the ground.

Today's Tarahumaras have changed little from the time when the Spaniards first saw them. They live in their caves, emerging to tend their sheep and goats, attend mass in the missions, and then retreat to themselves. They meet the train when it makes its stops and silently, unsmilingly, sell a doll, a spear or a crude violin in an almost wordless exchange.

There is no firm record of their origins. Other tribes when asked about the Tarahumaras reply, " . . . they came down from the sky with corn in their ears."

This explanation will do as well as any. If it is a myth, well fine. But then whoever heard of a hunter who could run a deer to the ground. And preferred his hunting that way. □

NO. 8 IN A SERIES ON CALIFORNIA PALM OASES

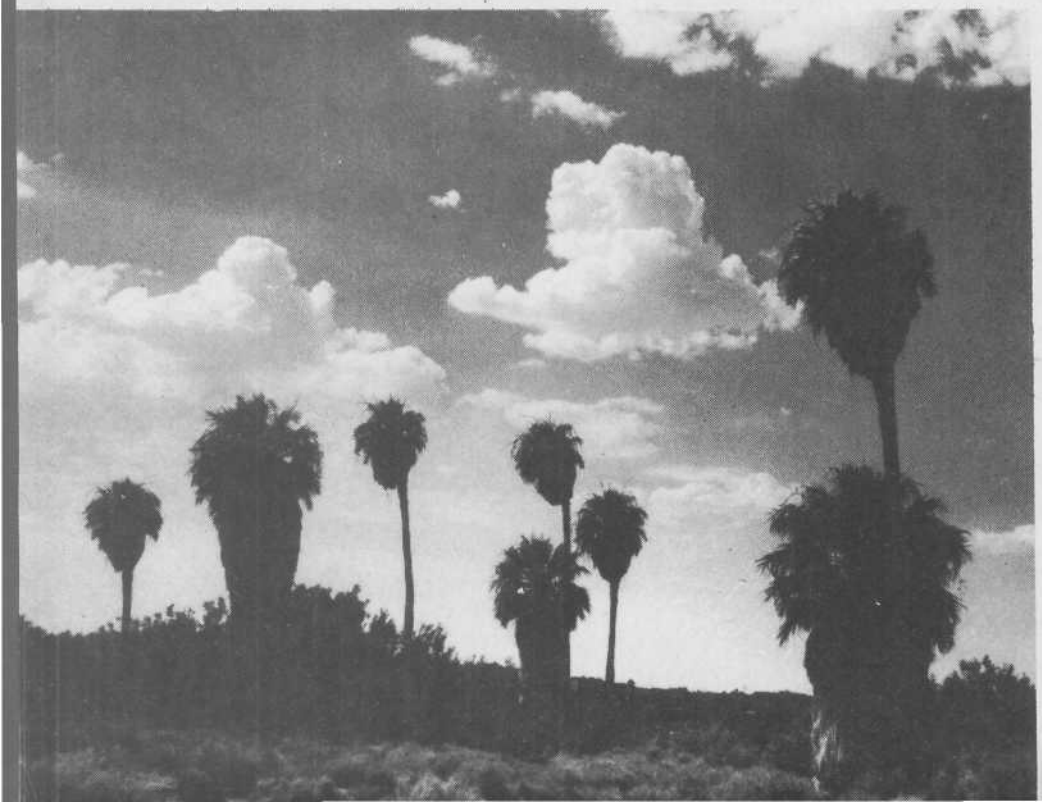
Twentynine Palms, northernmost stand of native Washingtonia palms on the North American continent. Pencil sketch by author.

Twentynine Palms

by DICK BLOOMQUIST

INDIAN CAMPSITE, life-sustaining waterhole, lodestone of miners and ranchers, headquarters of the far-flung Joshua Tree National Monument—these are roles that have been played by the famed oasis at Twentynine Palms, northernmost stand of native Washingtonia palms on the North American continent. Mopah Spring in the Turtle Mountains is more northerly, but its palms were planted many years ago, probably by prospectors, a fact which disqualifies it as a native oasis.

Twentynine Palms oasis. Photo by Harold O. Weight.



The lands of the Serrano tribe—Spanish for "Mountaineer"—once embraced Twentynine Palms, or *Mara* as it was known to the Indians. Colonel Henry Washington, leading a government survey party, recorded 29 "cabbage palmettos" when he came this way in the 1850s, only a few years after Mexico had surrendered California to the United States. (Because it resembled the cabbage palm, *Sabal palmetto* of the southeastern United States, early travelers called the California fan palm "cabbage palmetto," "cabbage palm," or "cabbage tree." "Cabbage" in this case refers to the terminal bud hidden in the crown.)

Beginning in the 1870s, ranchers and miners made the grove a center of activity; a well was sunk, and in the 1920s homesteaders established a settlement nearby, naming it for the palms. An old adobe stood at the oasis from the late 1800s until a generation ago.

Today Twentynine Palms drowses

with its memories on the edge of the growing town. The grove and adjacent Park Service headquarters building cover only a few acres, and are an exclave of Joshua Tree National Monument detached from the bulk of this splendid federal preserve. Occupying over half a million acres, the monument was created in 1936 primarily to protect a rich variety of plant life, including fine stands of Joshua trees.

A looping trail winds through the oasis, whose palms have now increased to 39. The tallest veterans tower 50 to 55 feet, raising bare trunks high above shaggy youngsters. No water surfaces in the grove, but the underground supply must be ample, judging by the growing palm population and the abundance of other plant species.

Mesquite, arrow-weed, saltbush, bladder pod, alkali goldenbush, carrizo, inkweed, willows and cottonwoods complement the soaring Washingtonias. Mistletoe in some of the mesquites supplies berries for the familiar phainopepla; quail, sparrows, mockingbirds and sparrow hawks are some of the other birds frequently seen.

Mileage Log

0.0 Intersection of Twentynine Palms Highway and Utah Trail at east end of community of Twentynine Palms. Drive south on Utah Trail.

0.5 Joshua Tree National Monument Visitor Center. The oasis is located behind the Visitor Center. Elevation 1961 feet.

On the southern fringe of the oasis lies the grave of Maria Eleanor Whallon, who died here in 1903 at the age of 18 while on her way to the Dale mining district a few miles to the east. Nearby, a two-stamp mill operated briefly in 1916.

Situated on a gentle bajada at an elevation of almost 2000 feet, Twentynine Palms has a flattish, open setting which distinguishes it from almost all other groves. It is the only oasis of the 40 visited in this series which is not located in—or on the edge of—mountains, hills or badlands. Mountains there are—the Pintos to the southeast, the Bullions to the north—but they rise at some distance from the grove.

From Twentynine Palms we shall return to more typical surroundings as we explore the lush oasis of Fortynine Palms, hidden away in a nearby highland canyon. □

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Rambling on Rocks

by
GLENN and
MARTHA VARGAS

MARCASITE: Not Exactly Pyrite

MARCASITE HAS a strong resemblance to pyrite (better known as fool's gold), but they are distinctly different minerals. Much of the confusion is the result of the fact that they are nearly the same brassy color, but marcasite tends to be darker, a bit on the gray side. Both are the same chemically, an iron sulfide (FeS2). They both have the same hardness, 6 to 6½ on mohs scale. At this point, the resemblances end.

Marcasite forms crystals in the orthorhombic system (thus they cannot be equidimensional), whereas pyrite forms equidimensional crystals such as cubes or octahedrons (double pyramids). Some marcasite crystals are excellent twins, and often resemble arrow points. These arrow point crystals often form in groups that have been named "cockscomb" crystals because of their likeness to the comb of some types of roosters.

The specific gravity of marcasite is 4.85 to 4.9; that of pyrite is higher (4.95 to 5.1). Even though these two gravities do not overlap, they are very close, and could be difficult to separate in the field. Both minerals show a metallic luster, but marcasite usually alters to the grayish tones. Pyrite seldom alters, and remains a bright brassy color.

Part of the confusion of the two minerals results from pyrite being cut into a gemstone. These are called marcasite by the jeweler. The gems are usually small, seldom over an eighth-inch across, and are used to surround a large gem of moderate to high value. This use is going into decline. These "marcasite" gems have a high reflective ability, and closely resemble gold. (This could in part be responsible for the term "fool's gold.")

How they became named marcasite is not clear, but it could possibly be the result of the name marcasite having been attached to a number of other minerals in the early days of mineralogy. The use of the name marcasite for other minerals took place in the 17th and 18th centuries. The name was first used in our present sense in 1845. Whether or not the use of the word marcasite for pyrite gems could have bridged this time gap is a point to argue.

Marcasite forms under low temperature conditions (below 450° Celsius) and only from acid solutions. Pyrite forms at temperatures higher than the above, and only from alkaline solutions. The two minerals have rarely been found together, and obviously they must have formed at different times, under different conditions.

The formation of marcasite under acid and low temperature conditions easily sets it apart from pyrite. Most mineral deposits that formed from hot (volcanic or near volcanic) solutions contain pyrite. Marcasite is relegated to deposits that formed on the fringes of volcanic activities, or in sedimentary deposits.

In this country, the most famous marcasite deposits are from what is known as the Tri-State Region; the junction of Missouri, Oklahoma and Kansas. This is a lead and zinc mining district that is famous among crystal collectors. Here, the hot solutions containing lead, zinc, iron, sulfur and other elements were injected into a limestone bed. The limestone (calcium carbonate) altered to dolomite (calcium magnesium carbonate). The solution rapidly cooled, forming a huge deposit of galena (lead), and spalerite (zinc) and other ores. Marcasite is the only iron mineral of prominence in the deposit, which indicates that the mineral deposition took place at low temperatures.

Most marcasite specimens have been found in sedimentary deposits that were heated in only moderate amounts. Sedimentary deposits usually contain at least a small amount of iron that was carried in by flowing water. All that is necessary then is to have some sulfur injected into the sediments from a warm area beneath. Sulfur can stay in a gaseous form at temperatures only slightly above boiling. If the surrounding conditions are acid, marcasite can easily form.

One of the most spectacular deposits of marcasite is in the White Cliffs of Dover, England. Every school child soon learns of the sedimentary formation of chalk, and the huge deposits at Dover are given as an example. Locked within this chalk, at some points, are excellent twinned crystals of marcasite. These are not common, and are much sought by collectors.

When the chalk (a limestone-like material, the remains of tiny sea animals) was compressed into a solid, a certain amount of heat was the result, and the sulfur and iron combined to form marcasite.

Probably the most common deposits of marcasite are in coal beds and fossil beds. In reality, a coal bed and a fossil bed are the same, with the type of living thing responsible being the difference. The chalk cliffs mentioned above are actually fossil beds.

Balls of marcasite, ranging in size from about one-fourth inch to nearly a foot across, are well known from low grade coal beds. These are despised by the operators, but the mineralogist finds them important.

Fossil beds of our mid-western states produce beautiful specimens of shells replaced by marcasite. Clams, snails, brachiopods and other types of sea animals are known to be replaced by marcasite. The process is relatively simple.

The shells of these animals are made of calcite or aragonite (calcium carbonate). These two minerals are readily dissolved in acids. An acid was introduced into the fossil bed, the shells were at least partially dissolved,and carried away with the solution. Iron and sulfur, with a small amount of heat, found this acid solution advantageous. The etched-away opening previously occupied by the shell quickly became filled with marcasite.

It is probable that the removal of the shell and its replacement by marcasite took place simultaneously. In many cases, the marcasite has faithfully reproduced all of the surface configuration of the shell. As a result, these have become specimens well worthy of being in the finest mineral collections, and also objects of importance as study material from a paleontological standpoint.

Marcasite is indeed a distinct mineral and should not be confused with, or likened to pyrite. □

Letters to the Editor

Letters requesting answers must include stamped self-addressed envelope

Fond Memories . . .

I have just finished reading your article, Land of the Blue Water People," in the May issue of *Desert*, and it brought back some fond memories of my trip to the area in the early 1960s.

At that time, there was an old-fashioned, hand-rung phone by which you could call down to the village and have an Indian bring up a mule for the trip down. I slept in my camper overnight, and in the morning the Indian was there waiting, with a mule, for the ride down to the village. My dog had to run all the way.

We stayed at the old hotel which did not even have locks on the doors. There was a store of sorts in town where you could buy some staples and I was able to prepare my meals in the kitchen at the hotel.

The next morning I again contacted my guide from the previous day and he took me by mule to the falls. I shall never forget the first time I saw them. I camped there for three days and then hiked back to the town and arranged for a mule to take me back to the top of the hill.

In the morning the guide came and banged on the wall outside my room to awaken me. I dressed and walked over to where he lived. His wife made me some pancakes on the out-of-doors fire and also some coffee—both of which tasted just great. I corresponded with them for a while, but have not heard from them for some time.

HAZEL LINDQUIST,
Costa Mesa, California.

Cactus Poachers . . .

I was told that Indians are allowed to dig up and sell any desert plant they could find a buyer for. Is this true?

When I first moved to "Emfa Zeema Acres," I was awakened one morning by two trucks going up Rattlesnake Wash to the foot of Black Mountain. One was hauling a ditch digger. Because they went through my property without even waving, I followed them and watched as they put a chain around the base of a Joshua tree, uprooted and loaded it on the truck. When both trucks were loaded they took off leaving the tractor. I stopped them as they went past my cabin, and asked if they were allowed to dig up Joshuas.

One of the two, who had sort of Greek features, explained that *only Indians* were allowed to take desert fauna, and that they were Indians from Palm Springs, doing a landscaping job on a new house. (I later learned that these transplanted Joshuas stay green for a couple of years, then die.)

I was going to ask him to say "How," to see if he had any accent, then realized that I wouldn't know an Indian accent if I heard one.

What the "Indians" don't steal, the cyclists destroy. One weekend, leather-jacketed riders came hell-bent up the wash trying to run down my pet covey of quail. All I could do was scream obscenities.

Next week I put a line of fence posts, on the lower line of my homestead, across the wash. I never got around to stringing up the barbed wire, but the city-folk don't know that. I love to watch them "Honda" up the wash at high speed, then see the fence posts and throw themselves trying to stop.

My quail entice hunters up the wash in season and all they ever shoot at is the outhouse. One ambitious hunter painted a target on the outhouse door. When you gotta go, you gotta keep the door open. Sort of restricts my movements till nightfall.

If it wasn't for these undesirables coming up the wash, I wouldn't have any visitors. I don't even get the Avon "Ding-a-lings."

After my cabin was robbed twice I put a sign on the front door which reads:

"Keep Door Closed
Pet Rattlesnakes Inside."

GUY GIFFORD,
Los Angeles, California.

Editor's Note: Reader Gifford has a knack for making the best of a bad situation, and providing us with a most humorous break in the tedium of the morning mail.

Remembers Goodsprings . . .

A footnote to your article, "Goodies at Goodsprings" in the March issue.

My boss is the grandson of the J. F. Kent spoken of in the article. His mother, who still lives in Redlands, spent most of her early years at Goodsprings.

So you can well imagine the interest that the article evoked.

BARBARA MATHEWS,
Colton, California.

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.

JULY 1-3, Cactus and Succulent Show sponsored by the Cactus & Succulent Society of America, Los Angeles State and County Arboretum, 301 North Baldwin Ave., Arcadia, California. Admission free. Contact: Kathryn Sabo, 20287 Rustin Rd., Woodland Hills, Calif. 91364.

JULY 4, Celebration at the Laws Railroad Museum and Historical Site, Bishop, California. Barbeque, Western Skits, Square Dancers, Art Show, guided tours. An old-fashioned Fun and Fund raising day for the Museum.

JULY 23 & 24, Annual Begonia and Shade Plant Show of the Theodosia Burr Shepherd Branch of the American Begonia Society, Cafeteria Building, 4667 Telegraph Rd., Ventura, Calif. Educational exhibits and rare begonia and shade plants for sale. No admission, free parking.

JULY 29-31, First Annual F.F.P. Invitational Western Art Exhibition, Competition and Sale, Julian Town Hall, Julian, Calif. Oils, Watercolors, Drawings and Bronze Sculpture. Show features 24 prominent artists from California and Arizona.

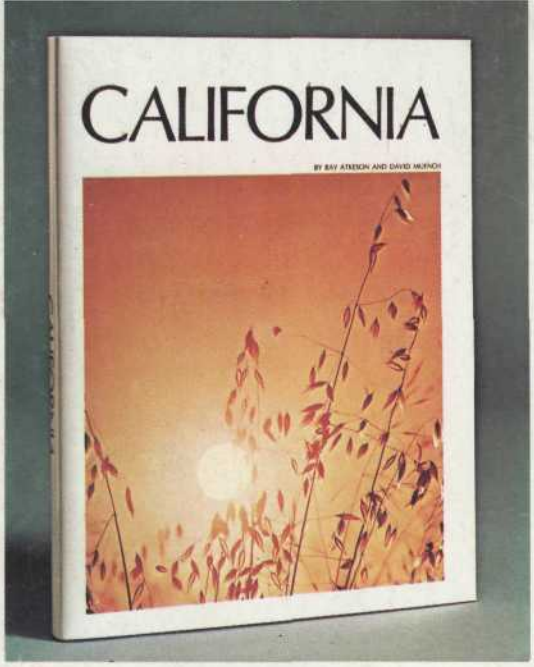
AUGUST 27 & 28, Simi Valley Gem and Mineral Society's Annual Show, Larwin Community Center, 1692 Sycamore, Simi Valley, Calif. Dealers. Chairman: Irene Josephson, 1247 Carmel Dr., Simi Valley, Calif. 93065.

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, "Harvest of Gems" show sponsored by the Centinela Valley Gem and Mineral Club, Hawthorne Memorial Center, El Segundo Blvd., and Prairie Ave., Hawthorne, Calif. Dealers, displays, demonstrations. Ample free parking. Chairman: Don C. Johnson, (213) 377-1674.,

SEPTEMBER 24 & 25, Carmel Valley Gem and Mineral Society's 18th Annual Show, "Jubilee of Jewels." Monterey County Fairgrounds, Monterey, Calif. Dealers, demonstrations. Parking free.



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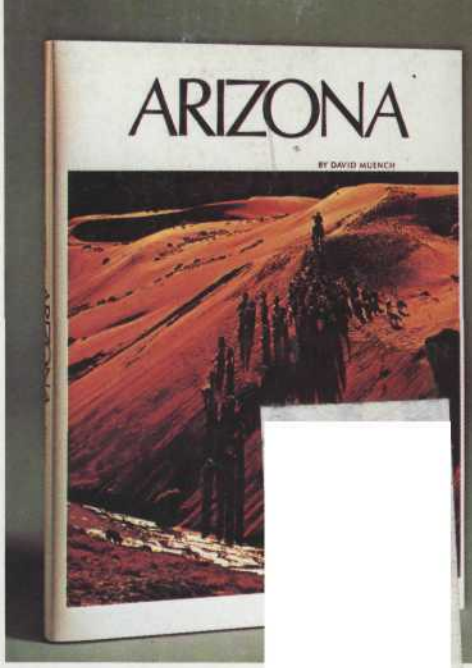

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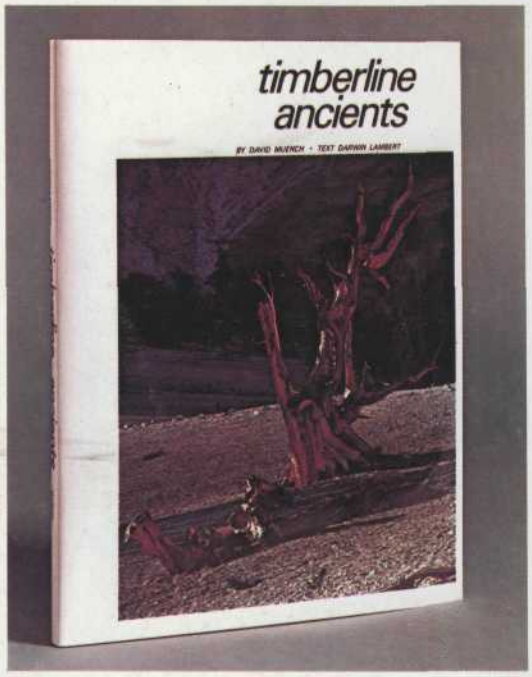

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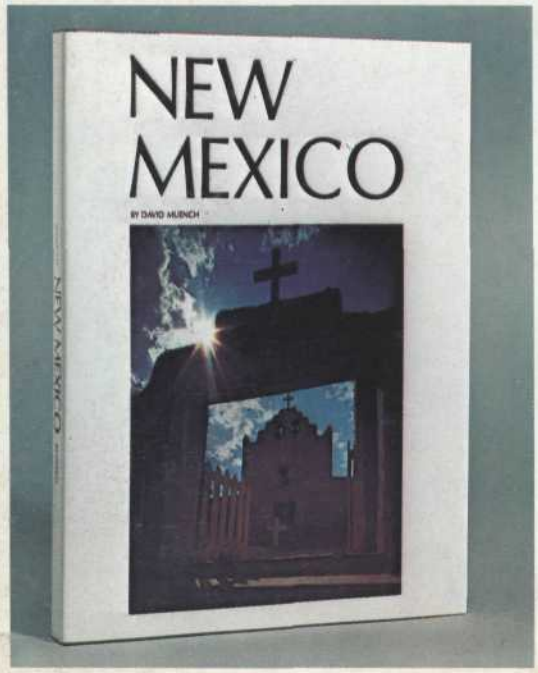
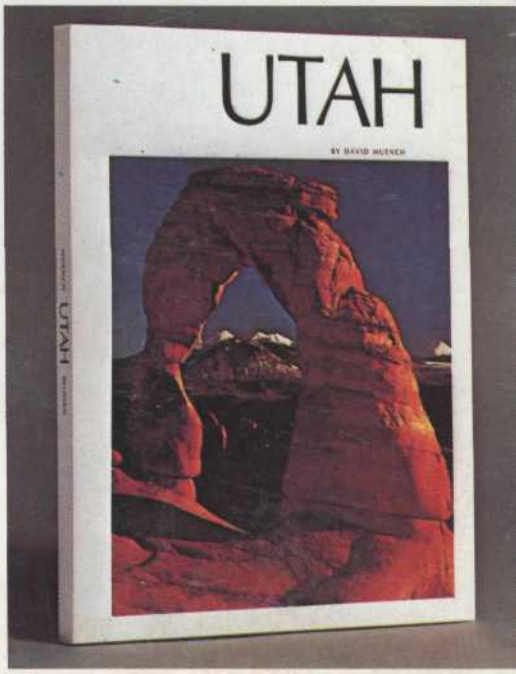


TIMBERLINE ANCIENTS—Photography by David Muench, Text by Darwin Lambert. Bristlecone Pine—earth's oldest living trees—guardians of the wild and rugged Western mountains. You will venture to far heights of natural beauty and enter new realms of feeling and knowledge. 87 photographs in full color. $22.00.



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