



# LIME KILN CHRONICLES

Newsletter of the Friends of the Cowell Lime Works Historic District  
University of California, Santa Cruz

## The Great Cowell Quiz of 2023

How well do you know the history of the Cowell Lime Works Historic District? Test your knowledge with this short quiz. Answers and explanations are on pages 6 and 7. Be careful! A few of them are tricky.

1. **Lime was first manufactured in this region under the direction of**

- A. The Uypi Indians
- B. The Spanish
- C. The Californios
- D. Yankees

2. **The firm of Davis and Jordan (Cowell's predecessor) started making lime here in**

- A. 1850
- B. 1853
- C. 1860
- D. 1866

3. **Oxen were used to**

- A. Haul rock from the quarries to the kilns
- B. Haul cordwood to the kilns
- C. Haul barrels of lime to the wharf in Santa Cruz
- D. All of the above
- E. None of the above

4. **Davis and Jordan's largest ox-drawn wagon for hauling lime could carry**

- A. 1 ton
- B. 5 tons
- C. 10 tons
- D. 20 tons

5. **After selling his half of the business to Henry Cowell, Albion P. Jordan, his wife, Mary, and their children moved to**

- A. Southern California
- B. Florida
- C. Maine
- D. New York



Funding from memberships made possible this new interpretive sign for the Cardiff Shed, installed this past Winter.

6. **After Isaac Davis's death in 1888, Henry Cowell**

- A. Continued to keep the name Davis & Cowell
- B. Changed the name to Henry Cowell & Sons
- C. Changed the name to Henry Cowell & Co.
- D. Changed the name to Henry Cowell Lime & Cement Co.

7. **Besides making lime, Henry Cowell made money by**

- A. Dealing in secured mortgages
- B. Mining rock for paving streets
- C. Killing Alaskan fur seals for their pelts
- D. All of the above
- E. None of the above

8. **Pot kilns are called this because**

- A. They were also used to heat pots of stew.
- B. They were also used to dry and process marijuana leaves.
- C. Students smoked pot in them in the late 1960s before they were fenced off.
- D. The inside is shaped roughly like a giant pot.

(continued on p. 3)

***In the Newspapers, 100 Years Ago . . .***

**January 1, 1923.** George Hernandez, native of Watsonville . . . and in his later years an actor on both stage and screen, died in a Los Angeles hospital. He played a prominent part in “The Danites,” which was produced by Selig [a movie company] on the **Cowell** ranch near Santa Cruz ten years ago.

**February 21, 1923.** A number of fine bred horses belonging to **S. H. Cowell** will be seen in competitive races during the coming season on the California circuit.

**March 5, 1923.** The pall of smoke that was in evidence to the rear of the **Cowell** property at the old upper lime kilns yesterday afternoon was due to a fire which was started in Cave Gulch to burn a large acreage of greasewood and heavy underbrush.

**March 10, 1923.** Santa Cruz experienced some rather freakish weather yesterday, and on several occasions when it was raining in certain portions of the city the sun was shining in others. In some instances, the rain was accompanied by hail and a few flakes of snow. This materialized on upper High Street near the city reservoir, and at the **Cowell** lime quarry. The fall of snow in the mountains was very light and melted almost as soon as it reached the ground.

**March 16, 1923.** Another exceptionally low tide prevailed yesterday afternoon and pedestrians found it possible to walk around the **Cowell Point** as far as the lighthouse.

**April 10, 1923.** Belief prevails . . . that Dan Hickey . . . was accidentally drowned some time during the early part of last evening. Before his health failed him, he followed up his trade as a cooper and was one of the veterans in this line with the **Henry Cowell** lime company.

***New and Renewing Members***

- |                          |                          |
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| Richard Hyman            | Janet & Richard Schwind  |
| Virginia & George Jansen | Kathleen Shaw            |
| Patricia Johns           | Frank Zwart &            |
| Alisa C. Klaus           | Julia Armstrong Zwart    |

***Stanley D. Stevens***

Retired UCSC map librarian Stan Stevens passed away last November at age 88. Stan was a member of The Friends from its founding and made immense contributions to the study of local history. His focus was on indexing and compiling historical information to make it more



Stan at the 2015 History Fair.

accessible to researchers. He was chair of the publications committee at the Santa Cruz Museum of Art & History for many years and in 2007 oversaw the publication of the book *Lime Kiln Legacies: The History of the Lime Industry in Santa Cruz County*. For a brief biography, visit the Researchers Anonymous website: <https://researchersanonymous.weebly.com/history-historians.html>

The *Lime Kiln Chronicles* is published twice each year (Spring and Fall) by the Friends of the Cowell Lime Works Historic District



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9. The lime manufactured here was used mostly for

- A. Making garden soil less acidic
- B. Removing impurities from sugar
- C. Mixing with sand and water to make mortar
- D. As an additive in making paint

10. Henry and Harriet Cowell had

- A. 4 children
- B. 5 children
- C. 6 children
- D. 7 children

11. Daughter Sarah Cowell died in 1903 on the Santa Cruz ranch

- A. Falling from a horse
- B. Falling into a lime kiln
- C. From falling rocks in a quarry
- D. In a buggy accident

12. While living in Santa Cruz, the Cowell children attended

- A. Laurel School (now London Nelson Center)
- B. Westlake School
- C. Mission Hill Middle School (then a junior high)
- D. Bayview School

13. At the Cook House where workers ate their meals, Henry Cowell always had

- A. French cooks
- B. Chinese cooks
- C. Italian cooks
- D. Portuguese cooks

14. The oldest district structure that has been dated is

- A. The Continuous Kiln
- B. The Cook House
- C. The Cardiff House
- D. The Barn Theater

15. Henry Cowell died several months after being shot by

- A. A deranged artist
- B. An author of crime novels
- C. A musician who played the flute
- D. A disgruntled blacksmith

16. At the time of his death, Cowell was said to be worth

- A. 1 million dollars
- B. 5 million dollars
- C. 20 million dollars
- D. 100 million dollars



Two of the Cowell sisters in front of what is now the Cardiff House, taken before 1903. (Special Collections, UCSC library)

17. In the early 1900s Portland Cement began to replace lime for construction, so Ernest Cowell built a cement plant in

- A. Davenport
- B. San Juan Bautista
- C. Near Mount Hamilton
- D. Near Mount Diablo

18. The Cowell children

- A. Never married
- B. All attended the University of California
- C. Mostly did not marry except for one
- D. Were all deeply involved in the family business
- E. None of the above
- F. Only B, C, and D

19. Lime manufactured in Santa Cruz was shipped as far away as

- A. Hawaii
- B. Alaska
- C. Central America
- D. Japan
- E. New York

20. Henry Cowell's children donated considerable money to

- A. Hospitals
- B. Museums
- C. Libraries
- D. Mining and engineering schools

21. The University of California acquired the UCSC campus land by

- A. Condemnation
- B. Purchase from Henry Cowell's son, Harry
- C. Purchase from the surviving Cowell sisters
- D. Purchase from the S. H. Cowell Foundation
- E. Donation from the S. H. Cowell Foundation

(Answers on pages 6 and 7)

## Lichens Add Character to District Structures

By Eric Bitter

As Santa Cruz county sees the rainy season subside, straw-colored fields turn green, flowers emerge, and lichens litter the landscape both high and low. Lichens can be found anchored to wood and rocks, hanging in the branches of trees, and sometimes lying freely on sidewalks or pavement. Lichens occur throughout the year, and are common at the Cowell Lime Works Historic District. Ranging in color, size, and shape, they add to the aged architecture around what once was a bustling lime business.

While sometimes taking on the appearance of a plant or flattened flower, a lichen is neither. It is a composite organism composed of fungi living with algae or cyanobacteria. This mutualistic relationship benefits both partners. Lichens can be seen on stones, soil, trees, fences, sidewalks, shrubs, and many other surfaces that offer the right amount of sunlight. Lichens are typically found on just about any undisturbed surface. However, lichens are a diverse group of organisms and have different growing requirements depending on the species. Whether it is attached to wood or swaying from the branches of trees, lichen can help supply birds with nesting materials and be a food source for many animals. Moreover, certain lichens offer medicinal properties which have been utilized for

hundreds, and possibly thousands, of years in the treatment of various ailments.



Foliose lichen.

Taxonomists, in various organizations, have put the number of lichen species approaching 20,000; worldwide. However, when considering the percentages of fungi throughout the world, new species of lichen

are being identified and their numbers grow each year. According to the California Lichen Society, California hosts nearly 1,900 species of lichens.

Lichens typically fall into three basic categories—crustose, foliose, and fruticose—each having their own structure, shape, and environmental preference to call home. Generally, crustose lichens are small and often

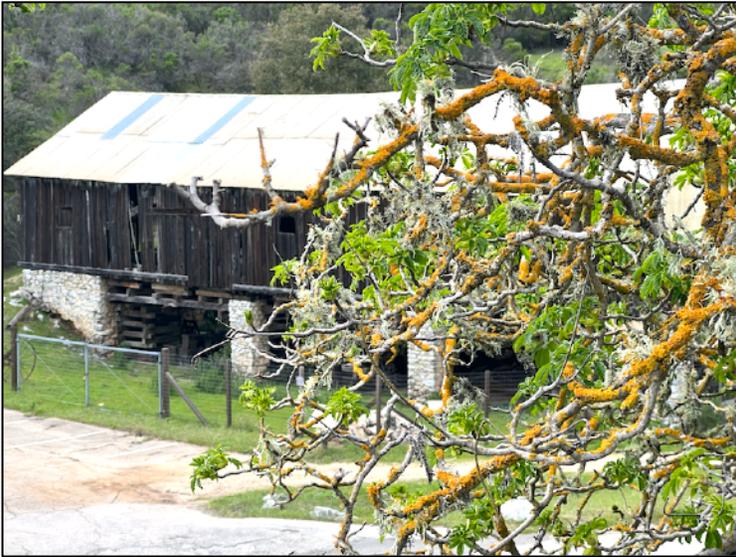


Lichens growing on the old picket fence near Cabin A. (Photo by Eric Bitter)

scaly, finding their home on rocks and tree bark. Don't bother trying to peel them off of the substrate, as they firmly attach themselves to the surface. In comparison, foliose lichens are leafier-looking. Growing in round lobe formations and attached only by small rootlets, foliose lichens are easier to pull off of their substrate. Fruticose lichens can be recognized by their small round branches of a fungus with algae inside. These shrubby lichens can have unusual patterns of vertical growth that resemble a beard or small bush. In some cases, they may be attached to a surface at one simple point or not attached at all.

Unlike plants, lichens lack vascular systems that transport water and nutrients to various parts of the organism. Once affixed to a substrate, lichens absorb water but can dry out quickly. Surprisingly, lichens can survive even after losing as much as 98 percent of their water content. Once dry, they become compacted, and opaque, and can easily detach from their substrate. One can see dried, loose lichens on the ground or sidewalks. Yet, exposed to rain, fog, or dew, along with dust to provide some minerals, lichens begin growing again with the help of sunlight.

As one imagines what the environment looked like during the productive years of Cowell's lime kilns, the surrounding forest of redwoods, oaks, and other types of hardwood trees was home to mosses and lichens. Across the landscape, lichen could be found covering boulders, rocks, bushes, and hardened soil. Based on what we know today, deer, birds, and insects, use lichens as building materials for shelter or nests. Some



Lichens growing on the Buckeye tree near the cabins. (Photo by Eric Bitter)

types of lichens were a source of food. Due to the lack of detailed records, there is no way of knowing the number of species or density of lichens found in the 1850s. Moreover, lichens are greatly influenced by temperature, air quality, and moisture content in the air, which would have a profound impact on their growth back then as it does today.

Most lichens grow very slowly—some only a few millimeters in a century—and some individual lichens are believed to be among the oldest living things on earth. The study of lichens, or lichenology, began in the 19<sup>th</sup> century by a Swiss botanist by the name of Simon Schwendener. However, Erik Acharius, a Swedish botanist, published the first book on the taxonomy of lichens, which posthumously gives him the title of “the father of lichenology.” Researchers on lichens continue to discover new species today.

During our walk around the Historic District with *The Field Guide to California Lichens* book helping identify the different species, I read that, “Most lichens are sensitive to the chemistry, especially the acidity of their substrate. Because of this, limestone (and concrete) support a different species mix than granite. The lichens commonly found on pine bark, which is relatively acid, are different from the ones that grow on maples, which are more basic.” Limerock is more alkaline and acts as a neutralizing agent to treat soil high in acid. So, it sounds like the right conditions for growing lichens in, and near, the Historic District was very possible during the time the kilns were active.

In the 2019 Spring/Summer edition of this newsletter,

Frank Perry methodically identified various structures found in a black and white photo of the Historic District dating back to sometime around 1910. In that picture, Frank points out, “The Buckeye tree in this picture is in the same location as the current Buckeye and is presumably the same tree. Buckeyes are a common native tree and produce spikes of fragrant white flowers in the spring and large nuts in the fall.” Pictured today in the photo is that same Buckeye tree with orange-colored *Caloplaca ignea* lichen covering its limbs and sage-colored fruticose lichen hanging from its branches.

Although there is little documentation stating that the Indigenous Peoples of the area utilized lichens, immigrants to California brought with them some knowledge and usage of lichens in the form of medicines, dyes, decorations, and ways that sound foreign to our modern ear. For example, Julie Sidel, a local California State Parks interpreter, reminded me that the Santa Cruz Mission State Historic Park has a museum where they have reconstructed a family home. Within the dwelling is a baby’s cradle. Within the cradle is a sheepskin blanket and at one end of it is a ball of lichen. Some people ask her if it’s used as a pillow. She replies, “Oh no, this is for the other end! That [lichen ball] is the original disposable diaper because lichen is so absorbent. So if you put in dry lichen, it’s going to absorb liquid from the little one.” This element on the cradle board, and the cradle itself, were probably of Spanish/Mexican influence utilized by Native People.

Now is a perfect time to visit the Cowell Lime Works Historic District and look beyond the remains of what once was an active business where the kilns, cooperage, cabins, and cook house remain. As you examine the dormant kilns, look closely for the *Crostone* lichen that has grown onto the stone. Observe the planks of wood where *Usnea* lichen has found a home. You can also see nearby twigs, branches, and trunks of trees that are used as a stable substrate to collect sunlight, rainwater, and materials needed for the fruticose lichen that is growing here.



Fruticose lichen.

## South Campus Vision Study

The University is continuing to work on the South Campus Vision Study, as reported in last Fall's issue of the LKC. Students, staff, faculty, The Friends, and the public have all had input on this grand vision for the future of the south campus. When completed (probably in June), it will provide a blueprint for improving the south campus, including restoring historic buildings, improving bicycle and pedestrian routes, and generally making the campus entrance more welcoming. We look forward to reporting on this in more detail in our next newsletter.



## Membership Renewal

Last year nearly everyone who renewed their membership did so via our website: [limeworks.ucsc.edu](http://limeworks.ucsc.edu). Consequently, we have decided not to include membership renewal envelopes with the *Lime Kiln Chronicles*. This saves us considerable time and expense. If however, you would like to renew by sending a check, you can still do so by sending it to:

Friends of the Cowell Lime Works Historic District  
Mail Stop PPDO  
University of California  
1156 High Street  
Santa Cruz, CA 95064

**Make the check to the UCSC Foundation and put Friends Cowell Lime Works on the memo line.**

Membership renewal is once a year, either in the Spring or Fall depending on when you joined. If your address label says S23 (Spring 2023) or older, then please renew. If your address label says F23 or S24, then you don't need to renew until then. Of course, additional donations are welcome at any time.

## Answers to Quiz

1. B. Lime was first manufactured here under the direction of the Spanish mission padres. The Indigenous People of the region did not make lime prior to this, but undoubtedly did most or all of the work making it at the mission. The lime was used to seal the walls, ceilings, and floors of adobe buildings.
2. B. Old books on local history list several dates for when Davis and Jordan started their lime business here. The preponderance of evidence, however, points to 1853.
3. D. Oxen were used in all three ways.
4. D. 20 tons. According to an 1858 newspaper account, the wagon was drawn by ten oxen.
5. C. Jordan returned to Maine, where he was born and raised. After he died, the family returned to Santa Cruz, along with Jordan's casket, and he is buried in Evergreen Cemetery.
6. C. Henry Cowell & Co. This name was in use from 1889 to 1898, when Cowell changed it to the Henry Cowell Lime & Cement Co.
7. D. All of the above. Cowell acquired ranches in many parts of northern California by foreclosing on people who owed him money. The mining of bituminous rock is discussed in the Spring/Summer 2013 issue of the *Lime Kiln Chronicles*. An article in an old San Francisco newspaper lists Cowell as being on the board of a company that harvested seal pelts in Alaska.
8. D. The district kilns are oval, but in some parts of the world they are circular like a big pot. They are also known as batch kilns or intermittent kilns because they could only be used to make one batch of lime at a time.
9. C. Although all of these are valid uses of lime, the lime manufactured in Santa Cruz was used mostly in construction. It was the key ingredient in mortar, which was essential for making brick foundations, brick walls, fireplaces, and chimneys.



Ernest Cowell with unknown woman (perhaps his wife, Alice) between 1890 and 1910. (Special Collections, UCSC library)

10. C. The Cowell's had six children, but only five reached adulthood: Isabella (born 1856), Ernest (1858), Samuel Henry (1861), Sarah (1863), and Helen (1866). A boy, Rowland, was born in 1857 but died the following year.

11. C. Sarah Cowell died shortly after she was thrown from a buggy and hit her head on a rock. The accident occurred near Cowell's "upper kilns," what are now the kilns at Wilder Ranch.

12. D. Bay View School. This school was established in 1865, the same year the Cowell family moved to Santa Cruz. The other schools were established in the 1900s.

13. B. Henry Cowell and his successors employed Chinese cooks into the middle 1940s.

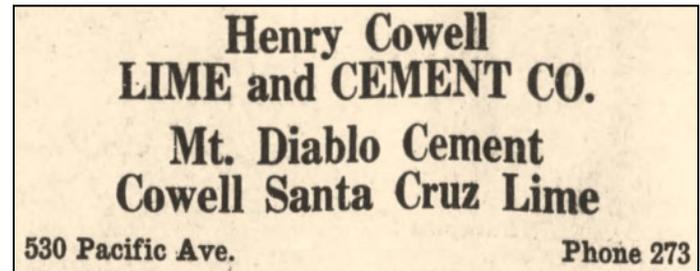
14. A. Continuous kiln. Built in 1861, it predates the Cardiff House (1864), the Barn Theater (1870), and the Cook House (1880s).

15. C. Lee Ingalsbe played the flute with the Raisin City Band. He claimed Cowell insulted his mother in a Merced land dispute. Charged with murder, Ingalsbe was acquitted on the determination by the jury that Cowell died of age-related conditions rather than the gunshot wound received several months earlier.

16. A. One million dollars sounds like a puny amount in this age of Silicon Valley billionaires, but was a huge sum

in 1903 when Cowell died. Based on the average inflation rate of the past 120 years, it would be equal to \$34 million today. This figure is misleading, however, because most of Cowell's assets were land. He owned land in 23 California counties, including 10,000 acres in Santa Cruz County and property in downtown San Francisco. He also had a lime business in the state of Washington. These assets would be worth many hundreds of millions of dollars today.

17. D. Portland cement was the promising new building material of the early 1900s. Realizing this, Ernest Cowell built a cement plant in eastern Contra Costa County, which operated until the middle 1940s. The product was sold under the name "Mount Diablo Cement."



Advertisement from the *Santa Cruz Evening News*, February 11, 1931. Cowell had a retail store on Pacific Avenue.

18. C. Ernest Cowell was the only child to marry. His wife, Alice, outlived him by about 30 years. They had no children.

19. A. Hawaii. The lime was shipped to Hawaii by way of San Francisco.

20. A. Hospitals. While they were alive, the Cowell children made donations to hospitals. Ernest Cowell also left money in his will for a hospital to be built at U.C. Berkeley. It stood until 1973.

21. D. The land was purchased from the S. H. Cowell Foundation, which was established after the death of the last Cowell child, Samuel Henry (Harry) Cowell in 1954. The Foundation subsequently made a substantial donation to the University, and this was used to construct the first college—Cowell College.

# Santa Cruz County History Fair

Movie Cast and Crew, 1921, San Lorenzo Valley Museum Collection



## *Santa Cruz County History Fair*

Saturday, May 13, 2023, 1-5 pm  
Felton Community Hall  
6191 Highway 9, Felton  
Admission Free!

Celebrate Santa Cruz County's diverse history by connecting with local historical and cultural organizations and groups. Enjoy hands-on activities, artifacts, photographs, publications, and more. Nearly 30 local museums, historical societies, and others will have displays and activities.

Friends of the Cowell Lime Works Historic District  
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