

Meet the American who saved the Champagne industry: Missouri scientist Charles Valentine Riley

Riley raced to aid of winemakers with millions of American rootstock after virulent pest destroyed 90% of French vineyards

By [Kerry J. Byrne | Fox News](#)

Charles Valentine Riley of Missouri played a key role in saving the French wine industry — check out his amazing life story.

Raise a toast to an incredible 19th-century [Missouri scientist](#) when you pop that bottle of fine French bubbly on New Year's Eve.

His name is Charles Valentine Riley.

He was [an entomologist](#). He studied bugs. And he saved the Champagne industry. "His manner was enthusiastic, his face beaming with animation, his eyes sparkling, his manner eager," a reporter once wrote of this globally celebrated scientist in 1875.

Riley raced to the aid of shattered European winemakers during an agricultural tragedy that's gone down in history as the [Great French Wine Blight](#). Winemaking in France is rooted deep in the soil — and deep in the soul.



Renowned entomologist Charles Valentine Riley is shown with microscope. From the Charles Valentine Riley Papers at the National Agricultural Library of the U.S.

Department of Agriculture. (Special Collections, USDA National Agricultural Library)

The soul of France was torn apart in the 1860s when its vineyards were invaded by a voracious pest called grape phylloxera. The microscopic aphid feasted on the roots of French grapevines for decades to follow. The insect reduced "vast areas of vineyard to what one winegrower described as rows of bare wooden stumps — resembling huge graveyards," write authors Don and Petie Kladstrup in their 2001 book, "Wine and War."

Phylloxera caused billions in economic damage, with an immeasurable impact on French culture and national identity. Almost every vineyard in France was invaded by phylloxera by the end of the 19th century.

The nation's "wine industry was in disarray," writes Rod Phillips in his 2016 book, "French Wine: A History." "Land under vines had shrunk dramatically, the production of fine and ordinary wines had plummeted, the bottom had fallen out of exports, and vigneron had left the countryside in droves."

France's beloved winemaking tradition was almost lost forever.

Riley, Missouri's first [state entomologist](#) and a passionate scientist-artist, raced to the rescue.

He had discovered that grapevines in his state were immune to the ravages of phylloxera. With his leadership, millions of rootstock from [the United States](#) — including 10 million from Missouri alone — were shipped to France in the late 1800s.

The native European vines were grafted to the robust, bug-resistant American roots.

The French wine industry slowly rebounded, then battled through [two world wars](#) to a full recovery on the strength of American rootstock.

His contribution cemented the trans-Atlantic love affair between winemakers in France and oenophiles in the United States.

Americans consume more [French wine](#) than any people on the planet but the French. We spend nearly \$2 billion per year on vin Francais, consuming about one of every five bottles in the French export market.

We drink Champagne to [celebrate the holidays](#): Seventeen percent of all the Champagne sold in the United States is purchased in December.

"Champagne is the wine of firsts, the wine of victories, the wine of celebrations," wine expert Natalie Maclean told Fox News Digital.

"We use it to christen our children, to launch our ships, and to toast the first day of the New Year."

It might also be used to salute Mr. Riley of Missouri.

Scientist and artist

Charles Valentine Riley was born on Sept. 18, 1843, in London.

He studied art and science in both France and Germany. He moved to the United States at age 17 and became a naturalized American citizen.

His father had died some years earlier, leaving Riley with limited means.

Riley found work on a farm in Aroma Township, Illinois.

He also enlisted in the 134th Regiment Illinois Volunteer Infantry in 1864, one of thousands of "Hundred Days Men" who fulfilled 100-day obligations to boost Union manpower in the darkest days of [the Civil War](#).

Riley became Missouri's first state entomologist in 1868.

Riley found splendor in creatures most people find repugnant.

He brought his science to life with his art, much like his friend, British evolutionary biologist Charles Darwin, as well as pioneering American naturalist John James Audubon.

He captured the creatures he studied in beautiful and detailed hand-drawn images. He wrote passionately of his subjects and found splendor in creatures most people find repugnant.

"I am moved to admiration and wonder as thoroughly today as in early boyhood every time I contemplate within each of these varied and fantastic caterpillars ... is locked up the future butterfly," he wrote of one study.

"Destined fairy like," he added, "to ride the air on its gauzy wings, so totally unlike its former self."

Missouri at the time had a robust and internationally renowned wine industry. Its gorgeous wine grapes sprouted from vines first planted just a few decades earlier by German immigrants.

Missouri's celebrated Stone Hill Winery was the third-largest winemaker in the world in the 1870s. It produced about 1.3 million gallons of wine annually at its peak — the equivalent of 6.6 million standard 750-milliliter bottles.

"Its wines, such as Hermannsberger, Starkenberger and Black Pearl, won eight gold medals at world fairs between 1873 and 1904," according to a 2020 report in [MissouriWineCountry.com](#).

Stone Hill Norton earned "best wine of all nations" honors at the 1873 Vienna World Expo.

With wine so essential to the Missouri economy, Riley found himself at the center of the furious effort to find a solution to the Great French Wine Blight, which confounded officials and winemakers in France.

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"All kinds of ideas were suggested ranging from the bizarre — planting a live toad beneath each vine — to the hopeful — watering the vineyards with white wine," the Kladstrups write in "Wine & War."

"Some growers flooded their vineyards with seawater; others sprayed their vines with a vast array of chemicals or simply burned them. Nothing seemed to work." The desperate French government offered a 300,000-franc award to anyone who could solve the crisis.



Hermannhoff Inn and Winery, Hermann, Missouri, a historic German settlement founded in 1837. Missouri boasted some of the world's best wineries in the 1800s, before losing the industry to Prohibition. (Photo by: Jumping Rocks/Universal Images Group via Getty Images)

The answer lay in Missouri.

Phylloxera were native to the United States — which is why American vines were resistant to their ravages. The pests were unintentionally shipped to Europe in trans-Atlantic trade.

Riley traveled to Europe three times over the next several years to convince scientists and officials of the hope found for the French wine industry in American vines.

But it was no easy task.

"Advocates of American vines faced stiff opposition from defenders of pure French vineyards," according to the detailed 2019 biography, "Charles Valentine Riley: Founder of Modern Entomology" by W. Conner Sorensen, Edward R. Smith and Janet R. Smith with Donald C. Weber.

Riley was opposed by the French scientific elite, government officials and influential growers.

Opponents of Riley's solution, they add, included "much of the French scientific elite in Paris, French government officials and influential growers in Bordeaux and other wine-growing regions."

"Some scientists and officials were unable or unwilling to accept that grafting on to American vines, which were the cause of the catastrophe, was also the solution," Phillips writes in "French Wine: A History."

"Finally, at an international congress on phylloxera held in Bordeaux in 1881, grafting *Vitis vinifera* (French vines) on to American vines was accepted as the best solution," Phillips adds.

Riley had won the battle to save French wine.

The Champagne Riots

Champagne suffered an unusually difficult fate during the Great French Wine Blight.

Champagne is the wine-making region east of Paris. Its sparkling, effervescent world-famous white wine has enjoyed regal status among global consumers for centuries. Reims, an ancient Roman city in the Champagne region, enjoys a distinct role in the history of the French monarchy. Royal approval enhanced the status of the local unique-in-France sparkling wine.

The Nazis surrendered to Gen. Dwight Eisenhower at Supreme Allied Headquarters in Reims on May 8, 1945, marking the end of [World War II in Europe](#).

Beneath the city sits a vast network of chalk and limestone caves, many dating back to Roman times, that enjoy a constant cool temperature and humidity.

Tension exploded into violence with the Champagne Riots of 1911.

The caves today contain the world's supply of Champagne, aging amid dark and graceful isolation, with the domains of some of the world's most famous winemakers above them.

Phylloxera arrived late in Champagne. The area was still battling through the blight at the turn of the 20th century.

Tension caused by decades of struggle exploded into violence.

"Following the ravages inflicted by the phylloxera epidemic in the late 19th century and a seemingly endless series of poor vintages, riots erupted in January 1911," biophysics Dr. James Flewelling wrote in the Oxford Wine Blog.

The Champagne Riots, he adds, "might have degenerated into civil war had they not been cut short by the outbreak of [World War I](#)."

The crux of the issue was the definition of Champagne. Could the French bubbly be made anywhere, with any grapes? Or must Champagne be made in Champagne — with grapes grown in Champagne?

The French government chose to define and then protect Champagne under a system of Appellation d'Origine Contrôlée (AOC) — a name of controlled origin.

Further AOC protections were adopted by the European Union in the 1990s, creating a complex list of products that can be made only in their native region.

The prestige of Champagne had been saved — the wine itself may have been saved, actually — thanks to Riley's ability to conquer phylloxera.

A tragic end

Charles Valentine Riley died tragically in a bicycle accident in Washington, D.C., on Sept. 14, 1895.

He had turned 52 only a day earlier.

"A horse-drawn police ambulance transported the unconscious man a quarter of a mile back to his home," write biographers Sorensen, Smith, Smith and Weber.

"Surrounded by his wife, children and friends, Riley lingered on, with no hope of recovery, until he died shortly before midnight."

His funeral was held three days later.

"Although many Washingtonians were still on summer vacation, mourners filled the mansion," the biographers add.

"Floral tributes covered the casket and overflowed into the living room. At Glenwood Cemetery honorary pallbearers drawn from Washington's scientific elite carried the casket to the Riley family plot."

Riley never got the 300,000-franc prize.

He was awarded the Cross of the Legion of Honor by France, its highest honor in service to the nation.

A statue in Montpellier, France, pays homage to Riley's role in defeating the phylloxera and reviving the French wine industry.

His work in France enhanced his prestige in the United States and around the world.