



*Hesperoyucca whipplei*

Anza-Borrego Desert  
State Park

# THE 1849 WHIPPLE EXPEDITION

## FROM SAN DIEGO TO YUMA AND BACK



JAMES LIGHTNER

## THE 1849 WHIPPLE EXPEDITION: FROM SAN DIEGO TO YUMA AND BACK

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Cover photograph: Anastasio, a capitán of Quechan Indians. Sketch by Charles C. Parry made in October 1849 during the Whipple Expedition.

Cover photo (back): *Hesperoyucca whipplei* in desert transition habitat.

Figure 1 (facing page): Charles C. Parry (1823-1890) c. 1865, courtesy Wisconsin Historical Society WHS-46969

Also from San Diego Flora:

*San Diego County Native Plants*, 3d ed. (2011). A comprehensive color field guide to native and naturalized plants of San Diego County, incorporating the latest taxonomy from *The Jepson Manual*, 2d ed.

*San Diego County Native Plants in the 1830s, The Collections of Thomas Coulter, Thomas Nuttall, and HMS Sulphur with George Barclay and Richard Hinds* (2014). Accounts of the visits of UK naturalists to San Diego County in the 1830s, with detailed footnotes and historical background.

*Parry's California Notebooks, 1849-51* (2014). A transcription of the notebooks of Dr. Charles C. Parry, also including letters to Dr. John Torrey, more than 200 historical and scientific footnotes, appendices, and detailed index.



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**Figure 1.** Dr. Charles C. Parry (1823-1890). Photo c.1865.

Good afternoon. Thank you to the Anza-Borrego Desert Foundation for hosting this event.

I will be talking today about the 1849 Whipple Expedition, a group of U.S.-government surveyors and soldiers that crossed the Anza-Borrego Desert in both directions to mark a boundary point near Yuma.

Before starting, let me mention three books we publish related to the topic. *San Diego County Native Plants* is a photographic field guide to the native and naturalized plants of our county. The third edition has more than 2,000 photos and identifies around 1,400 taxa, including most of the plants in Anza-Borrego Desert State Park. Our second publication, *San Diego County Native Plants in the 1830s*, discusses botanical explorations in the region in the 1830s and includes historical background on that chaotic decade when the territorial government secularized the missions. Our third book, *Parry's California Notebooks 1849-51*, is an edited, annotated transcription of the notebooks of Dr. Charles Christopher Parry (1823-1890) (**Figure 1**). Parry was the first American doctor and scientist to survey widely in San Diego County. The *Notebooks* contains his observations and daily reflections on his work, as well as about 200 historical and scientific footnotes, and also transcriptions of Parry's letters to Dr. John Torrey in New York. Parry collected hundreds of native plants in our region to share with Torrey.

### Historical Records of Parry, Whipple, Coutts and Emory

The Whipple Expedition left San Diego in the second week of September 1849 and returned three months later, in the first week of December. **Table 1** lists the key primary sources that tell us what occurred.

The leader of the astronomical survey team was a 31-year old lieutenant in the U.S. Army's Corps of Topographical Engineers, Amiel Weeks Whipple (1818-1863). Whipple supervised a handful of engineers and scientists including Parry. While Parry's *Notebooks* only recently came to light, Whipple's account was published decades ago as *The Whipple Report*.

Lieutenant Cave J. Coutts (1821-1874) of the Army's First Dragoons led a company of 40 to 50 cavalry and 12 infantry to protect and support the surveyors. Coutts' journal has been available since 1932 as a small book titled *From San Diego to the Colorado in 1849*. In his role as a surgeon for the Army, Parry worked for Coutts.

Back in San Diego all three men reported to Major William H. Emory (1811-1887), the Chief Astronomer for the U.S. Boundary Commission and Commander of the Army Escort. While the expedition was in the desert Emory made quarters at Camp Riley, a temporary post at the foot of San Diego Bay in Imperial Beach, but he kept in close contact with his subordinates through letters carried by mounted couriers.

For those of you unfamiliar with the U.S. Boundary Commission it consisted of 35-40 men and was established by President Polk to mark the

**Table 1**  
**Primary Sources with Accounts of the Whipple Expedition**

#### Expedition Members

##### **Coutts, Cave Johnson** (1821-1874):

*From San Diego to the Colorado in 1849: The Journal and Maps of Cave J. Coutts.* Ed.: McPherson, William. Arthur M. Ellis, Los Angeles, 1932.

##### **Parry, Charles Christopher** (1823-1890):

*Parry's California Notebooks, 1849-51.* Ed.: Lightner, James. San Diego Flora, 2014. "Dr. Parry's Reconnaissance", pgs. 125-30 in *Report on the United States & Mexican Boundary Survey.* Emory, William H. Washington D.C., 1857.

##### **Whipple, Amiel Weeks** (1818-1863):

*The Whipple Report: Journal of an Expedition from San Diego, California, to the Rio Colorado, from September 11 to December 11, 1849.* Ed.: Edwards, E.I. Westernlore Press, Los Angeles, 1961.

#### Emigrants Who Encountered the Expedition

##### **Audobon, John Woodhouse** (1812-1862):

*Audubon's Western Journal, 1849-1850: Being the ms. record of a trip from New York to Texas, and an overland journey through Mexico and Arizona to the gold fields of California.* Arthur H. Clark Company, Cleveland, OH, 1906.

##### **Powell, H.M.T.** (1824-unk.):

*The Santa Fe Trail to California, 1849-1852: The Journal and Drawings of H.M.T. Powell.* Ed.: Watson, Douglas S. The Book Club of Calif., San Francisco, 1931.

boundary with Mexico in accordance with the 1848 Treaty of Guadalupe Hidalgo, which ended the Mexican-American War. For the California segment the treaty stipulated the boundary was a straight line between two points. The "initial point" would be three miles south of San Diego Bay, near the Tijuana Rivermouth. The second point would be at the confluence of the Gila and Colorado Rivers near Yuma, Arizona.

Emory was the operational leader of the U.S. Boundary Commission in California. He, Parry, Lt. Whipple, Lt. Edmund Hardcastle, Andrew Gray (the titular chief surveyor), and other members arrived in San Diego by ship from Panama in June-July 1849. (Coutts was already in the territory.) They quickly set about locating the initial point south of Imperial Beach. Later in the summer Emory sent Whipple to the Colorado; after Whipple found the second point, a team under Hardcastle moved across the mountains and desert to mark the line between the points.

So Whipple's task was to find the second point, use astronomical surveying methods to identify the point's coordinates, and agree those coordinates with the Mexicans. The Mexican government sent its own commissioners and soldiers to monitor Whipple's work.

Various secondary sources have been published about the Boundary Commission and the Southern Emigrant Trail. One of the most concise is Thomas Scharf's informative article for the Summer 1973 "Journal of San Diego History" titled *Amiel Weeks Whipple and the Boundary Survey in Southern California*. Another excellent resource is *Gold Rush Desert Trails to San Diego and Los Angeles in 1849*, edited by George M. Ellis (1995), containing several well-researched articles including one by Ellis. These and other authors did not have the benefit of Parry's *Notebooks*, however.

### Preparation for the Expedition

By 1849 Emory was nationally known for an official report he wrote titled *Notes of a Military Reconnaissance: The Campaign from Fort Leavenworth in Kansas to San Diego in California*, detailing Kearny's march of 1846. That report was widely consulted by Americans planning journeys across the Southwest; Parry had read it. Emory thus spoke with authority when preparing his staff for the Whipple Expedition.

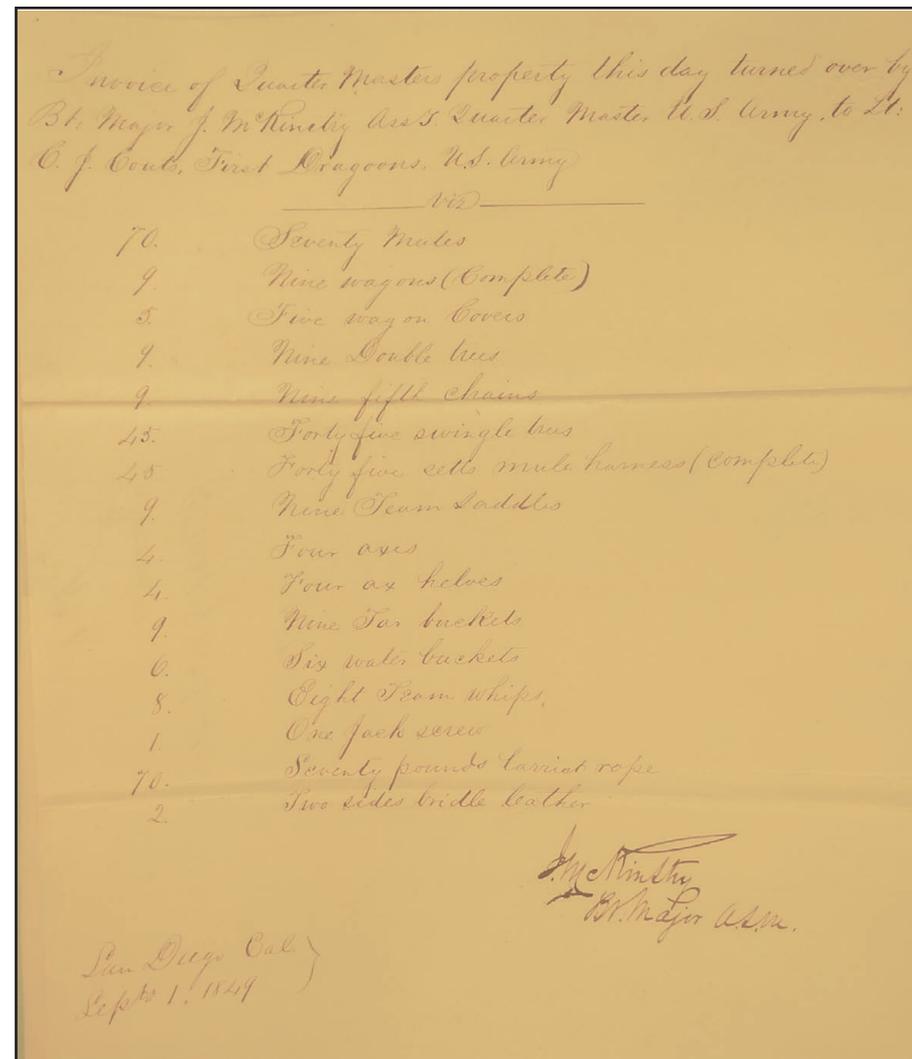
Couts also knew the desert first-hand. He had reached Los Angeles in December 1848 marching from Chihuahua under Major L. P. Graham.

Both Couts and Whipple considered the former Mission San Diego de Alcalá as the gathering point for the expedition and the start-date as Tuesday, September 11, 1849. Parry wrote on September 8 of moving from his camp on the bay out to the Mission, and on September 10 he noted activities at the Mission - the "laboring of teamsters, burnishing of arms and all the bustle incident to a start for the morrow."

Nearly 100 men, a greater number of horses and mules, 11 wagons and a horse-drawn ambulance prepared to move east. The wagons had various purposes. Commissary-wagons carried bulk food supplies, food-rations, cooking and mess equipment; other wagons carried tents, tables and chairs, blankets, clothing, a wide range of tools, munitions, survey equipment, equestrian supplies, some amount of water, some feed for the animals, etc. For many supplies Couts signed purchase orders with the Army Quartermaster in San Diego. **Figure 2** shows an invoice dated September 1, 1849, listing some of the items connected to transport; the Huntington Library's Couts Collection also includes hand-written invoices and spreadsheets Couts retained for costs unrelated to transport.

Though wagons were well stocked at the outset, the expedition relied on supplies found along the way. Parry's interest in agriculture led him to note foodstuffs en route and items the Americans bought at ranches and from Indians, such as corn, beans, squashes (calabazas), watermelons (zandías) and other fruits. Generally grass and other feed for livestock was found near water-holes.

Couts issued U.S. government IOUs to persons who supplied the expedition along the way. For example, in December 1849 he gave a teamster named C.C. Miller a \$280.00 credit-slip for 3 months' work.



**Figure 2.** Army Quartermaster's invoice made out to Lt. Cave Couts on Sep. 1, 1849, illustrates early preparations for the Whipple Expedition, which departed the San Diego Mission on Sep. 11. Listed supplies include: 70 mules, 9 wagons (complete), 5 wagon covers, 9 double trusses, 9 fifth chains, 45 single trusses, 45 sets mule harness (complete), 9 team saddles, 4 axes, 4 ax helms, 9 tar buckets, 6 water buckets, 8 team whips, 1 jack screw, 70 pounds lariat ropes, 2 sides bridle leather. The invoice is signed by the acting Quartermaster in San Diego, Maj. Justus McKinstry. (Couts' contentious relationship with McKinstry is a separate story.) This document is conserved in the Cave J. Couts Collection at the Huntington Library, along with various papers related to the 1849 expedition.

## Route to the River

Many of you are familiar with the Southern Emigrant Trail and well known points along the way; within the park here, at least five state historical landmarks have been dedicated to the Trail or the stage-route that succeeded it (see Fig. 5). The Whipple Expedition generally followed the known road, but it also pioneered some important alternate trails.

**Table 2** lists camp-locations on the expedition's eastern course. The journey can be divided into four parts: Sep.11-18 on cismontane slopes of the Peninsular Ranges; Sep.18-22 crossing today's Anza-Borrego Desert State Park; Sep.22-29 on the flats and dunes of Imperial County and northeastern Baja California; and Sep.29-Oct.2 along the Colorado River downstream from the Gila junction. **Figure 3** roughly maps the route.

**Table 2**  
Camp Locations of the 1849 Whipple Expedition heading East

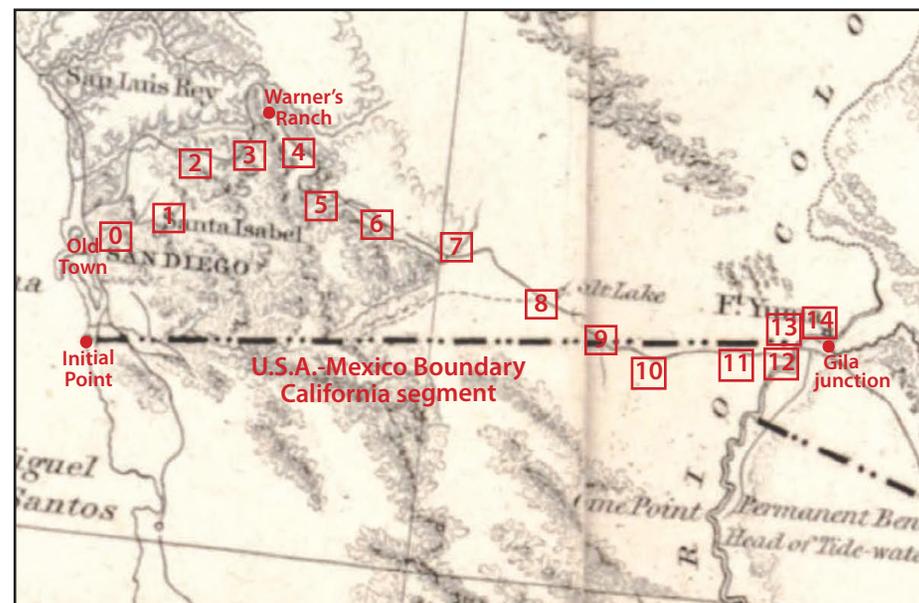
Arrival Date	Site Name(s)	Location	Miles from Previous Site	
0	---	Mission San Diego	Mission Valley	0
1	Sep.11	Rcho. Santa Mónica; Rcho. El Cajón	Lakeside, CA	12
2	Sep.12	Rcho. Santa María	Ramona, CA	14
3	Sep.16	Rcho. Santa Ísabel	Santa Ysabel, CA	15
4*	Sep.18	San Felipe	San Felipe Valley	26
5*	Sep.19	El Puerto	Mason Valley	10
6*	Sep.20	Vallecito	Vallecito Valley	6
7*	Sep.21	Carrizo Creek; Carisal	Lower Carrizo Creek	16
8	Sep.22	Signal Lake; Salt Lake (...New River...)	S of Seeley, CA	25
9	Sep.23	Grama Grass Camp; Camp Salvation	Calexico, CA	15
10	Sep.27	Álamo Mocho; Lagoon	ESE of Mexicali, BC	10
11	Sep.28	Cooke's Wells; 3 Wells	near Ejido Merida, BC	27
12	Sep.29	Old Crossing	R.bank Colorado R., BC	12
13	Oct.1	Pilot Knob	Andrade, CA	5
14	Oct.2	Camp Calhoun; Gila junction	R.bank Colorado R. near confluence Gila R.	10

\* Within or surrounded by Anza-Borrego Desert State Park.

The first part passed through six of San Diego County's more significant settlements of the time: the vacated Mission in Mission Valley; Rancho Santa Mónica in Lakeside; Rancho Santa María in Ramona; Rancho Santa Ísabel; the Warner Ranch east of Lake Henshaw; and a village of 60 or so Native Americans in the San Felipe Valley. After leaving San Felipe, there were no more settlements until they reached the Colorado River.

From San Diego to Ramona the usual wagon road passed by False Bay, then east up Peñasquitos Creek and the San Pasqual Valley, but the Whipple Expedition did not take that road; they tried an untested shortcut. After following the San Diego River upstream to Lakeside they cut north up a tributary on the western side of El Cajon Mountain to the Barona Valley, probably tracking Wildcat Canyon Road and either Mussey Grade Road or San Vicente Road as they neared Ramona. I imagine Lt. Coues was informed by locals of the route. Unfortunately, chaparral in the foothills grows thick there, and the ground can be quite rocky. Sure enough, the expedition lost two full days due to difficulties getting the wagons through. Soldiers wielded "common felling axes" to widen the trail.

A few days later, between Santa Ysabel and San Felipe, they kept to the established wagon-road, passing north approximately in line with today's SR 79 before cutting east by Warner's Ranch in line with SR 2 (San Felipe Road). But there again they considered a 12-mile shortcut, from Santa Ysabel over Volcan Mountain and down the Banner Grade to San



**Figure 3.** Approximate camp locations of the Whipple Expedition marked on map of the boundary published in 1857 in Maj. William Emory's report on the work of the U.S. Boundary Commission. (Numbers from Table 2)

Felipe. All three writers - Parry, Coutts and Whipple - mentioned the Banner shortcut in their notes of September 18 and the decision not to take it because the wagons might not pass. Parry went on to discuss the Banner trail at length in a passage he wrote for the Boundary Commission's 1857 Report, but we know from his *Notebooks* he did not actually take it until mid-1850, during a two-man exploration of San Felipe and Cuyamaca.

The most important alternate route across the Peninsular Ranges pursued by members of the Whipple Expedition was a South-County trail between Imperial Beach and Carrizo Canyon; I will say more about that when discussing the return trip (see pg. 18 below). Generally, American efforts to find new and faster routes across the county may have reflected an attitude that everything in *Alta California* could probably be improved.

### Grizzly Bears in the Mountains?

I want to mention one other clause from Coutts' account of September 18, 1849, regarding Grizzly Bears. In the typed McPherson transcription of his diary Coutts notes, "Left Santa Isabel with sixteen bears, which, if we can keep, will be of great service on the Colorado." He wrote nothing more about said bears or how the Army obtained them, and neither Parry nor Whipple mentioned bears in their accounts, but Richard Pourade, in volume 3 (1963) of his popular history of San Diego (*The Silver Dons*, chapter 8), concluded fabulously: "In the mountains the [Whipple] expedition shot sixteen bears to add to their supplies of food".

There were indeed Grizzly Bears living in San Diego County at the time; Parry saw bear-tracks while on Palomar Mountain late in 1850. (Black Bears were not native in the area or naturalized at the time.) So it is possible a bear or some bears were taken by Coutts' troops. I am imagining a sleuth of them foraging by a pond in Mesa Grande as Sailor Bill Williams - the first settler of the Julian area - guided soldiers to hunt them.

But there are few first-hand historical accounts of encounters with bears in San Diego County, and it seems to me highly unlikely there could be so dense a population of Grizzlies that anything close to 16 would be shot in a span of 36 hours. I think an alternative to Pourade's interpretation is that the expedition acquired meat for the commissary at Rancho Santa Isabel, and possibly some of it was bear-meat, and Coutts in his colorful diary used hyperbole. Perhaps an even more likely possibility is that Coutts' cursive was mis-transcribed. He may have written "boars" (i.e. hogs), not "bears". We do see in the diaries that the expedition consumed pork.

### Crossing Anza-Borrego Desert State Park

Departing San Felipe Valley on September 19, 1849 the Whipple Expedition embarked on an 11-day journey across the low desert, suffering temperatures up to 125° in direct midday sun, according to Parry. These

were the dreaded parts of the Southern Emigrant Trail, not only for the heat but for the scarcity of water and forage. Men could pack food and water for themselves and gain shade from tents or wagons, but if their mules and horses died they could be in grave danger. Keeping the animals alive was the expedition's central challenge. Each day they aimed to reach a viable water-hole and to find sufficient forage there.

At the foot of the Laguna Mountains and close to today's highway SR 2, the part of the route across the Anza-Borrego Desert offered some reliable water-holes. The second camp-site, along upper Vallecito Creek near the Butterfield Ranch, was referred to by all three diarists as "El Puerto". En route to it the trail navigated Box Canyon (**Figure 4**). Parry wrote that El Puerto was "formed in an entering angle of the range of hills to our left, in the cleft of which is a springy pond and a patch of grass" - precisely what the animals needed.



**Figure 4.** View east down dry falls in Box Canyon near State Route 2 in Anza-Borrego Desert State Park. On Sep. 19, 1849, Parry wrote in the *Notebooks*: "The road in some places [was] hewed in by rude rocks on both sides rising 20 or 30 ft., with barely room for the passage of a wagon. In one place there is a steep pitch as of a mountain torrent, which that road has to avoid by taking to the right bank descending by an almost perpendicular curve to the pass again."

The third camp-site was just 6 miles farther down Vallecito Creek in the verdant Vallecito Valley. Parry wrote that the valley “derives its fertility from several springs which drain from the base of the northern range of hills, highly charged with sulphur...” The mention of sulphur recalls the hot-springs at nearby Agua Caliente County Park.

The fourth and last camp-site within the park was at or near the Carrizo Stage Station historical site, on the northern side of the Coyote Mountains in the blistering badlands along the Imperial County line (Figure 6). Parry called it “Carisal,” Coutts “Carrizal” and Whipple “Cariso Creek”.

To avoid daytime heat the expedition moved the 15 miles to lower Carrizo Creek after 5 p.m. They passed Palm Spring near Canebrake, which had a grove of mature Palms on the northern side of the valley; the water there was “distinctly salt & bitter” (Figure 5). Around midnight they reached the Carrizo Creek site but found the water-hole a bust. “There was no grass or fodder of any kind for the animals,” Parry wrote, “and the water, though pleasant enough tasted, was generally refused by the horses & mules.” Coutts believed the water had been fouled. “[We] were astonished at not finding a particle of cane for the poor animals, and more still at their not drinking the water... I judge that the number of dead animals around and in the water, was the reason they would not use it.”

### The Miraculous September Storm

Facing mounting difficulties the expedition departed Carrizo Creek just hours later, around 6 a.m. on September 22, hoping to find better water 25 miles on. Passing clear of the Coyote Mountains they climbed a steep grade about 9 miles east to the plain of the Yuha Desert, which Coutts described as torture. “This hill was equivalent to a death stroke, 110° in the shade, 120° in the sun, having to double teams with every wagon, and then aid with every man I had; no water, mules not having had anything to eat or drink for 24 hours, and 20 long miles over heavy sand to water.” Parry called that afternoon “the climax of our distress.”

This marked the nadir of the Whipple Expedition, far from any settlement, uncertain of finding pasture or water, baked by merciless sun.

Then - miraculously - a rain-storm came. Around 3 p.m. clouds began forming and the wind rose; by 6 p.m. the temperature dropped precipitously and rain and hail commenced. By nightfall “the road was converted into a perfect sheet of water obliterating our track,” according to Parry, “and knee-deep in water through this our mules splashed”. Coutts rejoiced: “[The storm] was our salvation”.

Troops and wagons were spread out over fifteen miles but gradually arrived safely to the banks of New River, the flood-channel of the Colorado that pushes north through Calexico. By the evening of September 23 most of the expedition had reached an ideal camp-site with good water and abundant Grama Grass. Coutts called it Camp Salvation.



**Fig. 5.** State Registered Landmark #639, Palm Spring along Vallecito Creek in Anza-Borrego Desert State Park. On Sep. 21 en route to Carrizo Creek the expedition paused here but the water was “distinctly salt & bitter”.

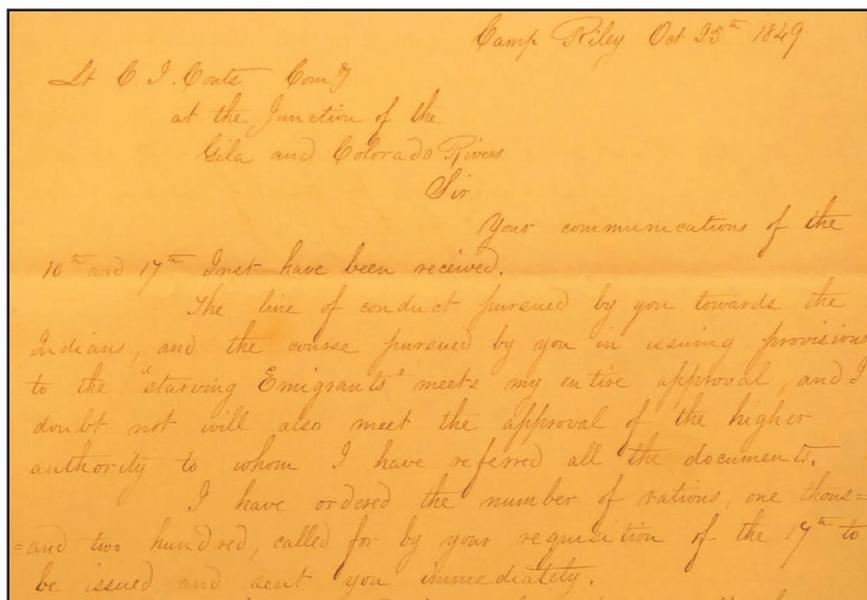


**Figure 6.** The wide valley of Lower Carrizo Creek, looking south toward the Coyote Mountains. A major drainage and normally reliable camp-site, it failed to provide water or forage to the Whipple Expedition on September 21, 1849. (photo courtesy Tom Teske, Anza-Borrego Desert Forum)

## Encounters with Emigrants

At Camp Salvation and other camp-sites of the Whipple Expedition, the men met scores of Americans heading west. Most of the emigrants hoped to find gold and suffered from the hardships of a long, hard journey. Coutts wrote almost daily of them besieging him for assistance; Emory commended Coutts for helping those in need (Figure 7). Coutts also complained of their beggarly ways. "The emigrants! ...I never was in my life so annoyed. To sit and tell them of California... is only a pleasure. But then follows the begging, for sugar, flour, molasses, pork, a little fresh beef, rice, coffee, etc."

The desert-trail was strewn with dead animals and various abandoned things. Parry wrote on September 28, "We pass[ed] [six] deserted wagons, all belonging to ox teams, with a variety of abandoned property including a blacksmith establishment - complete." On October 19 John Audobon, son of the famous bird-painter, making his way to California with a large party of emigrants, wrote of an abandoned camp at Álamo Mocho: "Broken wagons, dead shrivelled-up cattle, horses and mules as well, lay baking in the sun, around the dried-up wells that had been opened in the hopes of getting water."



**Figure 7.** Excerpt from letter dated Oct. 25, 1849 from Maj. Emory to Lt. Coutts commending Coutts for aiding distressed emigrants. "The line of conduct pursued by you... in issuing provisions to the "starving emigrants" meets my entire approval... I have ordered the number of rations called for by you... sent to you immediately." (Huntington Libr./Coutts Collec.)

Among the emigrants were acquaintances from the States. Coutts knew some from West Point, past Army service, and life in Tennessee. At the Colorado crossing Parry met a friend from the Midwest, Dr. Andrew Randall, on his way to Monterey with the Collier Expedition. Randall spoke of a challenging journey across New Mexico that included "a running fight with the Apaches for 5 days."

Randall accompanied his superior, Col. James Collier (1789-1873), the newly appointed Collector of Customs for California, along with an Army escort of 30 dragoons and a party of civilians led by Audobon. Coutts offered hearty meals of beef to Col. Collier, Audobon and other prominent Americans, leaving those travelers full of praise. The Collier Expedition suffered more misfortune on October 16, however, when the commander of its Army escort, Captain Herman Thorn, drowned in the river. Thorn's death is lamented in all accounts of the Whipple Expedition.

One illustrious emigrant to meet the expedition was a certain Mary Conway, traveling with her large family. On October 28 Coutts wrote, "An angel in the wilds! Farewell Miss Mary! May you wed your true love" [sigh].

The most detailed account of an emigrant's journey to San Diego at the time of the Whipple Expedition must be the magnificent diary of H.M.T. Powell published as *The Santa Fe Trail to California, 1849-1852*. Powell crossed the Colorado on October 31, two weeks after Collier's company. He visited Camp Calhoun - the Whipple Expedition's tent-camp - and met Coutts. Readers of Powell's diary may feel as if they themselves are wearing his boots, sharing supper with other travelers, searching for stray animals, facing fears of Indians, digging for water, urging along his mule.



**Figure 8.** Ox-train in Arizona in 1870s. In 1849 many Americans following the Southern Emigrant Trail abandoned livestock and other possessions due to hardships in the desert. (Smithsonian archives)

## Camp Calhoun, Precursor of Fort Yuma

After resting at Camp Salvation nearly three full days, the Whipple Expedition resumed its march to the Colorado on September 27, 1849, reaching the river September 29 near the point where Coutts had crossed with Graham in 1848, well south of the confluence with the Gila. At the time the river was a majestic sight, 500 yards wide in places, such that Parry called it "the Mississippi of the Pacific North America".

Perhaps three thousand Native Americans of Yuman tribes, mainly Maricopa and Quechan ("Cuchan" to Whipple), farmed in the area within 15 miles of the Gila junction. Coutts had sent his Kumeyaay guide ahead to tell the Yumans the expedition was peaceful. As soon as the Americans neared the river Indians approached. Whipple wrote: "...We were escorted by the Indians a short distance to their village in the cañada, luxuriant with maize and melons. We were at once surrounded by great numbers of men and women...A dozen warriors conducted us beyond their village three miles, through fields of maize and groves of alamo and willow, to the Rio Colorado, where we encamped 12 miles below...the Rio Gila."

Over the next three days the expedition made its way north and east along the river to a camp-site on the right bank of the Colorado, on an 80'-high hill overlooking the Gila confluence. Coutts called it Camp Calhoun. There were numerous Quechan villages in the area, which Whipple and Parry visited to study. Parties of emigrants camped across the river, waiting to cross south of the confluence.

In their journals both Whipple and Parry spoke of the native people in friendly terms, but there were continuous reports of troubles between tribes and emigrants. Americans were advised to travel armed and in numbers. Moreover, the Quechans near Camp Calhoun were in a state of war with Maricopas; each suffered raids by the other.

On October 3 Whipple and Coutts had a meeting with Quechan "captains" (one of whom, Anastasio, Parry sketched (Cover; Fig. 9)). Coutts wrote, "I explained fully the disposition of the United States toward them, and all other Indians, that I had come here to make peace with them and the emigrants, and not to fight them." Two days later a Quechan leader admitted his band "had killed but two white men, ...[and] in each case... they caught the American alone, and without his gun. Also that the Americans had killed five of their men, two boys and one woman; had robbed their bins and destroyed their melon patches.



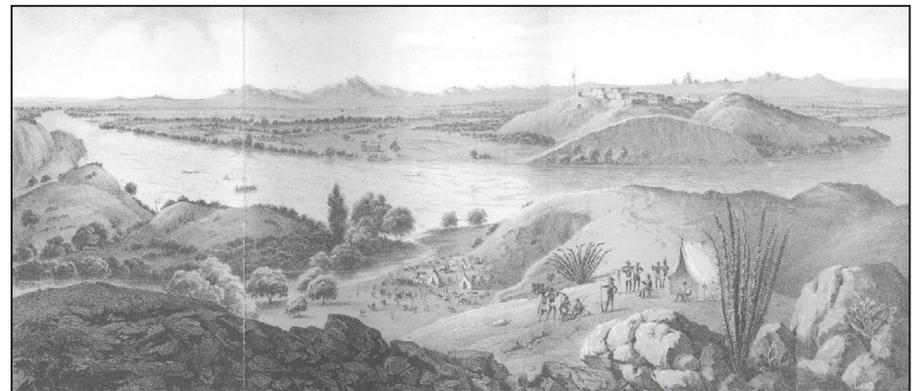
**Figure 9.** Parry's sketch of Quechan capitán Anastasio in dragoon's coat.

And that a month ago, the Indians stole two American horses, and the Americans came with their guns and not only took them back, but also took five of their horses..."

Given the large population of Indians in the area, and the bottleneck at the river as trains of emigrants came to cross, the presence of the US Army reassured Americans. Emigrants who passed earlier complained of the lack of security. By letter dated September 26, 1849, General Riley - the military governor of California - asked Emory to recommend a location for an Army post near the river-crossing. Emory sent a courier to Coutts, who received Emory's letter after already siting Camp Calhoun.

I mentioned earlier H.M.T. Powell's account of the emigrant experience; in connection with Yuma I also want to cite the journal of William R. Goulding, published as *California Odyssey, An Overland Journey on the Southern Trails, 1849* (ed. Patricia Etter; Arthur H. Clark Co.; 2009). Goulding's party reached the Colorado River late in July 1849 so preceded the Whipple Expedition by two months, but the New Yorker left a marvelous, vivid account of the crossing, describing the Indians who swam rafts across and the motley population. "Here was a perfect menagerie into which was crowded French, Dutch, English, Irish, Scotch, Americans & Mexicans of all kinds and sort... Here was a scene of naked arms, bodys, and legs as was never seen before in a bathing scene. Here was the Indian... all mixed in together in a glance, and the language of the Spaniard, the mongrel Mexican, and the Yankee trading with the Indians to take him over..."

Late in 1849 the Whipple Expedition brought some order to the Colorado River valley. "Lt. Coutts has stretched a rope across the Colorado and made a regular pioneer ferry", Parry wrote on November 3. After the expedition left for San Diego, lawlessness increased again, exacerbated by the Glanton gang. Later in 1850 the Army returned, and in March 1851 Camp Yuma was founded on the site of Camp Calhoun (Figure 10).



**Figure 10.** 1852 painting of Colorado River with Camp Yuma (formerly Camp Calhoun) opposite on hill and ferry crossing at left; by John Russell Bartlett, Boundary Commissioner during Fillmore administration.

## Whipple's Work

From the expedition's base at Camp Calhoun, Lt. Whipple needed to locate a point representing "the middle of the Rio Gila, where it unites with the Colorado", and then calculate its latitude and longitude, with magnetic declination and dip, and the coordinates of the azimuth for the line to the initial point at the Pacific. Whipple considered the hill on which the camp was perched "excellent for an astronomical observatory".

As the boundary to/from the Pacific would be some 200 miles long, positioning of the terminus affected sovereignty over tens of thousands of acres. The Americans would prefer that the end-points err south. According to Parry, the mouth of the Gila moved within a rather wide plain, depending on season, sand accumulation, and heights of the rivers. On October 5 he wrote, "The water since we came here has fallen a foot or more, revealing innumerable sandbanks above [the mouth of the Gila]". On October 8 he noted, "Within the last two days... the direction of the stream is more nearly at right angles with the course of the Colorado. Its appearance on the map will be considerably changed and a rod or two [15-30 feet] gained by the Yankees on the Boundary line." And on October 12 he confirmed, "The sand bank that when we came here first gave direction to the mouth of the Gila is now entirely washed [away] and [the Gila] now makes its exit unimpeded at the base of its high southern bank." Whipple fixed the monument's location after these changes occurred.

Back in San Diego, on October 10 the joint boundary commission formally agreed the coordinates of the initial point. Emory promptly sent a courier to Whipple asking for his earliest reading of the coordinates of the second point, so the azimuth of the line could be set at both ends.

Unfortunately, the notebooks of Whipple and Parry tell us little about their many hours of astronomical surveying. They do not discuss their instruments, celestial bodies viewed, or making their calculations.

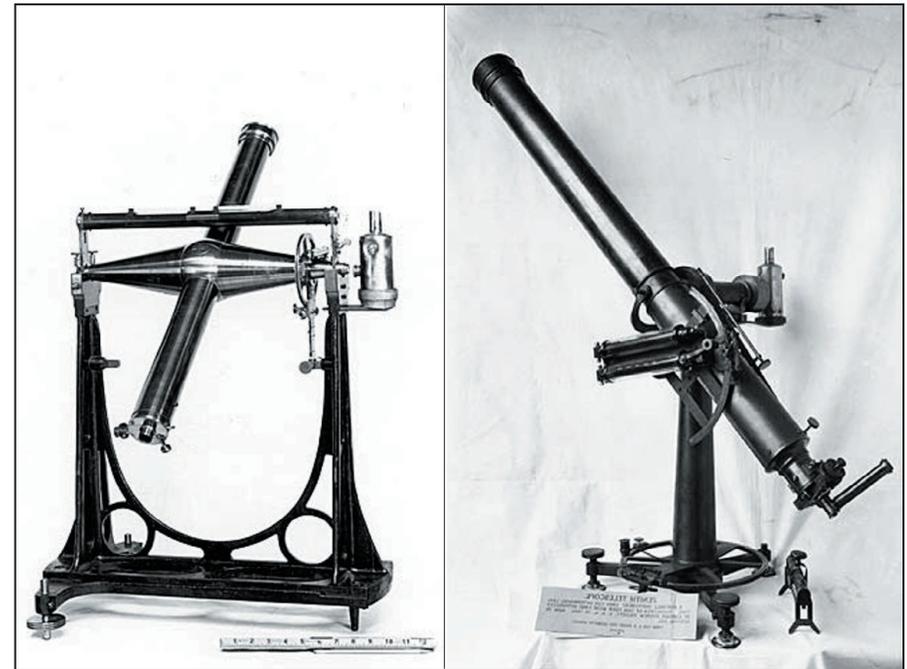
We do know the following from Emory's 1857 report: "Lt. Whipple, under my orders, determined the junction with a 36" transit and a 46" zenith telescope". We also know from Whipple's entry of October 19 that he used a chronometer, and at least some of the instruments were made in England by Troughton and Simms. **Figure 11** shows a geodetic transit and a zenith telescope probably like those Whipple used.

Parry worked closely with Whipple. As the Commission's geologist he apparently managed the thermometer and barometer, regularly reading temperature and atmospheric pressure and assisting in the measurement of altitude. He also read a compass often. On October 9 he wrote, "commence magnetic observations," and on October 10, "Occupied in magnetic observations... The variation of the needle is here 12.5° East". I suppose that was the difference between observations by compass and telescope. In a letter dated October 23 sent to John Torrey he commented, "Here we are pretty much confined to astronomical duties".

A month later, on November 23 Whipple remarked, "Having been employed so steadily in observing at night, and computing all day, my health begins to suffer". He must have spent much time looking through the telescope and little sleeping. (Parry did not complain of nocturnal work.)

Finally, on December 1, 1849, Whipple wrote: "Having determined, with all the accuracy which two months' time would admit, the latitude (32° 43' 31".6 north) and longitude (114° 33' 4" west of Greenwich) of the monument near the junction of the Rio Gila with the Colorado, and from thence measured 85° 34' 16".2 west of south, the azimuth of the straight line of boundary leading to the Pacific Ocean, and also having settled with the Mexican commission, which arrived yesterday, all questions relating to the boundary at this point from which any difficulty could be apprehended, we left the Mexican gentlemen in charge of our fixtures, and turned towards San Diego."

The Mexican commissioners, Pedro García Conde and chief surveyor José Salazar Ylarregui, with a substantial Mexican Army escort, reached Camp Calhoun on November 27. (A small party of the Mexican escort under Col. Carrasco had come on September 29.) They signed on to Whipple's conclusions but stayed for several weeks to make their own measurements. In the end they did not dispute the coordinates of the second point.



**Figure 11.** Geodetic Transit (left), including 31" telescope and 18" striding level, and 46" Zenith Telescope made by Troughton & Simms of London, similar to instruments used by Whipple (photos: Smithsonian Museum).

## Return To San Diego via Tecate

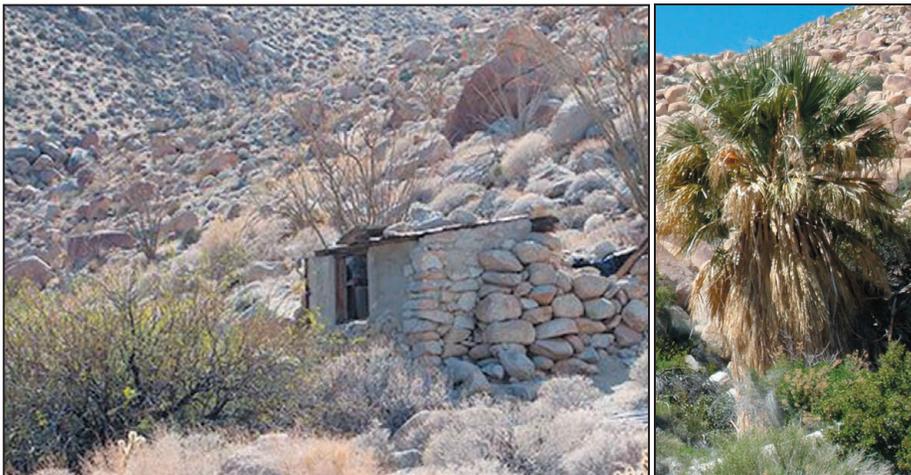
Having completed the assigned task, the Whipple Expedition packed and left Camp Calhoun the morning of December 1, 1849, to return to San Diego. The published accounts of Coutts and Whipple end at that time, while *Parry's California Notebooks, 1849-51* continues with daily entries for 16 more months, until March 25, 1851.

On that first day of the return trip Parry happily "took passage on a flat boat and floated down [the Colorado] in fine style at the rate of about 3 or 4 miles the hour, the river about a uniform width of 200 yards," until he reached the "Old Crossing" site where the expedition had camped September 29-30. Camping there one night, they left the river entirely the morning of December 2 and made it to Carrizo Creek in 5½ days, retracing more or less the September route. They moved quickly thanks to cool weather and adequate forage and water.

At Carrizo Creek the expedition divided into two groups, one with the wagons to follow the main road via Warner's Ranch, and one with pack-mules to follow the "new pack-trail discovered by Mr. Gray." Parry accompanied Coutts on the new trail, reaching Camp Riley December 10; Whipple stayed with the wagons, arriving in San Diego December 12.

Mr. Gray was Andrew Gray, the chief surveyor on the Boundary Commission. Gray is best known in San Diego history for drawing the first good American map of San Diego Bay, dated 1849, and also for promoting New Town, which he mapped and marketed early in 1850.

By request of John B. Weller, titular head of the Commission at the time, Gray was directed to join the Whipple Expedition and be present at the



**Figure 12.** Rockhouse Canyon, which Parry and Coutts are thought to have followed on Dec. 8, 1849. Inset: Parry saw palms by a rocky creek while climbing out of the desert toward the McCain Valley.

Gila junction to meet the Mexican commissioners. He left his camp on San Diego Bay in mid-October with a small group that included Indian guides, at least one assistant-surveyor (John H. Forster), probably a small armed escort, and no wagons. In a letter to Weller dated November 7, reproduced in the Ellis book, Gray explained how he pioneered the "new pack trail". He asked his guides to lead him approximately along the future boundary line. They rode east from Tijuana on the southern side of the Otay Mountains to Tecate, then cut northeast across Campo and the McCain Valley area, camping there for "a day and a half" before descending to the desert and joining the main road.

Gray incurred Weller's displeasure after he abandoned his journey to the Colorado River to accompany the Collier Expedition on its westward trek. He claimed in his November 7 letter that Collier's escort, led by Lt. Edward G. Beckwith, insisted he personally lead them to San Diego.

Gray's assistant, Forster, did continue to Camp Calhoun. Presumably he informed Coutts and others of the new pack-trail and joined their group cutting south on December 7. They spent that night near the mouth of Rockhouse Canyon, then scaled the In-Koh-Pah Mountains on December 8 (**Figure 12**). It was a difficult climb. "Dismounting and bridle in hand we proceeded single file... zigzag up the mountain. The way was choked up with large rocks and the ascent sometimes steep... Toiling on from one ascent to another, in about 2 hours from the foot we reach[ed] the summit and look[ed] back over a singular & striking scene" (**Figure 13**).

They spent the night of December 8 in the vicinity of Campo and December 9 around Tijuana. The next morning they made their last 10 miles and entered Camp Riley "with bugles sounding."



**Figure 13.** View northeast from Carrizo Corridor viewpoint in McCain Valley, managed by BLM, on the edge of the In-Koh-Pah Mountains.

## Medical Complaints

Among his roles on the three-month expedition Parry was surgeon for the Army escort. In the *Notebooks* he recorded diagnoses of complaints suffered by dragoons and infantry. **Table 3** summarizes his notations.

Date	Patient Name	Diagnosis/ Comment
Sep. 20	James Farrer	sore throat
Sep. 20	Henry Hiller	syphilis
Oct. 3	George Critner	injury to head
Oct. 12	Peter Gribben	syphilis
Oct. 18	Joseph Nixon	intermittent fever
Oct. 18	-- Waggoner	gonorrhea with stricture
Oct. 22	-- Brown	syphilitic with abscess in groin
Oct. 22	Lewis Brockman*	dysentery
Oct. 23	-- Garps	abscess in palm of hand
Oct. 25	William Patterson	diarrhea
Nov. 12	*Lewis Brockman	Died.
Nov. 18	-- Gardner	syphilitic bu ba
Nov. 28	-- Owens	primary syphilis
Nov. 30	-- Decker	[no reason given]

Of the 13 listed cases, at least 6 were bacterial infections that had been sexually transmitted - syphilis and gonorrhea. The incubation period for syphilis is a matter of weeks, after which a primary lesion appears. Corporal Owens, at least, appears to have contracted the disease in Southern California. There is little information at hand about social interactions between soldiers and local women, however. We do know that both Army personnel and Indians enjoyed gambling, as in card games, and drinking alcohol, at least in the coastal towns and rancherías, and one might imagine related sexual activities. Certainly some soldiers also came to California already infected with venereal diseases.

The sad case of dragoon Lewis Brockman, who died of dysentery, is a reminder of the viciousness of that variable malady, which killed tens of thousands of U.S. Army personnel during the 1800s. Spoiled food, undercooked meat and foul water could cause it, along with poor hygiene. In a letter to Torrey dated January 26, 1850, Parry mentioned a "severe attack of dysentery which confined me to my bed for two weeks... I am now however entirely recovered." He was lucky to be alive. To comprehend the fear of STDs and dysentery, imagine life without antibiotics.

## Parry's Geological Observations

In connection with Whipple's work I mentioned that Parry was also the Commission's geologist. In the *Notebooks* and in text he contributed to Emory's 1857 report, Parry incorporated descriptions of topography, hydrology, land formations, and types and colors of rocks and soils. A typical example is his description of lower Carrizo Creek (**Figure 6**), which captures the strange barren landscape at the eastern edge of the park:

"Carrizo Creek lies within deep sandbanks and at the place of our camp is a running stream flowing over a shallow and shifting sandbed running to the northeast by a tortured course... About a mile below it disappears in the sand and crossing its dry bed several times we continue for 3 miles in its singular valley surrounded by high and irregular sand buttes, showing distinct stratification and generally sloped at a varying distance 30 to 80 ft. with rough rounded pebbles. The washing of the sand hills exposes shining flakes of gypsum sparkling in the distance. The hills some of them are of considerable height and truncate pyramid shape, rising above the level plain of the desert to which we mount by a steep hill. The mountains on either side are entirely barren and present a lava-like aspect."

Like most Americans at the time, Parry had his eyes open for precious metals and gems. In June 1850 he took a trail down Banner Canyon and later climbed back up the mountain through Chariot Canyon nearby. He was accompanied by a former Army officer who had opened a store near San Felipe. Making their way up the "unfrequented pass" Parry noticed promising rocks. "Here we make an attempt to wash for gold... quartz veins becoming frequent in the exposed rock." Higher up they saw "a remarkable quartz vein traversing the formation N&S... The quartz has pregnant mineral spots of which specimens were obtained for further information." This was almost certainly the first geological exploration in the Julian mining district (**Figure 14**).



**Figure 14.** Remnant of Warlock Mine near Banner. Parry was likely the first American to pan for gold in the Julian district, in June 1850.

## Parry's Plant Collections

Charles C. Parry is best known historically as a botanist and plant-collector. He was the first botanist to survey the vegetation in many areas of Southern California, and during his life he collected thousands of plants. Nearly every entry of the *Notebooks* mentions plants he saw. His account helps us imagine how the landscape looked in 1849.

Parry sent most of his plant-specimens to Dr. Torrey in New York. When Torrey concluded that a specimen represented an undocumented or 'new' species, he sometimes named the plant for Parry. For example, citing two of many dozens of plants Parry collected here in the park, the specific epithets for *Calycoseris parryi* (Yellow Tackstem) and *Ziziphus parryi* (Lotebush or Desert Jujube) both bear his name (**Figure 15**). Parry returned the favor; on discovering a pine tree in 1850 north of La Jolla, he called it *Pinus torreyana* - the Torrey Pine. Of course Torrey authored thousands of species and honored many people; I believe it was Torrey who chose to name *Hesperoyucca whipplei*, the Chaparral Yucca you see growing on the way up to Ranchita, for Parry's colleague Lt. Whipple (photo on cover).

Parry's relationship with Whipple grew rather strained in 1850. Around March 4, 1850, as Whipple prepared to return via Panama to the Atlantic coast, Parry gave Whipple a large parcel of plant-specimens - including all cuttings Parry had taken during 8 months around San Diego and in the desert - and asked Whipple to deliver the parcel to Torrey. Whipple took charge of it but then misplaced the parcel. Eventually he declared it lost. The mistake infuriated Parry, and he struggled to forgive Whipple's carelessness. He lamented, "A year's work is thus in a measure thrown away".



**Figure 15.** *Ziziphus parryi*, which Parry discovered on June 18, 1850 near San Felipe, saying it had a "singular fruit" with a "3-celled stone". Torrey named it for Parry.

In an effort to re-collect plants he had found in fall 1849, Parry returned to some of the camp-sites of the Whipple Expedition. He spent several days in June 1850 around Santa Ysabel, the San Felipe Valley and today's Cuyamaca State Park. It was then that he collected both *Ziziphus parryi* and *Prunus fremontii*, two thorny shrubs of the desert transition that both have fleshy fruits, along with dozens of other shrubs, herbs and cacti. He also wrote a complete description of *Agave deserti*, the Desert Agave, and tasted "mezcal" from its heart (**Figure 16**). "In taste it resembles molasses candy but not quite so sticky. It is the main dependence for food of the Indians".

## Desert Plants Observed

The desert plants Parry mentioned in the *Notebooks* can be categorized as crops, forage, or species representing the natural habitat.

Each time the expedition camped at an established human settlement Parry made a record of crops or cultivated plants. At Santa Ysabel, a ranch and farming community of some 300 people, he tasted grapes, peaches, pears, apples and melons. In the San Felipe Valley he noted "patches of corn" as well as the Desert Agave just mentioned. While among the Quechan villages he made extensive notes on the local agriculture, citing maize, beans, pumpkin-squash, musk-melons, watermelons, millet, amaranth and Mesquite beans as important foods. The expedition regularly purchased fresh vegetables and fruits at the settlements where it camped. In the case of the Quechan villages, the Americans often bartered for the food with such things as tools, trinkets, cloth and clothes.

Mesquite beans were also sought as forage for mules and other pack-animals. For those of you not familiar with Mesquite, it is a woody, thorny shrub or tree in the Pea family that thrives near creeks in the desert and desert-transition - for example, along San Felipe and Vallecito Creeks and here in Palm Canyon (**Figure 17**). Its fruit is a long pod containing several beans. It was a very important plant along the Southern Emigrant Trail; livestock relished the beans. In the *Botany of the Boundary*, a 9-page appendix in Emory's 1857 report, Parry wrote at length about Mesquite. "In



**Figure 16.** Desert Agave (*Agave deserti*) in bloom, Anza-Borrego Desert State Park. Parry wrote that this Agave was "the main dependence for food of the Indians" living in the San Felipe Valley in 1849-50.

some situations it forms thorny and impervious thickets, but it is usually sufficiently scattered to permit an easy passage for man or beast... As an article of fuel it is scarcely inferior to hickory".

In discussing Mesquite, Parry mentioned that the "principal undergrowth" was a plant he called *Tessaria borealis* that we today know as *Pluchea sericea*, Arrow Weed, and which you see growing in thickets around creeks as in Sentenac Canyon and Coyote Canyon. That he cited such plants reminds us that the expedition spent most of its down-time setting up camp etc. where there was water.

Even more important than Mesquite as a forage plant was the Common Reed (*Phragmites australis*), called *Carrizo* in Spanish and simply Cane by many Americans. At the time Parry classified it as *Arundo phragmites*, suggesting similarity to *Arundo donax*, the aggressive weed of California's riparian habitats; *Phragmites*, though a world-wide species, is believed to be native in our region and is much smaller and softer than the towering *Arundo* that invades our waterways. Travelers would harvest the *Phragmites* at water-holes and pack it for the animals; it was "the principal source of hay collected by the emigrants for their grassless journey".

Grama Grass, probably *Bouteloua aristidioides* or *B. barbata*, grew abundantly around Camp Salvation in the Imperial Valley, such that Parry called the site Grama Grass Camp. It often grew in the shadow of Creosote Bush, and was an "evanescent but highly nutritious fodder" for the animals.

In describing the natural habitat in the desert away from creeks and wa-



**Figure 17.** Mesquite growing in Anza-Borrego Desert State Park. In 1849 its fruits (inset) were prized as food and fodder. Wood was used for fuel.

ter-holes Parry frequently cited indicative plants like Creosote Bush (*Larrea tridentata*) and Ocotillo (*Fouquieria splendens*). "The *Larrea* is the only shrub" on the desert plain, he wrote while at Grama Grass Camp around Calexico. "With its box-like green [it] sets off the dry desert like an elegant pleasure ground, more striking from contrast." Rarely does one hear Creosote Bush so favorably described.

Earlier, on September 19, 1849, as the expedition headed east from San Felipe, Parry caught his first glimpse of Ocotillo (**Figure 18**). "There is also a singular shrub with stiff stems rising in a bunch from near the ground thickly set with thorns and in the axis of each thorn a bunch of leaves, and no branches, giving a singular appearance." He must have found the species in the botany-books he traveled with, as subsequent entries refer to it as *Fouquieria*. It was a constant companion for the next two-and-a-half months. On Parry's last night in the desert, when he and others are believed to have camped in Rockhouse Canyon (**Figure 12**), he wrote of the now-familiar plant: "Tied our horses to the *Fouquieria* and stretched to a blazing fire of the same material, rolled up in our blankets." Again - for those of us who live on the other side of the mountains - it may take some adjustment to think of Ocotillo as such a friendly, useful plant.

The **Notebooks** refers to dozens of other desert-plants you surely know. Having accompanied the 1849 Whipple Expedition, Charles C. Parry became the first trained botanist to leave a detailed record describing the natural landscape of our San Diego County desert.



**Figure 18.** Ocotillo (*Fouquieria splendens*) in Anza-Borrego Desert State Park; it grew to be a familiar plant to Parry and his colleagues.