

THE 1850 DISCOVERY OF THE TORREY PINE

BY JAMES LIGHTNER

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Cover photographs:

Torrey Pine (*Pinus torreyana*), Torrey Pines State Reserve, La Jolla

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

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.

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

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.



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Good afternoon. Thank you for being here today, and thank you to the San Diego Public Library for hosting this event.

I'm James Lightner, the author of these two books. *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. One of the noteworthy plants is the Torrey Pine or *Pinus torreyana*, native here in La Jolla. Here is a picture of a tree growing in Torrey Pines Reserve at the north end of town [cover].

The Torrey Pine is one of the most rare trees in the world in the sense that its natural range is limited to a few square miles here and on Santa Rosa Island west of Ventura. I'll talk a bit more about the range later.

Our second book is *Parry's California Notebooks 1849-51*, which was just published this year. This is an annotated transcription of the notebooks or diary of Charles Parry, the first American doctor, scientist and naturalist to survey widely in San Diego County. Here is a picture of Parry in 1865 [Page 1]. He came to San Diego in 1849 when he was 26.

Parry spent much of his life in Iowa. I discovered in 2013 that the Iowa State University Library had Parry's original notebooks in its archives and apparently nobody had studied them. So I obtained permission to transcribe and publish them. The librarian at Iowa State was kind to assist me, as the contents are historically significant for us here in California.

The *Notebooks* contains Parry's daily reflections on his work and observations in our area as well as about 200 historical and scientific footnotes, and also transcriptions of Parry's letters to Dr. John Torrey from the same period. Torrey was a medical doctor, chemistry professor, famous plant taxonomist, and Parry's teacher in New York.

We also publish this booklet, *San Diego County Native Plants in the 1830s*, which gives extensive background on an important decade when the territorial government secularized the California missions.

Today I'm going to talk about Parry's discovery of the Torrey Pine – where he found it, et cetera - but first I want to give some historical context.

In 1846 the Mexican-American War got underway and Americans started coming to San Diego in significant numbers. Commodore Stockton came by ship; General Kearny came overland from Santa Fe; the Mormon battalion followed Kearny, and more troops and immigrants followed.

As you know the United States won the war. In February 1848 the two nations signed the Treaty of Guadalupe Hidalgo and a great deal of territory was purchased by the USA, including all of California.

As I said a moment ago, Charles Parry came to San Diego in the summer of 1849 when he was 26. He was a medical doctor who was also a skilled botanist and geologist. *Parry's California Notebooks* starts with a letter Parry wrote to Torrey in January 1849, in which he tells Torrey he intends to join a wagon-train to California if he can't get a job with the government to go there. Like so many Americans, Parry was attracted to California by word of the Gold Rush and the fertile land and climate.

Torrey arranged a job for Parry with the US-Mexico Boundary Commission. Parry traveled by ship to Panama then crossed the Isthmus overland, then took another ship up to California, arriving in San Diego on July 13, 1849. The Commission's task was to mark the new border. Parry's superior was Major William Emory of the Army's topographic corps.

The back cover of the Parry book lists a few of the interesting adventures he wrote about while in California. I particularly enjoy his account of riding by mule from San Diego up to Monterey; his visits there around Monterey; his climbing Cuyamaca Peak to see the Sugar Pines and then camping with Indians in today's Cuyamaca State Park; venturing out southeast of Jacumba to discover the Four-leaf Pinyon Pine there; climbing Palomar Mountain alone with an Indian guide from Pauma Valley at a time when there were Grizzly Bears in San Diego County; and his trips across the Colorado Desert to Yuma and back. And of course his discovery of the Torrey Pine. On all Parry's expeditions he made extensive notes and collected plants.

So the Boundary Commission was tasked with fixing two points, one at the coast and one at the Colorado River, then marking a line between them. **Figure 2** is a close-up of Emory's map from the Commission's Report of the 1850s, showing the two points and the boundary line.

The first point was 3 miles south of San Diego Bay, on the south side of the Tijuana Rivermouth. The second point was at the junction where the Gila River flows into the Colorado River. The Colorado carried a lot of water in those days before dams and agriculture and our metropolis.

Parry worked with Emory's team there in Imperial Beach and was part of the expedition that traveled across the desert to the Colorado River in the autumn of 1849 to mark the Gila-Colorado junction. Many emigrants were moving west across the desert at the time.



Figure 2. 1850s Boundary Commission Map showing new boundary line.

After those two points were agreed with the Mexicans, the Americans had to find the azimuth and conduct astronomical surveys to mark the line. Parry was not much involved in that part of the work or in setting monuments. So he had a bit of time for exploring in 1850.

Finding the Torrey Pine

Parry discovered the Torrey Pine on June 26, 1850 while doing a geological survey. Word had reached Major Emory that there was coal in the ground near the mouth of the Soledad Valley. It would have been a bonanza to find a viable deposit of coal in San Diego. As Parry was the government's on-site geologist, Emory sent him to check it out.

Parry wrote in his notebook at camp that evening of June 26, 1850 of making the trip to Soledad, looking at the coal, and finding the Torrey Pine. **Figure 3** is one of his original notebook pages that I transcribed, showing his fine 19th century cursive.

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is very striking - dropping into the Soledad valley we found the stream nearly dry & the ground which afforded such luxuriant pasturage, dry & scant. in moist places the *Anemopsis* was growing and the side hills were covered in spots with the leafless stalks of Mustard gone to seed - taking down the valley some 2 miles to its wide mouth opening on the sea beach we wind round the high bluff on its northern side its base washed by the high tides some quarter of a mile up we come on the coal diggings - the bluff here rises

Figure 3. Excerpt from Parry's original notebook for June 26, 1850.

You see at the top the mention of the Soledad Valley. That is what we today call Sorrento Valley plus the Penasquitos Marsh west of the Interstate 5 - 805 merge. The best way to imagine Parry's route from Old Town to the Soledad Valley is to think of heading north on I-5, but instead of driving your car on a 300-foot wide freeway you ride a mule along a 6-foot-wide dirt trail. You pass False Bay or Mission Bay, which is a giant muddy lagoon, then you continue through Rose Canyon, pass San Clemente Canyon, then you quit the canyon to veer north over the hill until you finally descend rather steeply toward the present Sorrento Valley station, just past Genessee. **Figure 4** is a close-up section of the oldest USGS Topo Map I have been able to find, from 1901.

You can see on this 1901 map a road along the top of Torrey Pines mesa through the park; of course that road was not there in 1850. In fact I have found no evidence of any significant trails through coastal La Jolla in the early or mid-1800s. All the travel was occurring east of Mount Soledad. Neither was the railroad there across the valley; it came in the 1880s.



Figure 4. USGS Map from 1901 showing Soledad Valley and area.

From the junction at Sorrento or what was then called Soledad, travelers like Parry had some choices in the 1800s. The main north-south road – “El Camino Real” - continued through Del Mar Heights towards Encinitas. Then there was a very important eastern road through Penasquitos Canyon to Rancho Bernardo, San Pasqual, Ramona, Santa Ysabel, San Felipe and eventually to Yuma and Santa Fe.

From Soledad there were probably other trails into Carroll Canyon, Lopez Canyon and McGonigle Canyon. Then there was a trail west, down the wide valley to Torrey Pines State Beach, which Parry took that day.

I should emphasize that the Soledad Valley was very important in early San Diego history, and not just as a junction of the two major roads north and east. Because the missions controlled the fertile inland valleys, the people who lived in Old Town, including the presidio guards, needed their own areas for ranching and agriculture. The Soledad Valley was the most important nearby valley along the coast, and it had abundant water from the canyons that feed it. So it was very deliberately included in the area of the original San Diego pueblo incorporated in the mid-1830s. People who weren't associated with the missions used the Soledad Valley to graze their animals and grow food.

Figure 5 is a hand-drawn map from the Mexican period showing the northern limits of the San Diego pueblo. You can see that the *californios* who established the pueblo intentionally included the Soledad Valley, stretching the town's boundaries quite a ways north from Old Town. This means, unfortunately for those who'd like La Jolla to secede from San

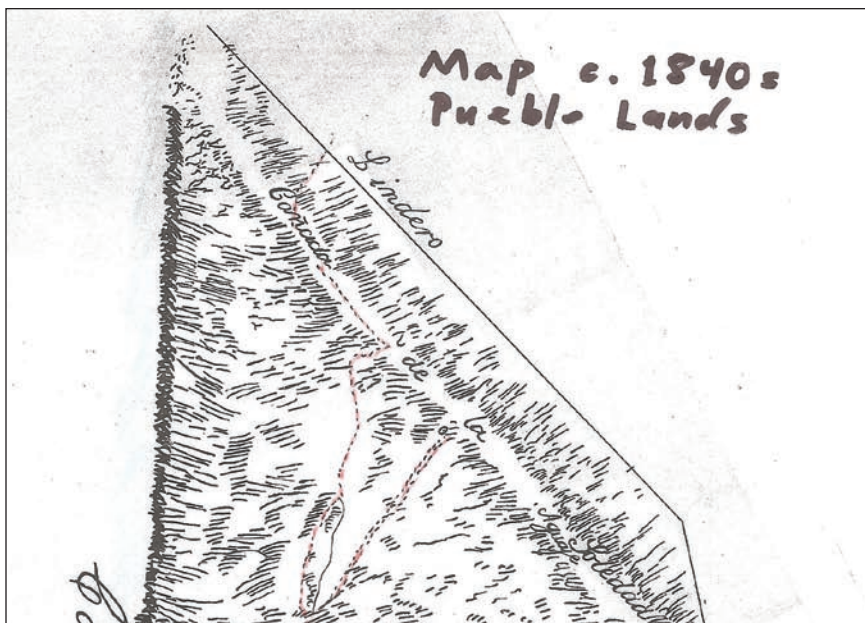


Figure 5. Excerpt from Mexican-era map outlining San Diego pueblo.

Diego, that all of La Jolla has been integral to San Diego since the day the city was founded.

I think the main horse-trail west to the beach was probably on the northern side of the valley, just as Carmel Valley Road is on the northern side today. **Figure 6** is a current photo of the Soledad Valley as it opens towards the beach, and **Figure 7** is a photo looking back up the valley from the beach. Despite all the disturbance from the railroad, the coast road, et cetera, you can see why it was so attractive in the 19th century.



Figure 6. Present view of Soledad Valley west toward Pacific Ocean.

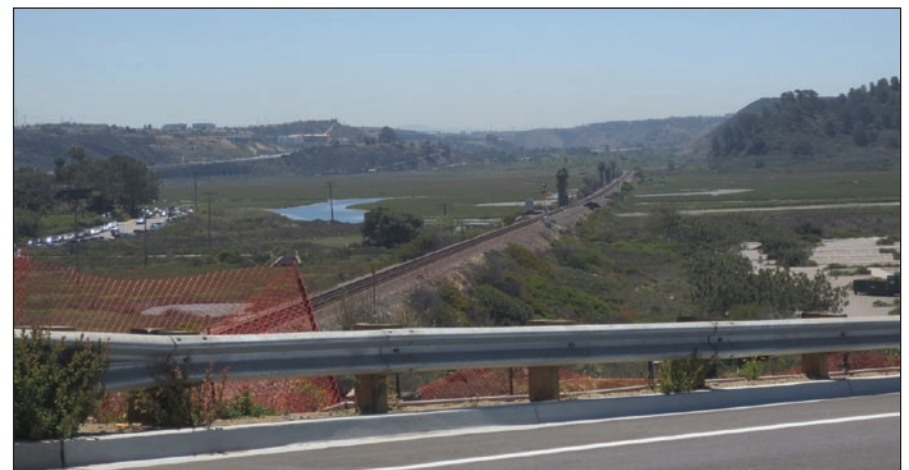


Figure 7. Present view of Soledad Valley southeast from coastal road.

So Parry made it out to Torrey Pines State Beach on June 26, 1850. Here are a few excerpts from his text, transcribed on Page 93:

"Taking down the valley some 2 miles to its wide mouth opening on the sea-beach we wind round the high bluff on its northern side, its base washed by the high tides. Some quarter of a mile up we come on the coal diggings...

About ten feet above the high-water mark the seam of lignite makes its appearance...

Near the digging, in sheltered places on the bluff, I was surprised to meet with a new species of Pine."

As I originally transcribed this – where Parry says "we round the high bluff on its northern side" – I envisioned Torrey Pines Headland by the entrance to the Reserve. You all probably know that magnificent headland. I assumed, or jumped to the conclusion, that Parry was there by the headland by the entrance to the Reserve today. **Figure 8** is a photo of the Torrey Pines headland on the southern side of the Soledad Valley.

Well, never assume. It turns out Parry was in Del Mar when he discovered the Torrey Pine.

A local naturalist named John La Grange was the first person to suggest to me that Parry was not in La Jolla when he discovered the tree. Mr. La Grange read Page 93 of the **Notebooks** and immediately focused on the words "a quarter of a mile up" and concluded Parry was at Anderson Canyon, which is a quarter mile north of Soledad Creek. "Up" to Mr. La Grange obviously meant "north".

Figure 9 is a current view of Anderson Canyon by the beach and **Fig-**



Figure 8. View south towards Torrey Pines headland in La Jolla.

ure 10 is a view of the coast on the Del Mar side of the valley.

I hesitated to accept that Parry was in Del Mar. I think my imagination was hindered by all the development along the coast there today. The railroad now cuts right along the bluffs where Parry surveyed. You can see what a serious disturbance it makes, and you can see the big seawall at the base of Anderson Canyon and the exotic Pampas Grass growing in that arroyo. Also, settlers of Del Mar in the early years pretty much cleared all the trees and shrubs along the bluffs to build their town. The bluffs of Del Mar just don't convey the majestic natural scene that we see



Figure 9 (top). Anderson Canyon. **Figure 10.** View north to Del Mar.

to the south on the La Jolla side.

In his notebooks and in subsequent accounts of his discovery Parry does not specify where exactly he was when he first found the pine, so I spent a fair amount of time investigating the question; I think Mr. La Grange did as well. While John's theory was persuasive, for a long time I was not fully convinced. "Up" does not have to mean "north". Bits of coal have been found in La Jolla as well as Del Mar, and Parry's geological description might apply on either side of the valley. There is a prominent ravine with pines near Flat Rock in the Reserve, about a mile south, and other ravines closer to the valley might have eroded after 1850.

The 1850 Coutts Map

I was finally satisfied that Parry was in Del Mar after coming across an 1850 map hand-drawn by Lieutenant Cave Coutts. Coutts was an Army officer while Parry was in San Diego. He led the military escort of the 1849 expedition to the Colorado River and later became a prominent lo-



Figure 11. Excerpt from Coutts' 1850 Map showing Coal Mine in Del Mar.

cal citizen. So Coutts worked for Emory and knew Parry, and he kept a lot of notes and drew a number of maps. On one of his maps Coutts marked "Coal Mine" on the coast NORTH of the Soledad Valley, in present Del Mar. I had to get a magnifying glass to see it.

Figure 11 is an excerpt from the Coutts map with some coloring added to make it easier to read. The actual drawing is published very small in a rare book and covers most of Southern California. In any case, if you look carefully you see "Coal Mine" written there just north of the Soledad Valley. After I saw that little map I threw in the towel and accepted that Parry found the tree in Del Mar.

One of the interesting things John La Grange alerted me to is that coal is still visible in the cliffs by Anderson Canyon. It is a thin seam, which is why Parry reported back to Emory that the deposit was not viable for a mine. **Figure 12** is a photo of coal in the cliff by Anderson Canyon.

Before opening up to your comments and questions I would like to say a few words about what it means to "discover" a plant, and then something about the historical range of the Torrey Pine.



Figure 12. Coal in cliff close to beach, Anderson Canyon, Del Mar.

When we say “discover” we mean for science. People had seen Torrey Pine trees and harvested their nuts and wood for centuries. The 1602 Palacios map of San Diego marks Torrey Pines headland as *Punta de Arboleda* – forested point, suggesting Europeans saw the trees as early as the 16th century. And several weeks before Parry saw or collected the Torrey Pine, a colleague of his, John Lawrence LeConte, asked him what kind of pine was growing up there by Soledad. So obviously people knew there were pine trees there and they exploited them for nuts and wood.

What Parry did to discover the tree was collect specimens, write out a scientific description of its traits, give it a name, and classify it within the Plant Kingdom.

Parry noticed the pine was unique. As you will see if you read his notebooks, he examined quite a few species of conifers in California so he knew this one was different. He named it after his mentor, Dr. Torrey. He then packaged his notes and collection and sent it off to New York. Torrey published the species as part of the Boundary Commission’s Report later in the 1850s.

Figure 13 is an original specimen Parry cut in 1850, mounted on an herbarium sheet now stored at the New York Botanical Garden. You can see the little envelope in which seeds are kept, and there are bundles of pine needles fixed to the sheet. The Torrey Pine is unusual in part because it has 5 needles in a bundle. You can also see the label says “Soledad near San Diego, 1850,” but it doesn’t tell us where near Soledad. We have had to piece all that together.

Historical Range of *Pinus torreyana*

Regarding the historical range of the Torrey Pine, I mentioned our understanding that the native range of the plant is quite limited, to a small stretch of coast here in San Diego County and a part of Santa Rosa Island-ald. I wanted to share a few thoughts about that and why it is difficult to know precisely how extensive the range was before the Spanish first came to San Diego in the late 1700s.

In 1850 there were not many trees growing on the inland sides of the Soledad Valley. That is why Parry did not immediately notice a forest of pines growing on the western and southern sides of the valley as he made his way to the coast on June 26, 1850. By contrast, if you look today, you see a great number of mature pines as you head to the beach.

Recent academic work including censuses and aging of trees in the Reserve indicates few of the pine trees we see today were growing in the 19th century. I think the Torrey Pines in the Reserve have probably benefited from protection and from our eagerness to see them spread. Most of the trees we see are well under 100 years old.

And when we look at photos of the Soledad Valley from the time the railroad was built, the land is barren; there are not even many shrubs. In



Figure 13. Original type specimen collected by C.C. Parry in 1850 and sent to Dr. Torrey in New York. (Sheet courtesy N.Y. Botanical Garden Herbarium; image courtesy San Diego Natural History Museum Herbarium.)

researching our book about the 1830s I learned that local inhabitants in the 19th century regularly cut down native plants for wood and fuel and burned brush to clear and create pasture. In the old days there was no perceived need to preserve native trees or shrubs. On the contrary, the wild plants were usually an obstacle to grazing, agriculture and other basic needs. It is helpful to put yourself in the boots of *californios* and Indian laborers who tended cattle and sheep in the valley or grew crops there in the 1830s. They needed open land for food. And then they built fires every evening and probably cooked up great *asados* with fresh beef. They would have cut down all the Torrey Pine wood and Manzanita they could find nearby to use for their daily needs. Such cultural reasons may help explain why the hills around the Soledad Valley, and for that matter many of the important valleys in our region, were more open historically than they are today.

A second observation is that the cliffs of coastal Del Mar, which were of course remote from the valley proper, may have had significant numbers of trees in the mid-19th century.

Parry came back to San Diego with George Engelmann in 1882 and spent time looking at Torrey Pines again, checking their habitat and collecting new specimens. Then in a letter Parry addressed to San Diego's Society for Natural History in November 1883 he wrote:

"This pine, so far as is known, is confined to a coastline of not more than four miles, lying between San Dieguito and about a mile below Soledad and extending scarcely a mile inland."

When Parry says San Dieguito he means the mouth of the San Dieguito River at the north end of Del Mar. The range Parry describes skews the tree's habitat quite a ways north. **Figure 14** shows the 1901 USGS topo map I put up earlier with a range area marked approximately as Parry describes.

In his 1883 letter Parry does go on to say that the greatest concentration of trees was in the area around Torrey Pines headland, in the present Torrey Pines State Reserve, but he must have seen a number of trees growing along the coast of Del Mar, perhaps as far north as the Race Track. Today there is probably no way to estimate how many trees were growing in Del Mar before the town was developed at the end of the century. In any case, before doing this research I would have guessed the pine's historical range started at Torrey Pines headland and rather extended south, through the golf course and into La Jolla. That does not appear to have been the case.

I think I will leave it there. Thank you for listening. I'd be pleased to answer any questions you have as best I can.

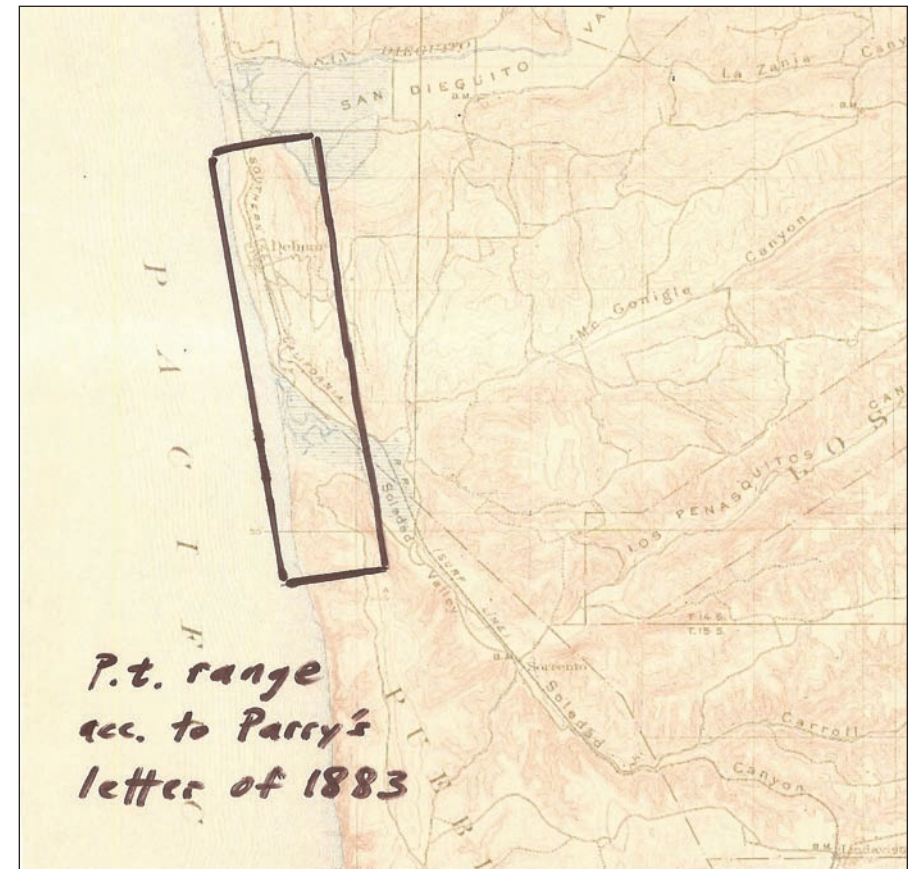


Figure 14. Approximate range of *Pinus torreyana* as indicated in Parry's 1883 letter addressed to San Diego's Society of Natural History.