Nevada
Historical Society Quarterly

Volume 61 | 2018 | Numbers 1-4

Michelle S. Roberts
Managing Editor

Hillary Velázquez & Frank Ozaki
Layout & Design

-
Associate Editor

Diane L. Ahmad
Book Review Editor

Toni Briegel
Manuscript Editor

Brian O'Hara
Proofreader

-
Assistant Editor

Contents

4 Editor's Note

6 Struggles over Nevada's Public Range
The War on "Tramp" Sheepherders, the Taylor Grazing Act, and the Emergence of Basque Identity in the First Half of the Twentieth Century
Iker Saitua

20 Charcoal's Role in Nevada Mining and Forest History: Kilns
Douglas H. Page, Jr., Thomas J. Straka, and Sarah E. Page

53 Opium, Railroads, Surveying, and Figs
The Life of David van Lennep
Alan R. Wallace

75 The Civilian Conservation Corps in its Final Years
Glimpses from Nevada and Beyond
Renée Corona Kolvet

Front Cover: A conical shaped charcoal kiln with a flat apex for a vent cover, located in the Kiln Canyon site, Hot Creek Range, Nye County, Nevada. (*Courtesy of Douglas H. Page, Jr., photo taken May 21, 2016*)

91 Notes and Documents
Rethinking Aurora's Historic Bullion Production
Clifford Alpheus Shaw

Book Reviews

107 *A Tale of Two Bridges: The San Francisco-Oakland Bay Bridges of 1936 and 2013*.
By Stephen D. Mikesell. (Reno: University of Nevada Press, 2017)
Reviewed by Jeff Schramm

108 *Under the Western Sky: Essays on the Fiction and Music of Willy Vlautin.*
Edited by Neil Campbell (Reno: University of Nevada Press, 2018)
Reviewed by Kenneth H. Marcus

110 *All In: The Spread of Gambling in Twentieth-Century United States.*
Edited by Jonathan D. Cohen and David G. Schwartz.
(Reno: University of Nevada Press, 2018)
Reviewed by Daniel Bubb

111 *The Gambler: How Penniless Dropout Kirk Kerkorian Became the Greatest Deal Maker in Capitalist History.* By William C. Rempel
(New York: William Morrow, 2018)

Blood Aces: The Wild Ride of Benny Binion, the Texas Gangster Who Created Vegas Poker.
By Doug J. Swanson. (New York: Viking, 2014)
Reviewed by Geoff Schumacher

113 *The California Trail: Yesterday and Today—A Pictorial Journey Along the California Trail*.
By William E. Hill. (Caldwell, Idaho: Caxton Press, 2017)
Reviewed by Bernard Mergen

115 *Lake Mead National Recreation Area: A History of America's First National Playground*.
By Jonathan Foster. (Reno: University of Nevada Press, 2016)
Reviewed by Petra DeWitt

116 *Interwoven: Junipers and the Web of Being*.
By Kristen Rogers-Iversen. (Salt Lake City: University of Utah Press, 2017)
Reviewed by Christopher Sudol

117 *Faithful and Fearless: Major Howard Egan, Early Mormonism and the Pioneering of the American West.*
By William G. Hartley. (Holladay, UT: Howard Egan Family Foundation and Brigham Young University Press, 2017)
Reviewed by Matthew Bowman

118 *Beebe & Clegg, Their Enduring Photographic Legacy.*
By John Gruber. (Madison, WI: Center for Railroad Photography and Art, 2018)
Reviewed by Jeff Schramm

120 *The Bonanza King: John Mackay and the Battle Over the Greatest Riches in the American West*.
By Gregory Crouch. (New York: Scribner, 2018)
Reviewed by Ronald James

122 *San Francisco's Queen of Vice: Strange Career of Abortionist Inez Burns Brown.*
By Lisa Riggin. (Lincoln: University of Nebraska Press, 2017)
Reviewed by Karen Pastorello

123 *The Small Shall Be Strong: A History of Lake Tahoe's Washoe Indians.*
By Matthew S. Makley. (Amherst and Boston: University of Massachusetts Press, 2018)
Reviewed by Bridger Bishop

124 Cumulative Index – Volume 60

Editor's Note

The *Nevada Historical Society Quarterly* has been published since 1957 and has withstood the test of time for over six decades. The economic downturn in 2008 left the Nevada Historical Society with a skeleton staff and very little time or resources to devote to the *Quarterly*. The publication was another victim of economics during this recession era. It survived due to a core of dedicated editors.[1] Reduced publication costs and limited staff time became the "survival mode" of the *Quarterly,* resulting in various iterations. Some years it remained a quarterly publication (2008-2009), on one occasion it was in the form of three issues (2010), other years saw two issues (2013-2014), and still other years saw only one printed issue (2011-2012; 2015-2017).

As the new Managing Editor, I have grand plans to re-energize the *Quarterly*! Considering accessibility and readership, I am looking at many options regarding the number of annual printed issues and the potential of digital issues. I will keep the readership apprised of changes as they occur. Two printed issues are slated for the year 2019 (not including the one in your hands—this is the 2018 issue). One of the two will be a special issue on Native American Voices. In the year 2020, we will have a special issue on the 100th anniversaries of the 19th Amendment (women's suffrage) and prohibition.

Just as the 1920s were a time of great transition, I suspect the 2020s will take a similar path, not only with changes afoot for the *Nevada Historical Society Quarterly*, but societally as well. As a social scientist, I sense these changes will encompass more widespread acceptance of human diversity in addition to technological advances and intensified global relations. It is my hope that the special issue dedicated to Native American Voices as told by Native Americans in 2019 will contribute to these societal transitions of acceptance. Nevada and the West have been generators of change and hubs of tradition for centuries. While this may seem like an ironic paradox, these two seemingly opposing concepts have helped create the richness of culture, environment, and economies present within the region. In this issue, some of these complexities are discussed through Basque sheepherders and grazing laws, the uniqueness of the Nevada Civilian Conservation Corps, charcoal making and its environmental effects, bullion production, and how a trader from Asia Minor made it to Unionville, Nevada. This issue is full of intriguing articles adding to a broader understanding of the West and its transitions across space and time. Additionally, we have a record number of book reviews—thirteen to be exact! Be sure to check out these reviews for insight into your future book purchases.

I am happy to announce we have two new editors joining our team. Geoff Schumacher, M.A., renowned writer and Senior Director of Content for the Mob Museum in Las Vegas, is our new Associate Editor. Geoff comes with a plethora of publications, including two books, a number of book chapters, numerous articles, and over 30 years of editorial/journalism experience. Emerson Marcus, M.A., State Historian for Nevada National Guard and Public Affairs Officer, is our new Assistant Editor. Emerson joins us with over a decade

of journalistic experience under his belt and a graduate degree in History. I offer a warm welcome and thank you to both Geoff and Emerson for joining our editorial team; their work begins now, as submissions start to roll in for our 2019 issues. If you or someone you know would like to contribute to the *Quarterly*, please refer to our website http://nvculture.org/historicalsociety/quarterly-publication/ for submission details.

Thank you for your support through the years. This publication has withstood the test of time because of YOU—our dedicated readers, members, and editors!

Michelle Roberts,[2] PhD
Managing Editor

Notes

[1]Editorial positions are voluntary and unpaid. Editors-in-Chief such as John B. Reid and Michael Green gave hundreds of hours to maintain this publication during these rough years. Book review editors such as Michael Green and Diane Ahmad also contributed countless voluntary hours. We are so grateful for their dedication and service to the *Nevada Historical Society Quarterly*. Managing editors Mella Rothwell Harmon and Sherlyn Hayes-Zorn likewise were committed to keeping the *Quarterly* in publication.

[2]Michelle comes to the Nevada Historical Society with a background in Anthropology (PhD 2011) and Geography (M.A. 2004). She is the new Curator of Education and Public Programming, plus the Managing Editor of the *Quarterly*. She enjoys teaching as an adjunct professor at the University of Nevada, Reno, and California State University, Sacramento. Her research and writing involves environmental, agricultural, and anthropological topics primarily focused on Southeast Asia where she has conducted research since 2004. Her recent research involves the environmental sustainability and cultural traditions of edible insects (entomaphagy) and plants (ethnoecology). In the past six years her research has encompassed aspects of insect and plant use in the Great Basin.

Struggles over Nevada's Public Range
The War on "Tramp" Sheepherders, the Taylor Grazing Act, and the Emergence of Basque Identity in the First Half of the Twentieth Century

Iker Saitua

Introduction

In April 1927, after the shearing season, Nevada rancher Pete Itcaina sold his annual wool-clip of about fifteen thousand fleeces at 30 ⅛ cents a pound. The *Salt Lake Tribune* reported "the price was the top for this year's clip."[1] For the last few years, Itcaina's high-grade wool commanded premium prices at the market. Immediately after selling his wool crop, Itcaina expanded his sheep operation by purchasing additional land in Elko County (Nevada). He bought a large tract of grazing land extending from Cross Ranch above Deeth to the head of Mary's River where he planned to run 20,000 head of sheep in ten separate herds.[2]

By the late 1920s, Pete Itcaina, a naturalized Basque immigrant, had become a prominent and respected sheepman in Nevada. Like many other Basque immigrants, he had worked his way up an agricultural ladder from a hired-wage sheep laborer to an independent landowner.[3] Since his arrival in 1900, he had learned every aspect of the business. He gradually amassed titles to extensive lands and increased the size of his herd. He kept investing in infrastructure, claiming and buying land, as well as securing a labor supply from the Basque Country. Itcaina's success was grounded upon hard work, great dedication, and commitment to his business. But despite his success, he struggled with contemporary issues and challenges connected to the open-range sheep industry in northeastern Nevada, arising from disputes over access to ranges and water.

In February 1927, as part of a broader contract, Pete Itcaina had a verbal agreement with John Marble, a land speculator from California, to graze his sheep on the lands outside of

---

Iker Saitua is a Basque Government Postdoctoral Fellow in the Department of History at the University of California, Riverside. He holds a PhD from the University of Nevada, Reno. His work focuses largely on the intersections between agricultural labor, natural resources, and livestock raising in the American West. Saitua's first book, *Basque Immigrants and Nevada's Sheep Industry: Geopolitics and the Making of an Agricultural Workforce, 1880-1954* (University of Nevada Press, 2019), offers a critical examination of the history of Basque sheepherders in the West.

The author sincerely thanks Michelle S. Roberts, editor of *Nevada Historical Society Quarterly*, and the anonymous reviewers for their constructive comments. This article has been made possible thanks to the financial support provided by the Basque Government through its Postdoctoral fellowship program.

Hank Creek Basin upon which Marble had a long-established customary right. In March 1933, Marble filed a complaint against Itcaina for unlawfully grazing large numbers of sheep on portions of the public range within the Hank Creek Basin on several occasions. An examination of *Itcaina v. Marble* illustrates how overlapping interests in the range and water claims made for an unstable situation on Nevada's public ranges before Congress extended a grazing control program to the public-domain lands with the Taylor Grazing Act of 1934.

From Sheepherder to Sheepman: Pete Itcaina in Northeastern Nevada, 1900-1920

Born on January 14, 1881, Pedro Itzaina (later he would adopt the name Pete Itcaina) grew up in the rural town of Aldudes (Lower Navarre) in the French part of the Basque Country. In 1900, Itcaina immigrated to Nevada and found employment as a sheepherder in Carson Valley. He soon formed an unsuccessful livestock partnership with another Basque immigrant in Gardnerville. From there, Itcaina moved to Elko where, after working briefly for Lou Bradley's Union Land and Livestock, he homesteaded a property at Stag Hill, close to Charleston (Nevada).[4]

In March 1909, Pete Itcaina and his brother John formed a sheep outfit in Elko County. They first acquired title to 640 acres of land that offered access to the plenteous public-domain free range in northeastern Nevada. Like their predecessors, they sent for cheap and dependable labor from their village in the Basque Country among their family and neighbors. Despite his playful sense of humor, Pete exercised strict and demanding work requirements from Basque ranch workers. Between the 1910s and 1950s, according to Elko County writer and historian Louise A. Ulph, Pete Itcaina "controlled his kingdom with an iron hand. Some herders were kept constantly on the range with never a break to come to town."[5]

By 1920, the Itcaina brothers amassed a land empire with considerable wealth in northeastern Nevada. They progressively acquired large amounts of land from private sources and public domain from the U.S. General Land Office. In March 1911, Pete Itcaina bought 1,280 acres of land from Daniel and Gregoria Sabala. A few months later, in June 1911, he bought 160 acres of land and in 1913, another tract of 160 acres of government land. In the summer of

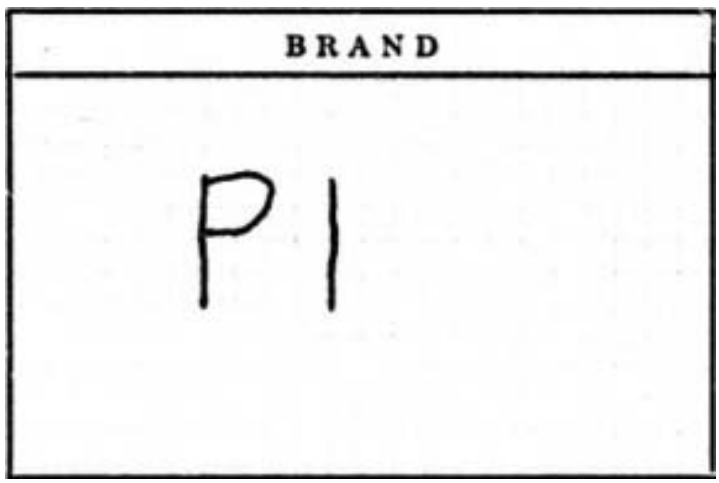


Figure 1. In the early 1940s, the "PI" livestock brand symbolized Pete Itcaina's wealth. (Source: Pete Itcaina, 17 December 1940, File no. 74811, Stock Brands, Recorder Office, Elko County Courthouse, Elko, Nevada)

1916, Pete acquired in the name of his wife, Augustina, another 320 acres of public land which increased significantly the family estate. Furthermore, he bought the Mary's River Ranch, 320 acres, and negotiated with the U.S. Forest Service for the grazing permits traditionally allowed to the ranch.[6] By the late twenties, Pete Itcaina was one of the most prosperous sheep ranchers in northeastern Nevada. With over twenty thousand sheep and up to two thousand cattle, Itcaina operated his livestock business upon both private and public-domain lands.[7]

By the turn of the century, the situation on Nevada's ranges desperately called for a more orderly system of range resource use. Both local ranchers and conservationists defended the idea that transient sheepherders were detrimental to agricultural development, permanent stock-raising, and the public interest. By then, the Basque had become a synonym for landless and tramp sheepherders. Conflicts over grazing on federal lands gave rise to the archetypal image of the Basque "tramp sheepman" that would persist for years in the collective imagination, despite the fact that there were already many Basques who owned land.[8] Pete Itcaina represented one of those Basque ranchers whose farming careers would eventually help to dignify the Basque immigrant community in the American West.

NON-PRIVATIZED PUBLIC-DOMAIN LAND IN NEVADA AND ITS PROBLEMS IN THE EARLY TWENTIETH CENTURY

In the early 1900s, public-domain ranges in Nevada encompassed all grazing lands not under private ownership. This meant that the federal government owned over ninety percent of a range that was free and open, except for the customary regulations imposed by local range users or ranchers (see Figure 2). After 1905, the U.S. Forest Service had established a range-control program in new national forests which mostly affected higher mountain ranges. National forests within Nevada were affected by this range control, but Nevada's public domain essentially remained unregulated. The vast public grazing lands beyond the Forest Service's regulations continued to present problems of range-use within the state, conflicts that neither state government nor ranch organizations could adequately address.[9]

Itinerant sheepherders still moved into Nevada from outside the state. Some sheep overwintered feeding on white sage or by utilizing their winter fat reserves. Conflicts between local ranchers and itinerant herders tending thousands of sheep owned by absentee companies became commonplace in the 1920s. Some advocated expanding Forest Service range regulations to the public-domain grazing lands as the solution to halting sheep itinerancy and the prospect to stabilize grazing practices on the range. Cattle interests were particularly displeased with the chaotic grazing situation on the open-range lands of Nevada beyond Forest Service boundaries.[10]

The Forest Service's range regulation began studies on forage resources in relation to livestock grazing in order to determine an optimum economic use of the ranges. The Forest Service evaluated and made decisions on range management based on the "carrying capacity" of the ranges as determined by the availability and conditions of range forage. The Forest Service's implementation of grazing fees associated with the issuing of permits on the number of stock grazed generally favored cattle permits, but sheep operations were not excluded, although there were complaints to the contrary.[11] During and after the Great War, state and national representatives became increasingly irritated and frustrated about the uses of the still open rangelands. The Stock Raising Homestead Act of 1916 tried to promote homesteading on the lands with parcels of 640 acres, but only resulted in further monopolization of the lands by large outfits. The amount of land was still too small for successful homestead ranching.

FIGURE 2. Map of Nevada, 1932, showing distribution of land ownership and use. Reproduced from Elmer O. Wooton, *The Public Domain of Nevada and Factors Affecting Its Use*, USDA Tech. Bull. 301 (Washington, D.C.: Government Printing Office, April 1932). (*Special Collections Library, University of Nevada, Reno*)

where wood shortages occurred, there are only six widely-spaced kilns over an area one-mile wide by three long which also contained high numbers of charcoal pits (well in excess of 100). Could the primary purpose of these kilns have been to process a more difficult species, such as mountain mahogany? This question may possibly be answered with further on-site research and residue testing at a Diamond Mountain site (not within the scope of this article).

There were advantages which caused kiln construction to escalate during the 1870s and 1880s, with clusters of kilns springing up near some mining districts.[41] Kilns were permanent structures that allowed for greater control of venting and less chance of air leaks; this meant less wastage of wood.

Charcoal from kilns was cleaner, requiring less seining to remove soil that was mixed with the charcoal from pits (resulting in less breakage). Larger pieces of charcoal were produced in a kiln (sometimes the entire length of the log). Thus kilns had greater yields per cord than pits. Kilns could produce denser charcoal, if desired, through use of a slower but longer burn. And kilns were safer than pits, reducing the need to climb on top of a burning pit to "jump the pit" (seal leaks).[42]

Kilns had the advantage of faster production times. However, faster burns could lead to decreased charcoal quality and even diminished yield. Smaller kilns minimized these problems. Charcoal produced in kilns was cheaper than that produced in pits (no brush/soil cover was needed). Less labor requirements meant charcoal produced in kilns was one-third cheaper (discounting the initial cost of kiln construction). Weather impacts charcoal pits more than kilns. Wind and precipitation could limit the times when a pit could be operated, but did not factor into the operation of a kiln to the same degree.[43]

Inventory of Nevada Kilns

Our focus in the rest of this article is to outline the known locations of Nevada's charcoal kilns and provide some of the local mining history and related forest utilization information (Figure 11). Two tables follow: Table 1 summarizes charcoal kiln locations across the state and Table 2 summarizes kiln construction and condition. Descriptive text for each site follows the tables. Additional unknown kiln sites may exist in the state. Some may have been obliterated by development or wildfire, but a few may have well-hidden foundations.

Eureka County

A discussion of charcoal kiln locations in Nevada needs to start with Eureka, the birthplace of the American silver-lead smelting industry, and the epicenter of the Great Basin charcoal industry. Eureka's charcoal history was mentioned earlier in this article. The boom years were 1870 to 1885. By 1879, there were 14 furnaces in or near Eureka.[44] Wood was a scarce commodity in central Nevada and by providing the fuel for this smelting industry, it played a huge economic role in supporting the mining industry.[45] Wood scarcity was a primary reason Nevada had several large smelters, instead of many smaller ones, and this contributed to the development of the corporate character of the state's mining industry.[46] The huge smelting industry at Eureka made it the center of the charcoal industry in the American West. Over one-and-a-quarter million bushels of charcoal were consumed at Eureka at its peak. Young and Svejcar referred to Eureka as a "Pittsburgh of the West" stating, "Smoke from roasted ores was so severe, elongated stacks were run up the canyon walls and then vertically to vent the fumes from this Pittsburgh of the West."[47]

TABLE 1
Nevada Charcoal Kilns

Set Name	Recorded No.	Remaining Evidence	County	General Location	Elevation	Current Owner	USGS Quad
Steward Ranch	3	2	Lincoln	Fairview Range	6,775	Private / BLM	Grassy Mountain
Bristol Well	4	4	Lincoln	Bristol Range	5,440	Private	Bristol Well
Matley Spring	1	1	Lincoln	Mt. Wilson	6,710	Private	Mt. Wilson
Pioche (# not known)	2	0	Lincoln	Pioche	5,750	Private	Pioche
Panaca Summit	2	2	Lincoln	Panaca Summit	6,505	BLM	Panaca Summit
Ward	6	6	White Pine	Ward Mountain	7,040	State	Ward Charcoal Ovens
Wheeler Wash (Tecopa)	3	3	Clark	Spring Mountains	6,385	USFS	Wheeler Well
Kiln Canyon North	2	2	Nye	Hot Creek Range	7,400	BLM	Flagstaff Mountain
Kiln Canyon	2	2	Nye	Hot Creek Range	7,090	BLM	Tybo
Kiln Canyon South	3	3	Nye	Hot Creek Range	7,140	BLM	Tybo
Tybo	2	2	Nye	Hot Creek Range	7,030	BLM	Tybo
Fourmile	2	2	Nye	Hot Creek Range	6,810	USFS	Hobble Canyon
Upper South Sixmile	3	3	Nye	Hot Creek Range	7,010	USFS	Hobble Canyon
Mid South Sixmile	3	3	Nye	Hot Creek Range	6,700	USFS	Hobble Canyon
Lower South Sixmile	3	3	Nye	Hot Creek Range	6,420	USFS	Hobble Canyon
Wood Tick	3	3	Nye	Hot Creek Range	6,920	USFS	Hobble Canyon
Owl Canyon	1	1	Eureka	Diamond Range	6,330	BLM	Christina Peak
Water Canyon	1	1	Eureka	Diamond Range	6,425	BLM	Christina Peak
Lower Silver Bell	1	1	Eureka	Diamond Range	6,675	BLM	Rattlesnake Mountain
Upper Silver Bell	1	1	Eureka	Diamond Range	6,990	BLM	Rattlesnake Mountain
Phillipsburg	1	1	Eureka	Diamond Range	6,400	BLM	Rattlesnake Mountain
Diamond Mountain	1	1	Eureka	Diamond Range	7,025	BLM	Rattlesnake Mountain
21 sets	50	47					

TABLE 2
Kiln Construction and Condition

Set Name	Construction Materials	General Condition	Comments
Steward Ranch	Stone	1 standing, 1 foundation, 1 removed	charging door faces 2nd kiln
Bristol Well	Stone	3 standing with degrade, 1 partial foundation	2 charging doors face each other, 3rd faces rear
Matley Spring	Stone	partially standing	
Pioche (# not known)	unknown	presumably removed	
Panaca Summit	Stone	standing	charging doors face each other
Ward	Stone	standing, restored	charging doors face rear
Wheeler Wash (Tecopa)	Stone	foundations, low walls	
Kiln Canyon North	Brick	standing, exterior bricks sloughing off	charging doors face each other
Kiln Canyon	Brick	standing, exterior bricks sloughing off	charging doors face rear
Kiln Canyon South	Brick	standing, exterior bricks sloughing off, 1 with gaping hole in side	charging doors face rear
Tybo	Stone	standing	charging doors face rear
Fourmile	Brick liner and cap, stone exterior	standing, 1 with top collapsing	charging doors face rear
Upper South Sixmile	Brick top, stone base	2 standing restored, 1 foundation	charging doors face rear
Mid South Sixmile	Brick top, stone base	foundations	
Lower South Sixmile	Brick top, stone base	2 partially standing, 1 foundation	charging doors face rear
Wood Tick	Brick top, high stone base, coarse construction	2 standing with exterior bricks sloughing off, 1 top collapsed	charging doors face rear
Owl Canyon	Stone, very crudely built	standing but collapsing	charging door faces rear
Water Canyon	Stone	foundation, low walls	
Lower Silver Bell	Stone	foundation	
Upper Silver Bell	Stone	foundation	
Phillipsburg	Stone	standing	charging door faces rear
Diamond Mountain	Stone	standing	charging door faces rear

An 1879 history of Eureka could not help but address the charcoal industry as one of the defining elements of the smelting center:

> There is no timber, properly so called. There is, however, upon most of the foot-hills a sparse growth of nut-pine (*pinyon*), mountain mahogany, and dwarf cedar, which is used for fuel in the manufacture of charcoal for smelting…. The main industry of Eureka county [*sic*] is silver mining. The ores demanding reduction by smelting process, the manufacture of charcoal is a necessary adjunct in mining…. It is impossible to obtain correct statistics of the charcoal manufacture of Eureka. Its production so far has kept pace with the requirements of smelting that there has been no material change in the price for over four years. The supply, however, is limited, and before long our smelters will look to the illimitable forests of the Rocky mountains [*sic*] and the Sierras for their coal…. The fuel used in smelting is charcoal of most excellent quality, weighing over 17 ½ lbs to the bushel. It is burned from nut pine (*Pinus monophylla*), within a radius of forty miles of Eureka. The price per bushel for the past five years has averaged about 28 cents.[48]

One government report identified charcoal production as the most important mining related industry in the district, but that woodland within 60 miles was denuded of trees. A major reason given for Eureka's decline in the early 1890s was "the government edict restricting the cutting of timber for the manufacture of charcoal."[49]

Surprisingly, Eureka County apparently never had more than a few kilns. Production was primarily by charcoal pits and only the Diamond Range had six kilns that we know of, scattered along a three-mile stretch of the mountain's west slopes, south of Monroe Canyon and north of Green Canyon. Only one kiln was constructed at each location. A single kiln has a USDI Bureau of Land Management interpretative sign stating: "The Phillipsburg site is fenced in to exclude livestock" (Figure 12).[50] The kilns were built of native stone with mud used for mortar. Four were approximately 30 feet in diameter (outside measurement), while at the two southern sites, the kilns were 26 to 27 feet in diameter. Two of the kilns remain in excellent condition with few missing stones (Figure 13). Five of the kilns were built with good to excellent stone craftsmanship. Three kilns are now essentially low walls surrounded by rubble. The northernmost kiln was crudely built of native irregularly shaped stones of varying sizes and is of a squat form. So crude that it may never have functioned well, it is almost remarkable that it still stands largely intact, although many exterior stones have sloughed off.

WARD CHARCOAL OVENS

The White Pine mining rush was one of the mining booms that followed the Comstock Lode boom. Silver production was the complete focus of all activity from 1865 to 1888, with a copper boom about twenty years later. The Ward District, located in the foothills of the Egan Range southeast of Ely, had its heyday from 1876 to 1880.[51] Mining interest began when two teamsters on the Toano-Pioche freight route discovered a rich silver deposit in what would become Ward Gulch in 1872. In 1875, its three furnaces drove charcoal demand; by 1878, it was the most important and populous district in the county and it remained active until about 1882.[52] By 1883, there was no longer a demand for charcoal, and those engaged in charcoal production would have moved on to other mining areas.

FIGURE 12. The best known kiln on the Diamond Range is the Phillipsburg Kiln. Here a cabin foundation can be seen adjacent to the kiln. (*Douglas H. Page, Jr., photo taken July 19, 2016)*

FIGURE 13. Owl Canyon Kiln, rear. Very squat and crude of form. It is unlikely that this "kiln" ever functioned properly. (*Douglas H. Page, Jr., photo taken July 19, 2016*)

FIGURE 14. Ward Charcoal Ovens and the Steptoe Valley, August 2005, is probably the best known kiln site in Nevada. (*Douglas H. Page, Jr., photo taken August 16, 2005*)

The Martin White Mining Company erected six charcoal kilns, now located in Ward Charcoal Ovens State Park, three miles south of what remains of the town site of Ward (Figure 14). They were constructed in late 1875 or possibly 1876. Prior to 1876, the ore was shipped to Mineral City near Ely or to San Francisco if it was the highest grade of ore.[53] The kilns were in operation for about three years until charcoal demand declined due to depleted ore deposits and dwindling wood supplies (woodlands were reported to be stripped of trees for up to 35 miles). Coal-based fuel was reported to be substituted for charcoal after that.[54]

The workforce at the ovens was estimated to consist of nine people (one foreman, two burners, four fillers, one whitewasher, and one roustabout).[55] In 1879, four to five thousand bushels of charcoal stored in the six kilns were ignited by vandals. The charcoal was a total loss. Intense heat damaged kiln 2 (counting from the west),[56] valued at $1,200, and it became useless for future charcoal production. The total loss was $2,200.[57] One possible reason for the arson might have been unemployed and disgruntled mill workers, as the Martin White mill was temporarily closed for repairs during the summer of 1879 and did not require the charcoal stored in the ovens.

Since these are some of the rare charcoal kilns protected in a state historical site, there are historical markers and informational signs located at or near the kilns that present basic information on the charcoal kilns and charcoal making. These are some of the largest and finest examples of beehive-shaped charcoal kilns in the state and were operational during the silver boom years of the Ward District.

The Ward kilns have an inside diameter that averages 26.6 feet. The sides are 26 inches thick at the base, making the outside diameter about 31 feet at the base. An interpretive sign at the site gives the height as 30 feet. Filling the kiln, carbonization, and emptying the kiln took 12 to 13 days (the "burning" process itself took nine to 11 days). The process produced about 50 bushels of charcoal per cord. The Ward smelter required roughly 30 to 50 bushels of charcoal to reduce one ton of ore. A completely loaded kiln represented the total tree crop from five to six acres of woodland and the hills and mountains around some major smelting areas were denuded of trees for a radius of 35 miles.[58] A shortage of available timber contributed to the District's decline. Once abandoned for charcoal production, the kilns served as shelter for stockmen and prospectors and even had a reputation as a lair for stagecoach robbers.

The kilns are listed on the National Register of Historic Places and the nomination form summarizes the history of Ward and gives additional detail on the kilns. They are described as being "…built of random stone square faced to the exterior, with dressed stone forming the frames of the charge and discharge doors" with "arched stone roofs" that "derive their sole support from the highly skilled manner in which their stones are fitted together." The top door to the back is used for receiving wood (or charging) and the ground level door in the front is for discharging wood. Originally both doors were fitted with heavy iron doors and iron frames to produce an air seal.[59] Some restoration work was done on these kilns in about 1973 and again in about 2004, the latter by a Nevada Division of Forestry Prison work crew.[60]

The hills around Ward and on either side of the Steptoe Valley contain remains of numerous charcoal pits. The pits supplied charcoal to other area smelters. A historical marker at the kilns notes that: "As railroads penetrated the West charcoal was replaced by coke made from coal, and the charcoal industry faded."[61] Nevada's copper boom of the early twentieth century was centered in White Pine County and a large smelter was erected at McGill using coal at first and then fuel oil. While charcoal dominated the early portion of Nevada's smelting industry, its use faded over time.

Lincoln County

Charcoal production was an important industry in Lincoln County. Charcoal kilns in the county supported smelters at Bullionville, Pioche, and Bristol Well. The early history of the county converges on the Pioche mining boom that peaked from 1870 to 1875. Pioche was the main mining camp, but lacked an adequate water supply. Mills serving Pioche were located about ten miles south near abundant water in Bullionville. In 1873, the Pioche and Bullionville Railroad began to transport ore from the mines to the mills. When Pioche gained waterworks in 1875, the mills started to relocate to Pioche and Bullionville declined. Just as activity in Pioche floundered in 1876, a new boom occurred to the north in Bristol District.

Panaca

The Bullionville smelter was supported by two charcoal kilns located in Kiln Wash about six miles north of Panaca Summit (Figure 15). A recent archaeological study documented this site as having markets at both the Bullionville and Pioche smelters. The Zeier and Reno report provided detailed information on the kilns: "They are of conical shape and are almost the same size, with an inside height of nearly 27 feet, an inside base diameter of approximately 22 feet, and walls at the base roughly three feet thick."[62] The Bureau of Land Management interpretative sign at the site calls these beehive-shaped kilns and gives the date of operation from the mid-1870s until the smelters at Bullionville closed in the 1890s; the stone was quarried from nearby outcrops of rhyolitic tuff, carefully dressed, then joined with mud and lime mortar. These kilns are located on the western slope of the Cedar Range in Kiln Wash where the woodland is predominately pinyon pine. A road followed the wash north, then west, down to Condor Canyon that led to both Bullionville and Pioche.[63] That road is on current topographic maps and is still visible on recent aerial photographs.

Pioche

The Pioche Consolidated Mining and Reduction Company, approximately 21 miles south of Matley Spring and 27 south of Steward Ranch, was formed in 1890 by Salt Lake City promotor William S. Godbe, resulting in the construction of a new smelter northeast of Pioche (where it is still visible today). Pioche is known for having a number of charcoal producers who used nearby pits for charcoal production. It is not known for charcoal kilns.

However, newspaper accounts testify that kilns were indeed constructed in Pioche. In May of 1891, *The Salt Lake Tribune* reported that operation at Pioche was in excellent condition, except for a railroad connection. A tramway was proposed to connect the mines to the smelter location, with the loaded cars running by gravity and the empty cars returned using a small locomotive.

The Day Mine was located near the north end of the Highland Range with plenty of timber to supply fuel. Surprisingly, the plan was to send cordwood down the tramway to charcoal kilns to be located "near the smelters." Certainly, this mode of transport for cordwood would have been unique. The local railway was to be expanded by about eleven miles to reach the mines and would travel "alongside the range skirting the timber from which to draw their fuel supply." The railway and charcoal kilns were expected to "make sure a certain supply of fuel and ore at all seasons of the year."[64]

The Pioche Weekly Record reported that "rock is being hauled in to put up the new charcoal kilns." [65] A week later it reported that "a switch is being built connecting the main line with the charcoal kilns," that the kilns were nearly ready for operation, and that "as all the wood

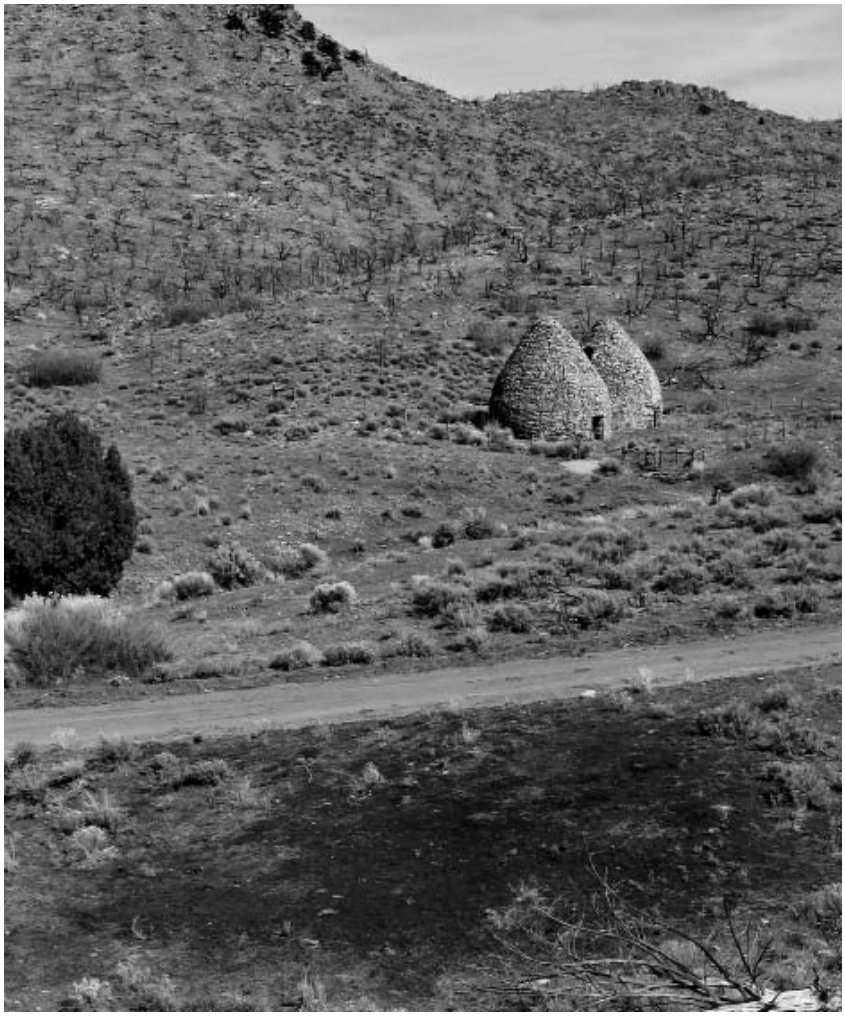


FIGURE 15. Panaca Summit Kilns, remains of a charcoal pit can be seen in the foreground. (*Douglas H. Page, Jr., photo taken March 26, 2013*)

FIGURE 16. Three kilns at Bristol Well from rear. Ironwork can be seen around the charging door and the smelter office building is in the distance between the left and center kiln. (*Douglas H. Page, Jr., photo taken March 17, 2016*)

will be brought in by train a great saving will be made in hauling expenses."[66] Production estimates were for 2,000 bushels of charcoal consumed daily, so that "a very small savings per bushel will amount in a year to a snug sum."[67] Within a month it was reported that "wood for the kilns is being brought in from the front and as soon as sufficient quantity is in the kilns will be fired up."[68] Field inspection revealed no traces of these kilns, but it would seem they were there once.

The Devine Kilns

The Bristol District is located about 15 miles north-northwest of Pioche. The area was prospected shortly after the discovery at Pioche in 1863. The district was organized in 1871. The National Mining Company was incorporated in May 1872 and by September a smelter was operating at Bristol Well, and later a stamp mill, about four miles west of the town (first called National City and later Bristol City) and mines.[69] The National Company collapsed in 1873 and the district languished, becoming nearly depopulated. The discovery of ore and construction of the Hillside Mine (near the summit of the Bristol Range) in 1877 was the beginning of a new boom, and the Hillside Mill and Mining Company was soon formed.[70] The National Mine, furnace, and town site were purchased by the Hillside Company. The furnace was thoroughly repaired and quickly running. By 1880, the outlook for the district "never looked so bright as it does at present" with two major companies operating there: the Hillside Company and the Bristol Silver Mining Company (with its own furnace and stamp mill).[71]

The Bristol Well, Steward Ranch, and Matley Spring kilns all are of similar construction, and all could well have been constructed by and under the direction of N. J. "Nick" Devine. The *Tybo Sun* reported that Devine operated or was constructing seven charcoal kilns.[72] Four were at Bristol Well, three were at the Steward Ranch, and one at Matley Spring; however, this adds up to eight kilns, not seven as noted in the *Tybo Sun*. It is possible that when the newspaper article appeared only three kilns existed at Bristol Well and the fourth one was yet to be constructed (which may explain why it is not in alignment with the other three) (Figure 16). It would seem most likely that charcoal from these three kiln sets was primarily intended for Bristol if all three sites were built and operated by Devine. Pioche may have been a secondary market.

Bristol Well

The state mineralogist reported for 1877-1878 that charcoal supply was a problem in Bristol, but that the wood supply in the area was good and that "stationary kilns have been erected near the furnace which will soon produce the necessary coal." [73] This was confirmed in late 1878 by a visitor to Bristol who reported:

> There were three coal kilns near the town, all being run to their full capacity burning coal, and they are about to commence the erection of another kiln. The Hillside Company has experienced considerable trouble in obtaining a sufficient supply of charcoal.[74]

The Devine and Company charcoal kilns at Bristol Well had expected monthly output of 25,000 bushels in the summer of 1881.[75] In early 1883 Devine's property, including the "four coal kilns," was sold at public auction to satisfy a judgement.[76] R.J. Phelan won the judgement against Devine and interestingly four coal kilns were listed as 1886 tax delinquent property in Phelan's name.[77]

FIGURE 17. Bristol Well smelter office. The black stones have a heavy coating of creosote, which indicates they were likely taken from the once present fourth kiln at Bristol. (*Douglas H. Page, Jr., photo taken May 28, 2013*)

FIGURE 18. The remaining kiln at Steward Ranch has its charging door facing the foundation of the second kiln (lower right). Kilns 2 and 3 were dismantled and the stones used for construction of three buildings on the ranch property. (*Douglas H. Page, Jr., photo taken February 2, 2015)*

FIGURE 19. Steward Ranch school house, built from stones from a charcoal kiln, as evidenced by the creosote encrusted stones. (*Douglas H. Page, Jr., photo taken February 2, 2015*)

Today three charcoal kilns remain at Bristol Well. Southwest of the three charcoal kilns is a lime kiln. Approximately 100 feet from the three remaining kilns and between these and the lime kiln is the foundation of the fourth charcoal kiln. It was likely the same shape and size of the other charcoal kilns. All but a few foundation stones from this fourth kiln were removed and repurposed, likely for the smelter office about 300 yards to the northwest (Figure 17). These charcoal kilns have a base of just over 25 feet in outside diameter, about two feet in thickness, and a height of about 20 feet.[78] They have some interesting features, two of which are: Mud was used to join the stones, with mortar only on the interior surfaces (most Nevada charcoal kilns use mortar for both purposes) and the charging doors face each other on two of the kilns, as opposed to facing the back of the kiln as most do.[79]

Steward Ranch

On the Steward Ranch about 14 miles north of Bristol was another set of charcoal kilns quite similar to those at Bristol Well. One of the Steward Ranch kilns remains and the foundation of a second is adjacent (Figure 18). Evidence supports that a third charcoal kiln was at the site, and there is space for it adjacent to the other two, but no clear surface evidence of its exact site. Stone from the two dismantled kilns was used to construct three buildings nearby on the Ranch (Figure 19).[80] Old, now faint, roadways likely were used to transport charcoal south to Bristol or perhaps even to Pioche.

Matley Spring

Twelve miles to the east-south-east of Steward Ranch and within the Mount Wilson community is the Matley Spring charcoal kiln. It is sometimes referred to as the Mount Wilson Kiln. It is near the mining towns of Atlanta and Silver Park, but neither of these had a smelter. Presumably the market for charcoal was either Bristol (16.5 miles southwest) or Pioche (21 miles to the south). As discussed above, Bristol is the most likely.

Hot Creek Range

Nine sets of kilns, totaling 23 kilns, are located in the Hot Creek Range, the largest remaining concentration of charcoal kilns in Nevada. The range is 70 miles southeast of Austin and 50 miles northeast of Tonopah and is probably best known for the ghost towns of Tybo, Hot Creek, and Morey. Mining activity and the smelters were centered at Tybo. The first major ore discovery was in 1870, resulting in the Tybo Mining District being formed, and the town of Tybo being established in 1874 in Tybo Canyon. Smelting furnaces and stamp mills soon followed, with Tybo Consolidated Mining Company being formed in 1875.[81] The boom that began in the spring of 1874 lasted until the mining company failed in 1879.[82]

One set of kilns was built of stone (Tybo), three sets totally of brick (the Kiln Canyon sites), and the remainder of a combination of stone and brick. Four of these sets were built of brick on a stone base (South Sixmile and Wood Tick Canyons) and the Fourmile Canyon set was built with a stone exterior over a brick lining and capped with brick. Current condition varies from very good to just a foundation.[83] The southern kiln sets (Tybo and Kiln Canyon) are administered by the Bureau of Land Management (BLM). The northern sets (Fourmile, Sixmile, and Wood Tick Canyons) are administered by the US Forest Service (USFS).

FIGURE 20. The remains of a loading platform face the charging door at one of the Tybo kilns. (*Douglas H. Page, Jr., photo taken May 22, 2016*)

FIGURE 21. Charcoal debris and three kilns remain at the south site in Kiln Canyon. (*Douglas H. Page, Jr., photo taken May 21, 2016*)

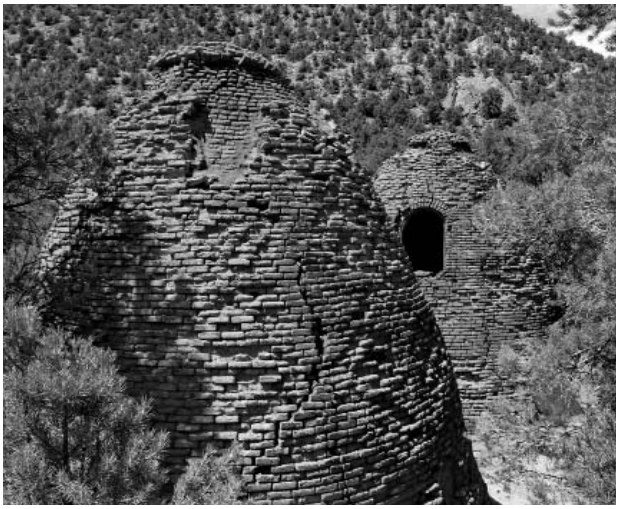


FIGURE 22. Several sets of kilns in southeast Nevada have charging doors that face each other, like these at the north site in Kiln Canyon. More commonly charging doors face the rear. (*Douglas H. Page, Jr., photo taken May 21, 2016*)

Tybo

The set of two kilns at Tybo are well known (Figure 20). The BLM interpretive sign at the site says they were built in 1872. Other sources say they were built about 1874.[84] The first issue of the *Belmont Courier* published in 1874 stated the erection of a mill and furnaces would immediately commence.[85] This makes 1874 the more likely year in which the kilns were built.

Kiln Canyon

There are three sets of kilns in Kiln Canyon to the west of Tybo and along the old stage road to Belmont. (The old road is now impassable between Tybo and Kiln Canyon.) The two sets along a road in Kiln Canyon are known as the McIntyre Kilns, and the set north of the stage road and within the forest is undoubtedly associated with these (Figure 21).[86] The construction and use dates of these three sets are uncertain. There are stories of many years of local use of the charcoal left behind at the most southern site after they ceased being used (Figure 22). The local use would have been after the Tybo smelters closed, which may suggest Kiln Canyon was the last area exploited by the Tybo operations.

Sixmile Canyon

Roughly 15 miles to the north of Tybo are the northern Hot Creek kilns in Fourmile, Sixmile, and Wood Tick canyons (Figures 23, 24, and 25). In 1877, the *Eureka Daily Sentinel* reported that active mining operation had begun at Tybo in 1874, with two smelters having been built since then, and a third smelter (of larger capacity than the other two) to be erected that same year. By 1877 (only three years after the first kilns at Tybo are thought to have been constructed), the woodland near Tybo was depleted.[87] Charcoal was in "great demand" and Tybo Consolidated now owned "large tracts of woodland in the vicinity of its mines and planned to build brick charcoal kilns with stone foundations. [88] The company originally advertised to build an additional 12, later changing that to 15 kilns on its wood ranches four to six miles from

FIGURE 23. Wood Tick, was built with a combination of stone and brick; these kilns were not constructed with the same craftsmanship as their neighbors in South Sixmile Canyon. The site is in Wood Tick Canyon about 900 feet west of Sixmile Canyon. (*Douglas H. Page, Jr., photo taken May 22, 2016*)

FIGURE 24. At Middle South Sixmile two types of brick were used to top stone foundations, a fired red brick and an unfired adobe brick. On the left kiln above, the adobe brick can be seen in the center flanked on either side by red brick. (*Douglas H. Page, Jr., photo taken May 22, 2016*)

FIGURE 25. Lower South Sixmile site has remains of three kilns, two of which still have most of their bricks in place; however, there are gaping holes when viewed from the rear. The third is mostly foundation only. (*Douglas H. Page, Jr., photo taken May 22, 2016*)

FIGURE 26. In 2014 the US Forest Service contracted for the installation of a retaining wall to protect the Middle South Sixmile site from being undermined by floodwaters. (*Douglas H. Page, Jr., photo taken May 22, 2016*)

Hot Creek Ranch (i.e., in Fourmile and Sixmile Canyons) with the following specifications: "Foundation wall (of stone), three (3) feet thick; brick two (2) feet at the base, with three (3) offsets, bringing thickness down to one (1) foot at the top. Inside dimensions: Twenty-two (22) feet across the bottom, and twenty-five (25) feet high, from the foundation wall [*sic*]."[89]

The final construction at the three South Sixmile Canyon sites fit the *Sentinel's* description well. The other sites in Fourmile and Wood Tick Canyons varied in construction techniques from that. The contract was let to Henry Allen, a contractor from Eureka, who was reported to be erecting 15 charcoal kilns, requiring 600,000 bricks, and a force of ten to twenty men for about three months.[90] Kiln capacity was 1,400 bushels each which would fuel the smelters for about five days.[91] Allen probably built the 14 kilns (not the 15 advertised for) in five sets in Fourmile, South Sixmile, and Wood Tick Canyons.

At the Middle South Sixmile site, the stone foundation was topped with two types of brick. One is a red brick that would have been fired in a brick oven (likely offsite); the other is an adobe brick that appears to have never been fired (perhaps locally made). This and the varying construction techniques at Fourmile and Wood Tick may suggest the contractor ran out of fired brick before all the kilns were built and resorted to local materials.

In 2014, the USFS, realizing the importance of the kilns, contracted with Building Restoration Specialists, a Denver company, to stabilize the drainage adjacent to the Middle South Sixmile site that was threatening to undermine the kilns and to restore two of the three kilns at the Upper South Sixmile site (Figures 26 and 27).[92] They also had two interpretative signs erected at the rest area on U.S. Highway 6 for all kilns northeast of Hot Creek Ranch on USFS lands.

Wheeler Wash (Tecopa)

The history of the Tecopa, or Wheeler Wash, charcoal kilns is not welldocumented. They are located west of Las Vegas on the west side of the Spring Mountains National Recreation Area. Three charcoal kilns and a nearby lime kiln were built by Nehemiah "Red" Clark in 1875 for Jonas Osborne, a mining developer in the Resting Springs (later Tecopa) mining district about fifty miles distant and across the border in California. Tecopa was located in the Mohave Desert and the nearest source of timber and charcoal was sawmills and kilns in the Spring Mountains of southern Nevada.[93] Osborne erected a large smelter at Tecopa in January 1878.[94] The smelter proved to be inefficient and was abandoned by the fall of 1878.[95] Folklore has it that the kilns were used for at least 20 additional years to supply charcoal to other smelters across southern Nevada. However, a recent archaeological project suggested they were only briefly used.[96] Restoration work was attempted on one of the kilns in the mid-2000s. Unfortunately, the restored kiln collapsed soon after that due to freezing weather and moisture in mortar; thus, only ruins remain at the site today (Figure 28).[97]

Martis Creek

The Sierra Nevada Mountains supplied a considerable amount of charcoal to Nevada and Utah, especially the Truckee/Lake Tahoe portion of California, producing up to 58,000 bushels per week.[98] Charcoal kilns and pits supplied fuel for Virginia City, Eureka, and Utah smelters, as well as fuel for the Central Pacific Railroad.[99] From 1872 to 1874, Sisson,

FIGURE 27. The USFS contracted the restoration of two of the three kilns at the Upper South Sixmile in 2014. (*Douglas H. Page, Jr., photo taken May 22, 2016*)

FIGURE 28. The camera view is north and the Wheeler Wash kilns face east. No restoration was attempted on the south and middle kilns; restoration failed on the northern kiln, which had had an intact upper dome prior to work. (*Douglas H. Page, Jr., photo taken November 16, 2016*)

FIGURE 29. Restored / stabilized once in the 1930s by the Civilian Conservation Corps and again in 1971 by Navajo contractors, the Wildrose Kilns in California are some of the best preserved kilns in the West. (*Douglas H. Page, Jr., photo taken March 13, 2012*)

FIGURE 30. The Cottonwood Kilns in southeastern California are one of the two remaining sites where "ceramic" (or adobe) kilns were constructed. The other is located in Utah's Gold Hill community. (*Douglas H. Page, Jr., photo taken November 16, 2016*)

Wallace, and Company utilized over 300 Chinese workers in the Truckee area. In 1877, the Company constructed three beehive charcoal kilns at Martis Creek Station on the Central Pacific Railroad, across from the confluence of the Truckee River and Martis Creek.[100] Only the foundations of these three kilns survive today.[101]

Eastern California

The Great Basin, inclusive of eastern California, Nevada, and Utah, has charcoal kilns scattered throughout the region. The sites in Utah are described in a 2015 article in *Utah Historical Quarterly*.[102] If two additional sites in eastern California are included here, the two articles become a complete reference to charcoal kilns in the Great Basin. Additionally, the California portion of the Great Basin is often mentioned in Nevada mining histories,[103] having had many connections to Nevada.

Wildrose

Ten of the best-preserved charcoal kilns in the United States are located in Death Valley National Park's Wildrose Canyon (Figure 29). The location is included on the Park map and is an interpretive site. The kilns were completed in 1877 by George Hearst's (father of William Randolph Hearst) Modock Consolidated Mining Company as a source of fuel for two smelters located about 25 miles to the west. The kilns operated for less than three years. This, and periodic maintenance, might explain their exceptionally good condition. Charcoal was hauled to the smelters by Remi Nadeau's Cerro Gordo Freighting Company. Each kiln stands about 25 feet tall with a circumference of approximately 30 feet.[104] The Death Valley National Park website and publications provide outstanding photographs of these kilns.

Cottonwood

Just west of Death Valley in California's Owens Valley are the Cottonwood Charcoal Kilns (Figure 30). The two adobe kilns are about a mile east of U.S. Highway 395 and include

a historical marker that is just off the highway.[105] They survive but are in poor shape, likely due to being constructed solely of adobe brick faced with adobe plaster. The kilns were located on the shore of (the now dry) Owens Lake to facilitate transport of the charcoal across the lake via steamers. The charcoal fueled the furnaces of the Cerro Gordo Mine, high in the Inyo Mountains. Wood came from the nearby Sierra Nevada Mountains via flume,[106] an uncommon transport method, but also used at two sites in the Uinta Mountains of Utah and Wyoming.[107]

IN SUMMARY

The production of charcoal in Nevada in the 19th century, when both the kiln and pit methods are taken into account, had profound effects on many of Nevada's woodland forests, altering forest structure and function that persists into the current times. By the beginning of the 21st century, the pinyon-dominated woodland forests have largely grown back to their former extent; however, the forest structure is missing the large old trees that were harvested, many of which dated to 300 years and older. It is important to note that charcoal kilns only accounted for a minor portion of the woodland harvest in Nevada. Charcoal pits were used much more extensively and in many additional areas of the state than kilns.

Some of the best examples of charcoal kilns in the country survive in Nevada. The kilns are tangible reminders of a remarkable part of Nevada's mining history and are historical cultural resources worth preserving. The historical marker at the Ward charcoal ovens contains a quotation from Nevada "explorer" and author Nell Murbarger: "The real worth of the old charcoal ovens is their historical function in reminding present Americans of a now-vanished industry, without which the great silver and lead bonanzas of the early West could not have been harvested."[108]

The intent of this article has been to provide a broad historical overview of the charcoal kilns of Nevada, identifying and documenting locations of as many sites that could be found in the records. Some of these sites are on the National Register of Historic Places, others contain sufficient site integrity that they may well qualify for listing and could be added with additional professional archaeological research and documentation.

NOTES

[1]William Bryant Logan, *Oak: The Frame of Civilization* (W.W. Norton & Company, New York, 2005). See in particular pages 126-132.

[2]Arlie W. Toole, Paul H. Lane, Carl Arbogast, Jr., Walton R. Smith, Ralph Peter, Edward G. Locke, Edward Beglinger, and E. C. O. Erickson, *Charcoal Production, Marketing, and Use*, Report No. 2213 (Madison, WI: USDA Forest Service Forest Products Laboratory, 1961). Charles E. Williams, "Environmental Impact," in Kevin Hillstrom and Laurie C. Hillstrom, eds., *Industrial Revolution in America: Iron and Steel* (Santa Barbara, CA: ABC-CLIO, 2005), 163-172.

[3]Thomas J. Straka and Robert H. Wynn. "Pit Production of Charcoal for Nevada's Early Smelters," *Central Nevada's Glorious Past 2010*, 29(1):1, 12-16.

[4]Russell R. Elliott, *History of Nevada*, 2nd ed. (Lincoln: University of Nebraska Press, 1987), 61-89.

[5]H.O. Hofman, "The Metallurgy of Silver," *Technology Quarterly and Proceedings of the Society of Arts*, 16:3 (September 1903), 265-272.

[6]J. Ross Browne, *Report of J. Ross Browne on the Mineral Resources of the States and Territories West of the Rocky Mountains* (Washington, DC: Government Printing Office, 1868), 361.

[7]Elliott, *History of Nevada*, 101-103.

[8]A reverberatory furnace is one in which the ore and the solid fuel are kept apart. The flame and hot gases from the burning fuel enter the furnace from a separate chamber and are deflected over or onto the ore. "Early History of the Reverberatory Furnace" *Nature* volume 133, pages 131–132 (January 27, 1934), https://www.nature.com/articles/133131d0.

[9]Ernest Oberbillig, "Development of Washoe and Reese River Silver Process," *Nevada Historical Society Quarterly*, 10:2 (Summer 1967), 4-44.

[10]James A. Young and Jerry D. Budy, "Historical Use of Nevada's Pinyon-Juniper Woodlands," *Journal of Forest History*, 23:3 (July 1979), 112-121.

[11]Edgar T. Ensign, *Biennial Report of the Forest Commissioner of the State of Colorado for the Years 1887 and 1888, Second Edition* (Denver CO: The Collier & Cleveland Lithograph Company, 1888), 68-69.

[12]J. E. Rehder, "The Change from Charcoal to Coke in Iron Smelting," *Journal of the Historical Metallurgy Society,* 21:1 (1987), 37-43.

[13]"Discovery of Large Coal Beds near Evanstown (Wy. T.)," *Engineering and Mining Journal*, 20:12 (September 18, 1875), 288.

[14]Rossiter W. Raymond, *Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains: Being the Eighth Annual Report* (Washington, DC: Government Printing Office, 1877), 179-181, 268-269.

[15]Henry R. Whitehill, *Biennial Report of the State Mineralogist of the State of Nevada for the Year 1873 and 1874* (Carson City, NV: John J Hill, State Printer, 1875), 35-37.

[16]Myron Angel, ed., *History of Nevada* (1881, Thompson and West; reprint, Berkeley, CA: Howell-North Books, 1958), 359-664.

[17]"Local and Mining," *Daily Reese River Reveille* (November 19, 1867).

[18]Rossiter W. Raymond, *Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains* (Washington, DC: Government Printing Office, 1870), 124.

[19]Lanner, *The Pinon Pine*, 125.

[20]Ronald M. Lanner and Penny Frazier, "The Historical Stability of Nevada's Pinyon-Juniper Forest," *Phytologia,* 93:3 (December 2011), 360-387.

[21]Charles S. Sargent, *Report on the Forests of North America (Exclusive of Mexico)*, Department of the Interior, Tenth Census of the United States (Washington, DC: Government Printing Office, 1884), 571.

[22]Lanner and Frazier, "The Historical Stability of Nevada's Pinyon-Juniper Forest," 360-387.

[23]Ronald M. Lanner, *The Piñon Pine: A Natural and Cultural History* (Reno, NV: University of Nevada Press, 1981), 88-105.

[24] Robert B. Gordon, *American Iron: 1607-1900* (Baltimore, MD: The Johns Hopkins University Press, 1996), 90-100.

[25]Franklin Grazeola, *The Charcoal Burners' War of 1879: A Study of the Italian Immigrant in Nevada*, (M.A. thesis, University of Nevada, Reno, 1969), 1-126. Phillip I. Earl, "Nevada's Italian War," *Nevada Historical Society Quarterly*, 12:2 (Summer 1969), 47-87. Brian Frehner, "Ethnicity and Class: The Italian Charcoal Burners' War, 1875-1885," *Nevada Historical Society Quarterly*, 39:1 (Spring, 1996), 43-62. Albin J. Cofone, "Italian Images in Northern Nevada Writing," *Nevada Historical Society Quarterly*, 27:4 (Winter, 1984), 260-268. Silvio Manno, *Charcoal and Blood: Italian Immigrants in Eureka, Nevada and the Fish Creek Massacre* (Reno: University of Nevada Press, 2016). Thomas J. Straka, Robert H. Wynn, and Charles E. Burkhardt, "Charcoal Kilns of Eureka and White Pine Counties," *Central Nevada's Glorious Past*, 28 (2009), 9-14.

[26]*Pioche Daily Record*, July 26, 1876, p. 3.

[27] Robert H. Wynn and Thomas J. Straka, "Charcoal Kilns of the Hot Creek Range," *Central Nevada's Glorious Past*, 27:1 (Winter 2006-2007), 5-13.

[28]Ronald L. Reno, *Fuel for the Frontier: Industrial Archaeology of Charcoal Production in the Eureka Mining District, Nevada 1869-1891* (Ph.D. dissertation, University of Nevada, Reno, 1996), 112. Nell Murbarger, "Charcoal—The West's Forgotten Industry," *Desert Magazine*, 19:6 (June 1956), 7. Lynn R. Bailey, *Shaft Furnaces and Beehive Kilns: A History of Smelting in the Far West, 1863-1900* (Tucson, AZ: Westernlore *Press,* 2002), 147-182. Douglas H. Page, Jr., Sarah E. Page, Thomas J. Straka, and Nathan D. Thomas, "Charcoal and Its Role in Utah Mining," *Utah Historical Quarterly* 83:1 (Winter 2015), 24-27.

[29]A cord is a common unit of measure for fuelwood equivalent to 128 cubic feet.

[30]John Birkinbine, "Our Fuel," *Journal of the United States Association of Charcoal Iron Workers* 2:2 (April 1881), 66-67.

[31]Thomas Egleston, "The Manufacture of Charcoal in Kilns," *Transactions of the American Institute of Mining Engineers* 8 (May 1879 – February 1880), 373-397.

[32]Philip F. Notarianni, "*The Frisco Charcoal Kilns*," *Utah Historical Quarterly* 50:1 (Winter 1982), 42.

[33]John Birkinbine, "Charcoal," In *Supplement to Encyclopedia Britannica, Ninth Edition, A Dictionary of Arts, Sciences, and General Literature,* Volume II (New York: The Henry G Allen Company, 1891), 150-154.

[34]*Ibid*.

[35]Thomas Egleston, "The Manufacture of Charcoal in Kilns," *The Engineering and Mining Journal* 31:20 (May 14, 1881), 334-336; 31:21 (May 21, 1881), 351-352; 31:22 (May 28, 1881), 367-368. John Birkinbine, "Discussion upon

the Manufacture of Charcoal: Meilers and Kilns," *Journal of the United States Association of Charcoal Iron Workers,* 5:6 (December 1884), 385-397. Nevada State Parks, "Making Charcoal," interpretative sign at Ward Charcoal Ovens State Park, image available at https://commons.wikimedia.org/wiki/File:2014-08-11_16_04_17_Making_Charcoal_descriptive_sign_in_Ward_Charcoal_Ovens_State_Historic_Park.JPG.

[36] Charles D. Zeier and Ron Reno, *The Panaca Summit Charcoal Kilns, Lincoln County, Nevada: A Historical Context and an Archaeological Inventory*, Cultural Resource Report 040-11-1912 (Caliente, NV: U.S.D.I. Bureau of Land Management, 2011).

This report included attachments and supplements, including a two-page informational brochure entitled "The Perfect Place" with detailed illustrations of a charcoal kiln.

[37]Birkinbine, "Discussion," 393. Egleston, "The Manufacture of Charcoal in Kilns," 351. Gordon, *American Iron*, 35.

[38]Douglas H. Page, "Making Charcoal the Age-Old Way," *Utah Forest News*, 19:1 (2015), 8 – 11.

[39]Young and Budy, "Historical Use," 117.

[40]J. David Born, Ronald P. Tymcio, and Osborne E. Casey, *Nevada Forest Resources,* Resource Bulletin INT-76 (Ogden, UT: USDA Forest Service Intermountain Research Station, 1982), 51.

[41]Egleston, "The Manufacture of Charcoal in Kilns," *Journal of the United States Association of Charcoal Iron Workers,* 1:3 (November 1880):56-64; 2:1 (January 1881), 55-64.

[42]John Birkinbine, "The Production of Charcoal for Iron Works," *Transactions of the American Institute of Mining Engineers*, 7 (May 1878 – February 1879), 149-158. Birkinbine, "Our Fuel," 69-79.

[43]John Birkinbine, "The Production of Charcoal for Iron Works," *Transactions of the American Institute of Mining Engineers,* 7 (May 1878 – February 1879), 149-158. Birkinbine, "Our Fuel," 69-79.

[44]Walter Renton Ingalls, "The Silver-Lead Mines of Eureka, Nevada," *The Engineering and Mining Journal,* 8:23 (December 7, 1907), 1051-1058.

[45]Thomas J. Straka, Robert H. Wynn, and Charles E. Burkhardt, "Charcoal Kilns of Eureka and White Pine Counties," *Central Nevada's Glorious Past*, 28 (2009), 9-14.

[46]Marsha H. Bowers and Hans Muessig, *History of Central Nevada: An Overview of the Battle Mountain District,* Cultural Resource Series, Monograph No. 4. (Reno: Bureau of Land Management, Nevada State Office, 1982), 16-17.

[47]James A. Young and T.J. Svejcar, "Harvesting Energy from 19th Century Great Basin Woodlands," in *Proceedings: Ecology and Management of Pinyon-Juniper Communities within the Interior West*, Proceedings RMRS-P- (Ogden, UT: USDA Forest Service, Rocky Mountain Research Station, 1999), 47-50. [48]Lambert Molinelli and Company, *Eureka and Its Resources; A Complete History of Eureka County, Nevada* (San Francisco, CA: H. Keller and Company, 1879), 8, 25, 30-31.

[49]William O. Vanderburg, *Reconnaissance of Mining Districts in Eureka County, Nevada*, Information Circular 7022 (Washington, DC: U.S. Department of Interior, Bureau of Mines, 1938), 32, 36.

[50]A Bureau of Land Management interpretative sign in cooperation with the Eureka Historical Society was erected at the Phillipsburg Kiln. It states: "Built around 1869. This structure produced charcoal for several of the thirteen smelters around Eureka. The entire area visible from this location was denuded of trees, as five acres of timber were required for each firing. One charge produced 1400 bushels of charcoal for which Swiss-Italian workers received 27¢ per bushel."

[51]Russell R. Elliott, "The Early History of White Pine County, Nevada, 1854-1887," *The Pacific Historical Quarterly*, 30:2 (April 1939), 145-168.

[52]Raymond, *Statistics of Mines and Mining* (1877), 194. H. R. Whitehill, Biennial Report of the State Mineralogist of the State of Nevada for the Years 1877 and 1878 (San Francisco, CA: A. L. Bancroft & Company, Printers, 1879), 160.

James M. Hill, *Notes on Some Mining Districts in Eastern Nevada*, United States Geological Survey Bulletin 648 (Washington, D.C.: Government Printing Office, 1916), 182-183.

Francis Church Lincoln, *Mining Districts and Mineral Resources of Nevada* (Reno: Nevada Newsletter Publishing Company, 1923), 256-257.

[53]Mike Bunker, *Ward, Nevada and the Charcoal Ovens*, Historical Summary Report Developed for Ward Heritage Project, 1996, Bureau of Land Management Ely District. http://theusgenweb. org/nv/whitepine/Towns/wardhist.htm.

[54]Angel, *History of Nevada*, 664. Nevada State Parks, Department of Conservation and Natural Resources, "History of Ward Charcoal Ovens State Historic Park," http://parks.nv.gov/learn/ park-histories/ward-charcoal-ovens-history, accessed January 3, 2019. Nevada State Historic Preservation Office, "Ward Charcoal Ovens," State Historical Marker 184, http://shpo.nv.gov/ nevadas-historical-markers/historical-markers/ward-charcoal-ovens.

Allen Woodridge, "Ward Charcoal Ovens," *Nevada Magazine* (May/June 2014), https://www. nevadamagazine.com/issue/may-june-2014/7024/.

[55]Thomas J. Straka, Robert H. Wynn, and Charles E. Burkhardt, "Charcoal Kilns of Eureka and White Pine Counties," *Central Nevada's Glorious Past*, 28 (2009), 9-14.

[56]*Ward Reflex*, October 18, 1879, as cited by Bunker, *Ward, Nevada and the Charcoal Ovens*.

[57]*Ward Reflex*, September 6, 1879, as cited by Bunker, *Ward, Nevada and the Charcoal Ovens*.

[58]Nevada State Historic Preservation Office, "Ward Charcoal Ovens," Nevada State Historical Marker 184, Nevada State Park System, http://shpo.nv.gov/nevadas-historical-markers/historicalmarkers/ward-charcoal-ovens.

[59]W.E. Wieprecht, "Ward Charcoal Kilns," *National Register of Historic Places Inventory – Nomination Form for Federal Properties*, White Pine County, Nevada, Register Information System ID 71000491.

[60]*Ibid*. Nathan D. Thomas, personal communication, December 1, 2016.

[61]Nevada State Historic Preservation Office, "Ward Charcoal Ovens," Nevada State Historical Marker 184, Nevada State Park System, http://shpo.nv.gov/nevadas-historical-markers/historicalmarkers/ward-charcoal-ovens.

[62]Zeier and Reno, *The Panaca Summit Charcoal Kilns*, 40.

[63]*Ibid*, 26.

[64]*Salt Lake Tribune* (May 20, 1891), p. 6.

[65]*Pioche Weekly Record* (December 10, 1891), p. 4

[66]*Ibid.* (December 17, 1891), p.1

[67]*Ibid.* (December 31, 1891), p. 4

[68]*Ibid.* (February 4, 1892), p. 4

[69]James M. Hill, *Notes on Some Mining Districts in Eastern Nevada*, United States Geological Survey Bulletin 648 (Washington, DC: Government Printing Office, 1916), 124-137. James W. Abbott, "Pioche, Nevada," *Mining and Scientific Press*, 95:6 (August 10, 1907), 176-179.

[70]*Pioche Weekly Record* (October 15, 1881), 3

[71]*Mining and Scientific Press*, 40:14 (April 3, 1880), 213.

[72]*Tybo Sun*, February 8, 1879 and April 12, 1879, as cited in Charles D. Zeier and Ron Reno, *The Panaca Summit Charcoal Kilns, Lincoln County, Nevada: A Historical Context and an Archaeological Inventory*, Cultural Resource Report 040-11-1912 (Caliente, NV: U.S.D.I. Bureau of Land Management, 2011), page 24.

[73]Whitehill, *Biennial Report*, 77.

[74]*Pioche Weekly Record* (November 2, 1878), p. 3.

[75]*Ibid.* (July 16, 1881), p. 3.

[76]*Ibid.* (March 17, 1883), p. 4.

[77]*Ibid.* (January 16, 1886), p. 4

[78]Robert H. Wynn and Thomas J. Straka, "Lincoln County Charcoal Kilns," *Central Nevada's Glorious Past*, 28:1 (2009), 5-8.

[79]Stephen R. MacMillan, "A Historic and Photographic Study of Charcoal Kilns in the Silver State," Unpublished report on file at Nevada State Historic Preservation Office, 3-5.

[80]Tamara Stanton, interviews by author, February 2, 2015 and February 13, 2015. Ms. Stanton is granddaughter of Bob Steward and knows the history of the nearby ranch. Stones from the kilns were used to construct a cabin, school house, and barn on the ranch property. Family members recall the existence of the third charcoal kiln. The quantity of stones needed to construct the three buildings supports the original existence of three kilns (i.e., stones from one kiln would have been insufficient to construct the three buildings).

[81]Angel, *History of Nevada*, 523-527.

[82]Stanley W. Paher, *Nevada Ghost Towns and Mining Camps* (Berkeley, CA: Howell-North Books, 1970), 348-353.

[83]Robert H. Wynn and Thomas J. Straka, "Charcoal Kilns of the Hot Creek Range," *Central Nevada's Glorious Past*, 27:1 (2006-2007), 5-13.

[84]James A. O'Neill, "Central Nevada's Charcoal Industry," *Central Nevada's Glorious Past* 9 (May 1986), 12-15.

[85]Alan H. Patera, "Tybo, Nevada," *Western Places* 2 (Winter 1993), 5-34.

[86]Bureau of Land Management, *Proposed Wilderness Study Areas: Nevada BLM Intensive Wilderness Inventory* (Reno: United States Department of the Interior, Bureau of Land Management, 1980), 351.

[87]*Eureka Daily Sentinel,* March 9, 1877, p. 4.

[88]*Ibid*., March 9, 1877, p. 4.

[89]*Ibid*., March 9, 1877, p. 4.

[90]*Ibid*., August 8, 1877, p. 4.

[91]*Ibid*., August 31, 1877, p 4.

[92]Matthew E. Bangeman, Archaeologist, USDA Forest Service Humboldt-Toiyabe National Forest, personal communication, November 29, 2016.

[93]Thomas J. Straka and Robert H. Wynn, "Western Nevada and Eastern California Charcoal Kilns," *Central Nevada's Glorious Past,* 29 (2010), 7-11.

[94]Richard E. Lingenfelter, *Death Valley and the Amargosa: A Land of Illusion* (Berkeley: University of California Press, 1986), 139-140.

[95]Alan Hensher and Larry M. Vredenburgh, "The Early History of the Resting Springs Mining District," *San Bernardino County Museum Association Quarterly,* 44:2 (1997), 67-70.

[96]Kathleen Sprowl, "Spring Mountain PIT Project," *In-Stiu,* 7:2 (Fall 2003), 6-7.

[97]Stephanie Phillips, Testimony to Nevada Legislature Legislative Commission's Subcommittee to Study the Protection of Natural Treasures, February 10, 2006.

[98]J. Charles Whatford, "Fuel for the Fire: Charcoal Making in Sonoma County: An Overview of the Archaeology and History of a Local Industry," in *Proceedings of the Society for California Archaeology* 13 (2000), 112-120.

[99]Constance Darrow Knowles, *A History of Lumbering in the Truckee Basin from 1856 to 1936,* Office Report WPA Official Project No. 9512373 (Berkeley, CA: USDA Forest Service, Forest Survey Division, California Forest and Range Experiment Station), 23.

[100]Sue Fawn Chung, *Chinese in the Woods: Logging and Lumbering in the American West* (UrbanaChampaign, IL: University of Illinois Press, 2015), 63-65.

[101]Carrie E. Smith, USDA Forest Service, Tahoe National Forest, personal communication, August 11, 2016.

[102]Douglas H. Page Jr, Sarah E. Page, Thomas J. Straka, and Nathan D. Thomas, "Charcoal and its Role in Utah Mining History," *Utah History Quarterly*, 83:1 (Winter 2015), 20-37.

[103]Stanley W. Paher, Nevada Ghost Towns and Mining Camps (Berkeley, CA: Howell-North Books, 1970).

[104]Merrill J. Mattes, *Charcoal Kilns: Wildrose Canyon, Death Valley National Monument, California, Historic Structures Report* (San Francisco, CA: United States Department of Interior, Office of History and Historical Architecture).

[105]Thomas J. Straka, "Timber for the Cerro Gordo," *Sierra Heritage,* 24 (April 2005), 74-79.

[106]*Mining and Scientific Press*, March 18, 1877, p.181.

[107]Douglas H. Page Jr, Sarah E. Page, Thomas J. Straka, and Nathan D. Thomas, "Charcoal and its Role in Utah Mining History," *Utah History Quarterly*, 83:1 (Winter 2015), 20-37.

[108]"Ward Charcoal Ovens," State Historical Marker 184, Ward Charcoal Ovens State Historic Park. Quote is from: Nell Murbarger, "Charcoal: The West's Forgotten Industry," *Desert Magazine*, 19:6 (June 1956), 9.

Opium, Railroads, Surveying, and Figs
The Life of David van Lennep

Alan R. Wallace

Like so many other people in the American West in the 1800s, David van Lennep[1] was an adventurer. In Nevada, he was the County Surveyor in Humboldt County from 1869 into 1880. However, that was just one chapter in a remarkably diverse life that extended from the Mediterranean Sea to California. From roots in his Dutch family's international trading business in what is now western Turkey, Van Lennep went on to be the geologist for the early Union Pacific Railroad expeditions, a mining engineer and surveyor in Humboldt County, and finally a fig grower and engineer in the western foothills of the Sierra Nevada (Figure 1). Each phase of his life would have been enough for a major life story, but Van Lennep managed to live at least four lives and make major contributions at each step along the way.

Early days in Smyrna and New York City – 1826-1866

David van Lennep was born on August 5, 1826, in Smyrna, which now is Izmir on the coast of western Turkey (Figure 1). At the time, it was part of the Levant that included much of the eastern Mediterranean region. Smyrna was one of the largest trade ports in the area and included a blend of Muslim Ottomans, Christian Greeks, Jews, and Europeans. Many of the Europeans, including the Van Lenneps, were involved with international trade.

The Van Lenneps were perhaps the most successful Dutch merchants and traders in that part of the Levant in the Ottoman Empire in the 1700s and 1800s.[2] The trading company started with the arrival of David George van Lennep in the early 1730s, who periodically served as the Dutch consul and agent for Dutch trading companies. The family's company exported wool, figs, and other products from Asia Minor and imported a variety of goods from around the world. The company had an extensive network of suppliers and merchants throughout the world, and it was affiliated with one of the major Dutch trading consortiums. The Van Lennep house in Smyrna was a hub of social activity and a focal point of international trade and culture.[3,4]

Alan Wallace received his Ph.D. in geology at Oregon State University and then spent thirty-one years as a research geologist with the U.S. Geological Survey. More recently, he has focused on the early history of northwestern Nevada and wrote a book on the history of the Kennedy mining district in Pershing County.

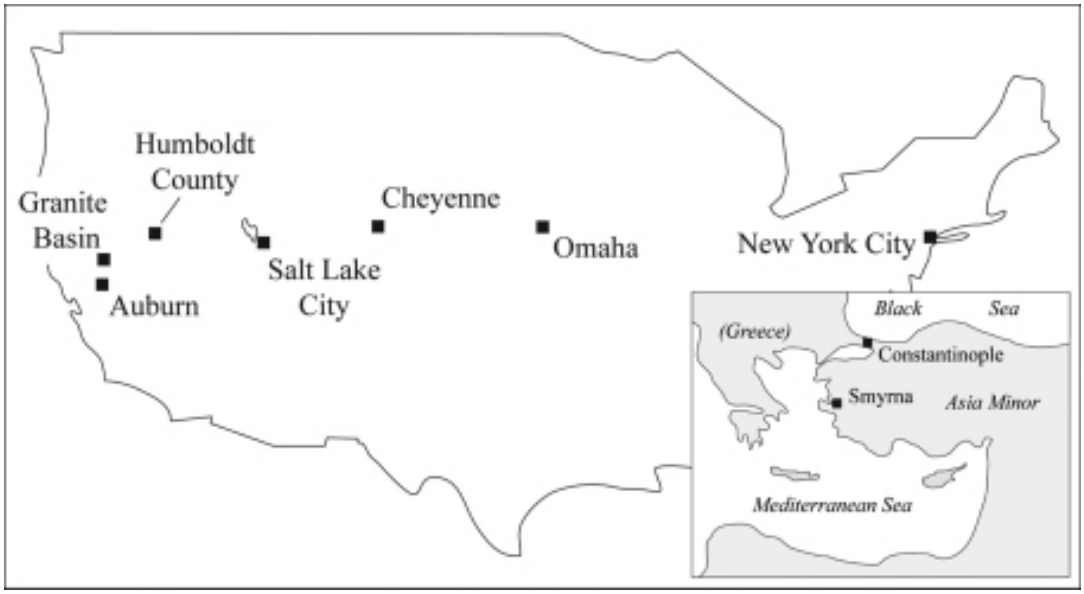


FIGURE 1. Locations in Asia Minor (inset map) and the United States where David van Lennep spent various parts of his life.

David George's eldest son Jacob van Lennep took over the company in the late 1700s, and the firm assumed the name of Jacob van Lennep & Co. Jacob's brother Richard—David van Lennep's father—was a partner in the new firm and became the Swedish consul for Smyrna. He traveled to the United States to develop strong trading contacts with merchants in that country, which became the primary destination for many of the company's shipments. The United States, in turn, relied heavily on this trade, and it waged two battles against Barbary Coast pirates in the early 1800s to eliminate the disruption of the trade routes.[5] The company progressively exported greater amounts of opium, and it imported various goods from the West Indies and the Netherlands to Smyrna and other markets. As the early 1800s progressed, the company and two other Smyrna-based Dutch firms were the major opium exporters in the world.[6]

Jacob van Lennep & Co. closed its business in 1848 largely due to rash business dealings and speculation on the part of Gustave van Lennep, who was in charge of the Constantinople office. Gustave was one of David van Lennep's brothers, and young David was an assistant in his brother's office for a period of time before the failure. Four of the brothers, including David but not including Gustave (Figure 2),[7] formed a new family company, Van Lennep & Co., in 1848. The company was, in essence, a continuation of the original family company but with new management and a clean financial slate; Jacob stepped aside as the leader but retained an important advisory role. They continued with the same trading and financial business of the earlier Van Lennep companies, and their shipments began to include emery abrasives that were mined in Asia Minor (corundum, a hard aluminum oxide, was the major component of the ores). All of the brothers had been privately educated, spoke several languages, and were steeped in international culture, finance, and trading from their youth.[8] David, at the age of just twenty-two in 1848, was an equal partner in the company with his older brothers. At least two of his brothers, as well as their father, had spent time in the United States; one brother, Henry, became a well-known missionary, educator, and philanthropist in the United States, Europe, and Asia Minor. The Smyrna area remained the hub of international trade and commerce, but the region still retained

FIGURE 2. Portrait of six of the seven sons of Richard van Lennep, taken in Smyrna in the mid to late 1840s. David van Lennep is seated at the left, reading a book. (*Reproduced with permission from Henrick van Lennep.*)[7]

much of the older tribal and rebellious cultures. Indeed, bandits kidnapped David's oldest brother Richard in 1851 and held him for ransom. The kidnappers released Richard after his wife paid the ransom, using the family gardener to carry the money.

Jacob van Lennep, the figurehead of the Van Lennep trading business, died in early 1855. The four brothers decided to dissolve the company and go in their own trade-oriented directions, although they retained close business connections and personal ties. David's brother Augustus (one of the four partners) moved to New York City around 1850 to work for a "commercial house" and then joined forces with Henry Quinan to form the Van Lennep & Quinan merchant business. With the dissolution of the family company, David moved to New York City to work with his brother in 1857. The Van Lennep & Quinan company was involved with international

trading and received contracts from the U.S. Government in the early 1860s during the Civil War. David became a naturalized citizen in New York City in 1860 and continued to work with his brother until 1864, when he "lost my health."[9] Augustus began working with trading companies in Holland, but he died in New York City in 1864.

David did not mention what ailed him, but it was not enough to keep him from making a major career change in the fall of 1864: on his doctor's advice, he enrolled in the Columbia College (now University) School of Mines in New York City to become a mining engineer. At the time, Columbia was one of the best, if not *the* best, mining and geology schools in the country. What prompted him to head in that direction is unknown. David was the youngest of the Van Lennep brothers and perhaps felt more freedom to follow other passions. Mining engineering was a major departure from what David had known his entire life but fit with his sense of adventure. The company's increasing export of emery abrasives from Asia Minor may have introduced him to the geology of the deposits and the surrounding region. He may have wanted to attend Columbia to learn more about mining and gain formal accreditation in the form of a degree. Mining engineering was a mental challenge, which for David was not a problem. It also could be a physically demanding job, and his active mining engineering and surveying career starting at Columbia indicates that his earlier health concerns were short lived.

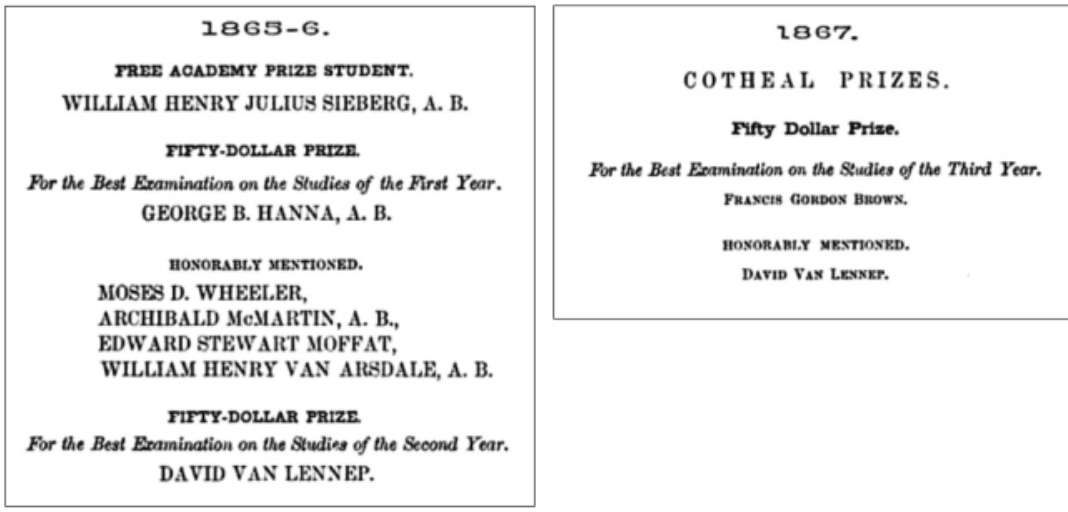
At the age of thirty-eight and already with an international background in trade, commerce, and culture, Van Lennep undoubtedly was very different from his fellow students. The School of Mines essentially was a form of graduate school. The three-year program began with the basics of physics, chemistry, mathematics, "machine drawing," and surveying, and it added more specialized mining-related and geology classes in the second and third years (cf. 1864 Columbia College Catalogue).[10]

The program also required its students to use their vacations between the school years to "visit mining and metallurgical establishments" and submit a report on the activities the following fall. Exceptional students were allowed to actually work at a mine or milling facility during the summer. Van Lennep was one of those top students. He was the best student in his second year and a runner-up as best student in his third year (Figure 3).[11,12] He also was one of the top students both years in the qualitative analysis test, which in essence was the metallurgy and chemistry examination. That success was a prelude to his future work as an assayer and mill manager, as described later. Although Van Lennep was part of the Class of 1867, he did not receive his degree until 1868.

Dr. John S. Newberry, a well-known naturalist and an acknowledged expert in geology and paleontology, joined the School of Mines faculty in the fall of 1866. Newberry had participated as a physician and geologist in early explorations of the Pacific Coast north of San Francisco, the Colorado River (the Ives Expedition), and the Santa Fe, New Mexico, region, so he brought to his students both his scientific expertise and his sense of exploration and adventure.[13] He may have been a stimulating influence on the equally adventurous and worldly Van Lennep in his last year of school.

UNION PACIFIC RAILROAD GEOLOGIST—1866-1868

The Union Pacific Railroad was starting to plan its route across the West during David van Lennep's first two years at Columbia. The idea for a transcontinental railroad had been alive for more than a decade, and early government surveys west of the Mississippi River in the 1850s, two of which included the physician, geologist, and naturalist Ferdinand Hayden, brought back a wealth of information.[14] The Pacific Railroad Acts of 1862 and 1864 established



1865-6.

FREE ACADEMY PRIZE STUDENT.

WILLIAM HENRY JULIUS SIEBERG, A. B.

FIFTY-DOLLAR PRIZE.

For the Best Examination on the Studies of the First Year.

GEORGE B. HANNA, A. B.

HONORABLY MENTIONED.

MOSES D. WHEELER,
ARCHIBALD McMARTIN, A. B.,
EDWARD STEWART MOFFAT,
WILLIAM HENRY VAN ARSDALE, A. B.

FIFTY-DOLLAR PRIZE.

For the Best Examination on the Studies of the Second Year.

DAVID VAN LENNEP.

1867.

COTHEAL PRIZES.

Fifty Dollar Prize.

For the Best Examination on the Studies of the Third Year.

FRANCIS GORDON BROWN.

HONORABLY MENTIONED.

DAVID VAN LENNEP.

FIGURE 3. David van Lennep's academic awards at Columbia College School of Mines in the 1865-1866 (left) and 1866-1867 (right) school years.[11,12] (*From Columbia College [1866; 1869*])

the Union Pacific and Central Pacific Railroads, which were to be built along a central route to the west and east, respectively, and meet somewhere in the middle.[15] The pace of rail construction in both directions ultimately would make Promontory Point in north-central Utah the meeting place in May 1869.

Grenville Dodge, a major-general in the U.S. Army, was put in charge of engineering for the railroad in May 1866. He sent engineer Thomas Bates to explore a possible route to the California-Nevada border in the event that the Union Pacific construction greatly outpaced that of the Central Pacific.[16] One of Dodge's major tasks was to finalize the route, and the major question was how to get past the Rocky Mountains to the Great Salt Lake. Dodge decided on a route over what is now the Laramie Mountains in southern Wyoming (then called the Black Hills) and then west towards the Great Salt Lake, primarily because it would be a lot cheaper, easier, and faster to build than other routes through the high mountains of Colorado west of Denver. The speed of construction was important because they were competing against the Central Pacific, and the more miles built to the west meant more income for the company. As a result, Dodge assigned engineer James A. Evans to focus on the difficult crossing of the Laramie Mountains in 1866.

The railroad needed a geologist to find essential coal, iron, and building stones; discovering some gold and silver along the route would be a bonus.[17,18] The railroad hired James T. Hodge of Massachusetts to explore along the proposed railroad routes in Wyoming and Colorado[19] in 1864, and Hodge wrote a section in the Union Pacific's annual report to Congress.[20] Hodge's work revealed the widespread occurrence of high-quality coal in the region, and he noted that its quality would meet the needs of the railroad. Hodge, however, returned to his work on the geology and coal deposits in the East, and the railroad needed another geologist.

David van Lennep joined the Union Pacific party in June 1866, but little is known about how a second-year student at Columbia School of Mines wound up in that position. As recounted in a 1922 editorial, "Dodge got hold of one David van Lennep, who was reputed

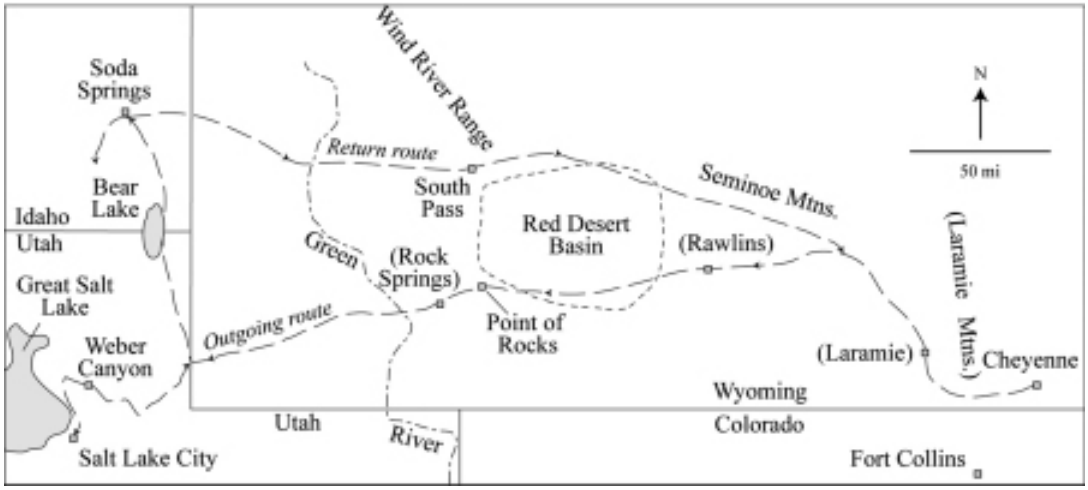


FIGURE 4. Routes of the Union Pacific Railroad parties in 1866 and 1867. David van Lennep spent 1866 in the Laramie Mountains, and he accompanied Grenville Dodge's party on its journey through southern Wyoming, Utah, and Idaho in 1867. The trace of the 1867 route is based on Grenville Dodge's descriptions.[23] Location names in parentheses are those given after 1867; the other names are those used by Dodge in his reports.

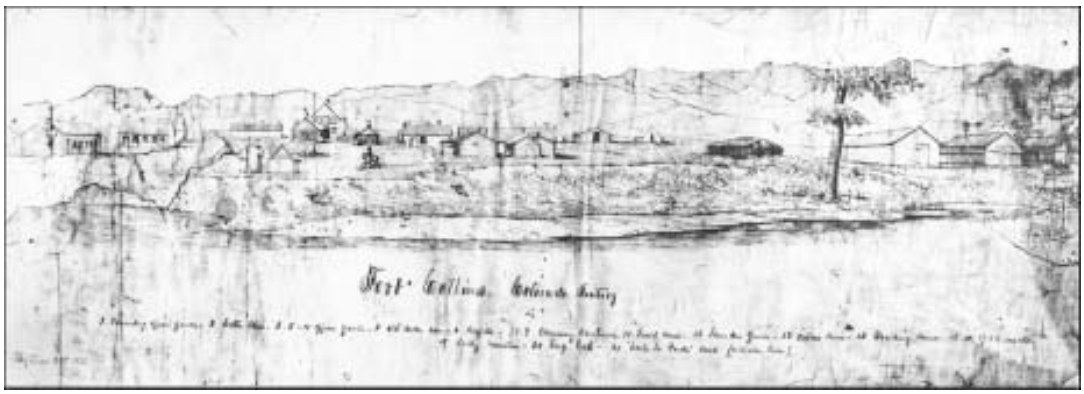
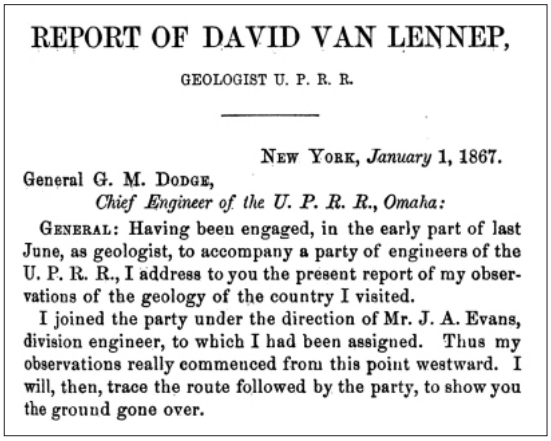


FIGURE 5. David van Lennep's sketch of Fort Collins in northern Colorado, made on September 22, 1866. The small print below the title numbered and described all of the buildings in the scene. (*Used with permission of the Fort Collins Local History Archive [Image No. H-00126], Fort Collins Museum of Discovery, Colorado*)



REPORT OF DAVID VAN LENNEP,

GEOLOGIST U. P. R. R.

NEW YORK, *January* 1, 1867.

General G. M. DODGE,
Chief Engineer of the U. P. R. R., Omaha:

GENERAL: Having been engaged, in the early part of last June, as geologist, to accompany a party of engineers of the U. P. R. R., I address to you the present report of my observations of the geology of the country I visited.

I joined the party under the direction of Mr. J. A. Evans, division engineer, to which I had been assigned. Thus my observations really commenced from this point westward. I will, then, trace the route followed by the party, to show you the ground gone over.

FIGURE 6. David van Lennep's introduction to his geologic report for the 1866 Union Pacific Railroad campaign.[28]

to be something of a geologist, to investigate… the mineral deposits accessible to the railroad line."[21] The railroad may have thought that the School of Mines, with its excellent reputation, could provide a qualified student who knew the basics of geology and mining and could build on Hodge's early work. Dodge had few New York connections, but Thomas Durant, the vice president of the company and Dodge's boss, mingled in the company of the railroad tycoons and other businessmen. It may have been Durant who connected Van Lennep with Dodge, just as he had with Hodge earlier.[22] Regardless, Van Lennep, given his age, background, and academic success, turned out to be an excellent choice, more than Dodge or (if he was involved) Durant first realized.

The spring 1866 term at the School of Mines ended in late May, and Van Lennep went directly to Omaha, Nebraska. On June 8, he joined a westward-bound party that was heading for Fort Kearney on the Platte River in central Nebraska. The party included his supervisor and engineer James Evans, and they continued west to begin a summer of exploration in the Laramie Mountains (Figures 1, 4).[23,24] Evans, in his summary report of the 1866 work, wrote that Van Lennep "accompanied me as assistant in the party, and incidentally as geologist of the expedition."[25] Evans added that he soon gave Van Lennep "all facilities for making [geologic] examinations." Thus, Van Lennep apparently started with two roles, but Evans turned over all of the geologic work to him shortly after the summer began once he realized that Van Lennep was a capable geologist and could be trusted on his own.

Van Lennep, both with Evans' party and at times alone with just a U.S. Army escort, began to explore both sides of the Laramie Mountains and from La Porte in the Fort Collins area in northern Colorado to the northern end of the Laramie Mountains (Figure 4). He recounted both his route and his geologic observations in several preliminary reports in the fall and a summary report sent to Dodge in January 1867.[26] The summary report included descriptions of the geography and physiography, as well as broad to detailed geologic observations. His report referred to earlier observations made by Ferdinand Hayden farther north in Wyoming, so he was aware of at least that work. Oddly, he did not mention Hodge's 1864 work at all, although Durant or Dodge must have given him a copy. Van Lennep's charge was to examine possible mineral deposits, and he managed to find several iron-rich deposits and coal beds along the eastern side of the Laramie Mountains near the proposed railroad route and down into northern Colorado. The summer ended with a late-September group tour of the Laramie Mountains route, starting in La Porte, that included Dodge, Evans, consulting engineer Silas Seymour, and Van Lennep. While waiting for the group to gather, Van Lennep took the opportunity to make a detailed sketch of the original Fort Collins (Figure 5). Seymour mentioned the presence of a geologist, but not by name, and his account of the trip focused more on the adventure of the trip with his better-known comrades than on the actual railroad route.[27]

Van Lennep returned to Columbia for his third and supposedly final year of school. He wrote the preliminary and final reports in the fall and early winter, and they undoubtedly doubled as the end-of-summer report that the School of Mines required. His 1866 final report was dated January 1, 1867, in New York City (Figure 6).[28] Van Lennep again excelled in school that year (Figure 3),[29] so his work for the railroad clearly did not get in the way of his classes. The high quality of Van Lennep's work caused Dodge to note that the final report "is certainly a valuable one to the company and the country."[30]

Grenville Dodge again tapped Van Lennep to be part of the exploration party for the summer of 1867 (Figure 7).[31] The party left Julesburg, in what now is the northeastern most corner of Colorado, and followed the North Platte River to the eastern flank of the Laramie Mountains, with Dodge founding Cheyenne on July 4 (Figure 4).[32,33] Two days later, Dodge

FIGURE 7. Photograph of the principal members and accompanying U.S. Army leaders in the 1867 Union Pacific Railroad campaign, led by Major-General Grenville M. Dodge.[31] David van Lennep is seated at the far left, and Dodge is seated in the middle, wearing a light-colored coat. Van Lennep was about forty years old at the time, and Dodge was about thirty-six years old.

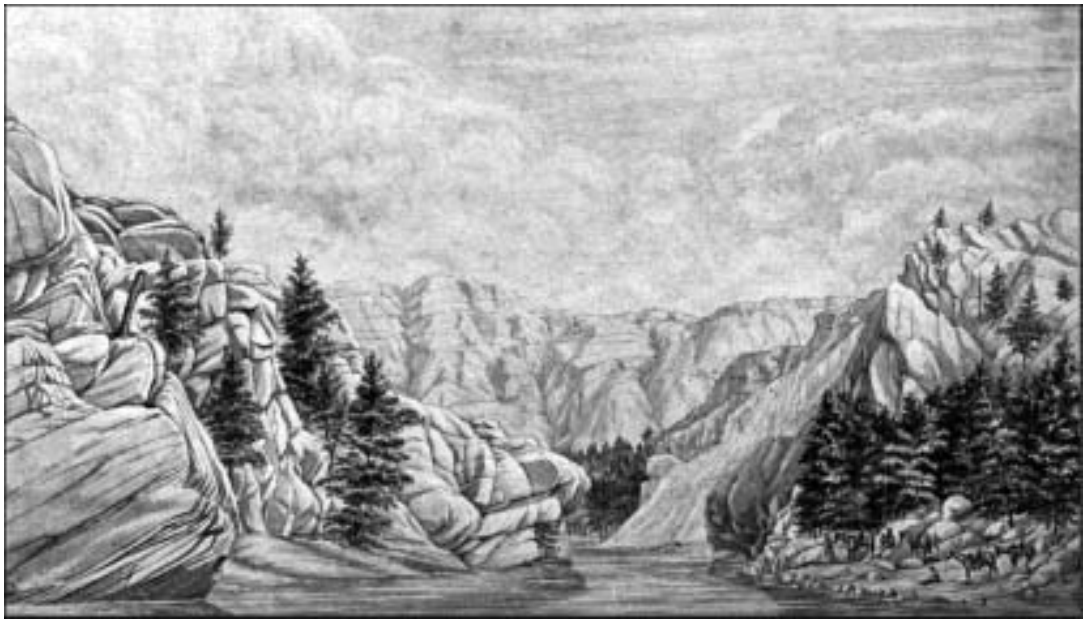


FIGURE 8. David van Lennep's 1867 sketch of the North Platte River as it entered the canyon through the Seminoe Mountains, central Wyoming.[35]

FIGURE 9. David van Lennep's drawing of a rest stop at the Continental Divide and the edge of the Red Desert Basin, central Wyoming (see also Figure 3).[37]

sent Van Lennep off with a U.S. Army escort to Lone Tree Creek, on the western side of the Laramie Mountains (south of present-day Laramie), to look for coal that might be near the planned railroad route. Rock exposures were poor, but he was able to find a few thin coal beds and hints of other coal beds.[34] He had to be in La Porte to the south on July 10, so he did not have a chance for more exploration.

From La Porte, the entire party, including a U.S. Army escort, headed north and then west through the dry southern part of Wyoming, across the barely noticeable continental divide, and into southwestern Wyoming and Utah (Figure 4). This followed the route that Thomas Bates earlier had suggested as being the best path for the railroad. The party presumably left La Porte shortly after July 10. It reached the Green River in west-central Wyoming on August 12 and Salt Lake City by the end of August. Their return trip veered to the north, and the party reached Bear Lake on September 8. From there, they arrived at the western side of the Wind River Mountains on September 19 (after enduring a blinding snowstorm in the mountains to the west), and then visited the new mining area at South Pass and southeast to their outward-bound route at the North Platte River. Van Lennep sketched the party at the mouth of the North Platte River canyon through the Seminoe Mountains when they reached the river (Figure 8).[35] Van Lennep earlier had identified extensive coal beds between the North Platte and Rock Creek to the east, and Dodge had him spend some extra time doing detailed work in that area.

The region was known, Dodge had even gone through parts of it during an expedition in the 1850s, although not with a railroad in mind. To say that the trip was arduous and dangerous is putting it mildly. In 1866 and 1867, all of Dodge's parties had U.S. Army escorts because the various Native American tribes in southern Wyoming were not happy with the new intruders, just as they had not been happy with the emigrant wagon trains and miners who invaded their lands for a couple of decades. They attacked several of Dodge's separate parties and killed various civilian and army members of the groups. When Dodge's main

party reached the Red Desert Basin in south-central Wyoming (Figure 4), he came across two of the groups who had lost quite a few members and were reluctant to proceed. The gold miners at South Pass told Dodge that the attacks "had been so bad that very little prospecting had been done." On top of it was the lack of water in the broad Red Desert Basin. Dodge found one of the advance parties, "unable to go foreward [*sic*] for want of water, with their horses gone, their [Army] escorts used up."[36] Not only was the lack of water a problem for the parties, but it also presented a problem for the future railroad. Nevertheless, Dodge and his compatriots scoured the area, covered a lot of territory, and planned the new railroad route. The conditions did not stop Van Lennep from studying the geology or even making sketches at more peaceful moments, such as one at the Continental Divide (Figure 9).[37]

Van Lennep produced two long summary reports on his 1866 and 1867 work,[38,39] and both he and Dodge intimated that he also submitted interim reports that presumably remained in the Union Pacific files. His work was remarkable for several reasons. First, he went into Wyoming with very limited background and no preconceived ideas, and almost everything was new to both him and everyone else. Second, Van Lennep had the gift of observation. His descriptions of landforms, rock types, and geologic structures were excellent, and his "stratigraphic column" in the Laramie Mountains showed the sequence in which the sedimentary units occurred (Figure 10A). Van Lennep's artistic skills complemented his observations, and he drew sketches that illustrated the features that he was seeing in the field (Figure 10B). Third, Van Lennep had the ability to make geologic interpretations of what he was seeing. Despite his limited formal geologic education, he was able to understand the geologic history. The railroad did not care about that, but it underscored Van Lennep's more intellectual bent.

Unfortunately, all of Van Lennep's work was done for the railroad and never published, or at least not in a conventional way. His 1866 report was one of several included in Dodge's overall summary of the summer's work for Oliver Ames, the president of the railroad. The railroad may have released that report later, but it did not get the wide circulation that typified other geologic reports. Dodge included all of the reports from the summer of 1867 in a package that he submitted to the U.S. Department of the Interior and the House of Representatives, so Van Lennep's report for that year appeared in Congressional documents. However, most scientists, both then and later, did not automatically turn to Congressional volumes for scientific reports. As a result, few people really knew about the work or Van Lennep's role. The U.S. Government granted public lands along the routes to the railroads in payment for the railroad construction, and the Union Pacific had no incentive to let the world know about the mineral deposits that were on its lands. A good example is L.W. Trumbull's summary of the coal resources in Wyoming as of 1905.[40] He mentioned that the Union Pacific began "prospecting" at several locations in 1867 (which would have been during Dodge's expedition that year) and began mining in 1868, but he did not mention Van Lennep's role in that work. Similarly, both Evans' and Van Lennep's 1866 reports described finding various iron deposits on the east side of the Laramie Mountains. Later work in the area by S.H. Ball[41] and others did not cite either Van Lennep's or the Union Pacific's roles in identifying some of those deposits.

Esteemed Federal geologists Clarence King and Ferdinand Hayden worked in southern Wyoming within a couple of years after Dodge's parties were there. King led the Fortieth Parallel Surveys in the late 1860s and looked at the same coal deposits as Van Lennep. He did not specifically mention Van Lennep's work,[42] but the 1922 Pan American Geologist editorial mentioned that King could not materially add any new information to what Van Lennep had written.[43] Hayden led an expedition in 1868 that passed through some of the same area and saw some of the same coal deposits. Hayden wrote that "Mr. Van Lennep, connected

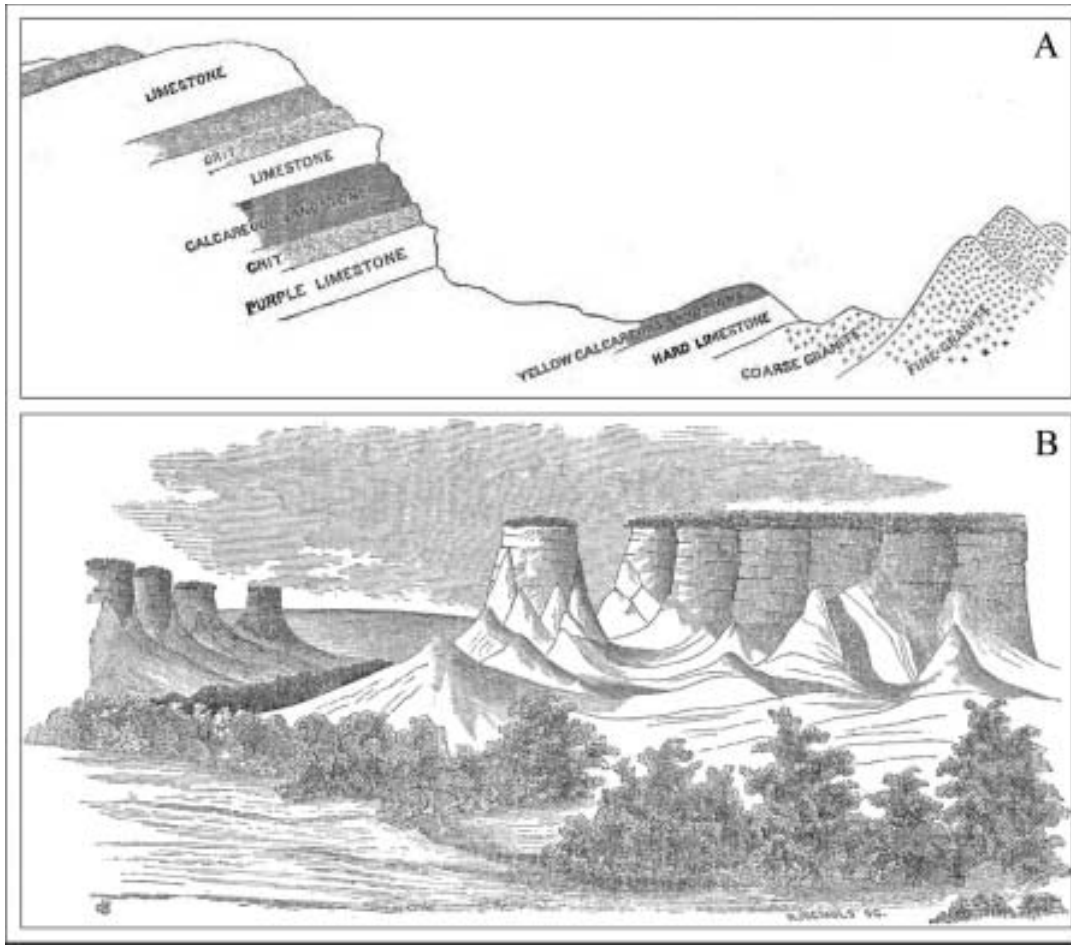


FIGURE 10. David van Lennep's geologic illustrations.[38] (A) Stratigraphic column for the sedimentary and igneous rocks in the Laramie Mountains, southern Wyoming. (B) Landforms created by erosion in the Laramie Mountains (Laramie Range), southern Wyoming. The sketches were drawn in the summer of 1866 and then etched by H. Nichols for the final report. His abbreviated signature of "dVL" appears in the lower left-hand corner of (B).

with the Union Pacific Railroad as geologist, described more than fifty localities where the coal crops out to the surface not far distant from the line of the road."[44] However, with no widely circulated reports for others to examine, later geologists who worked in the region were unaware of Van Lennep's contributions and thus did not acknowledge them. Although Van Lennep was not of the caliber of King and Hayden, he was a very capable geologist in his own right. Indeed, Dodge, in his later summary of building the railroad, wrote that Van Lennep's reports "have been remarkably verified in later and more detailed examinations."[45]

Had the railroad job not interceded, Van Lennep would have finished the three-year program at Columbia College at the end of the spring term of 1867. He went back to school for his final year while still putting together the 1866 summary report, and he was back in Wyoming in 1867 after the spring term ended. For some reason, possibly due to an early departure to the field, he did not receive his degree that spring, even though he did very well

on the final exams. Omaha, Nebraska, was the "dateline" of his January 30, 1868, summary report of the 1867 field season, and he may have returned to New York City only to receive his delayed diploma in May 1868. The one and only goal of the Union Pacific Railroad in 1868 was to build rail lines as fast and far as possible,[46] and it no longer needed a geologist to find coal and other materials. With a degree in hand, it was time for Van Lennep to move on to the next chapter of his life.

HUMBOLDT COUNTY, NEVADA, SURVEYOR AND MINING ENGINEER – 1868-1880

The California Trail, followed by tens of thousands of pioneers on their way to California in the late 1840s and 1850s, passed right next to the Humboldt Range. The riches in those mountains went undiscovered until 1860, and the discoveries prompted the rapid formation of several significant mining districts and towns over the next two years. Among the towns were Humboldt City, Unionville, Star City, Etna, and a variety of smaller concentrations of miners and mills. Almost every canyon draining out of the rugged mountains had mining activity. The area was extremely remote, and freight routes quickly developed to carry goods and machinery back along the pioneer routes from Marysville and Chico in California and Virginia City, Nevada, to the southwest. Unionville soon became the county seat for Humboldt County. Despite the remote setting, places like Unionville and Star City had a robust collection of well-stocked businesses.

David van Lennep sailed from New York City to San Francisco via the Isthmus of Panama and arrived in Unionville, in the Humboldt Range of northwestern Nevada, sometime in June 1868[47] (Figures 1, 11, 12). A New York City mining company with properties in Unionville and Dun Glen (in the East Range to the northeast) hired him to oversee their mines.[48] The Humboldt Range offered an opportunity for him to put his mining engineering skills to work. The area already may have been familiar to him. Grenville Dodge had sent Thomas H. Bates to explore the Nevada part of the Pacific Railroad route in 1866, and Bates mentioned the Humboldt Range mining districts in his report.[49] Van Lennep was not part of that trip, but he undoubtedly read the report and listened to what Bates had to say about the area. Curiously, Dodge wrote that Van Lennep eventually looked at the geology "from the Missouri River to the Pacific."[50] If true, then Van Lennep could have passed by the Humboldt Range mining districts at the tail end of his Union Pacific work.

The first record of Van Lennep's presence was on July 3, 1868, when he and two other men sold part of the Manitowoc ledge, indicating that he was in Unionville at some point before then to buy into the property.[51] The deed said that it was "owned and governed by the Smyrna Company," an obvious reference to Van Lennep's past. (Many mining "companies" were not incorporated, but were an informal working relationship between several property owners). In early September, he went into business in Unionville as an assayer and surveyor, and Unionville's *Humboldt Register* (despite misspelling his last name) called him "Prof." in recognition of his university degree[52] (Figure 13, top). Van Lennep also bought into various other claims in the region, including one near Unionville and others in the Dun Glen area in the East Range northeast of Unionville, the Relief district at the south end of the Humboldt Range, and later in the Winnemucca district when he lived in nearby Winnemucca.

Van Lennep's surveying and assaying business did very well. The *Humboldt Register* and its successor the *Silver State* routinely noted that miners took their ore to him for assaying, and he also surveyed the locations of mining claims. Despite his remote location,

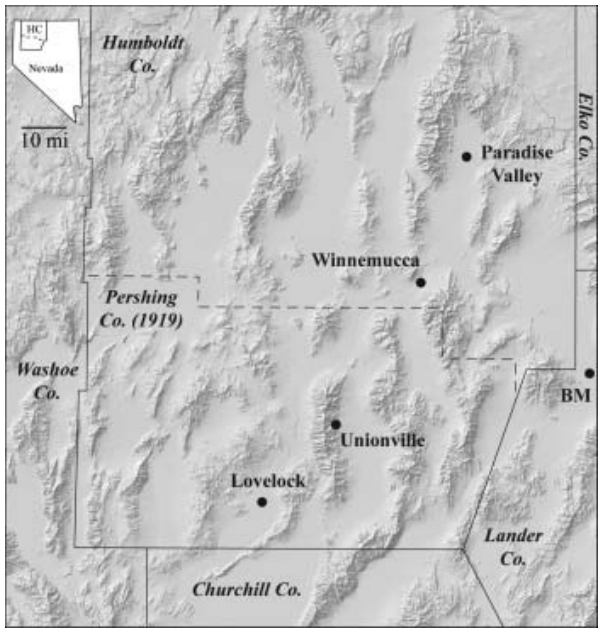
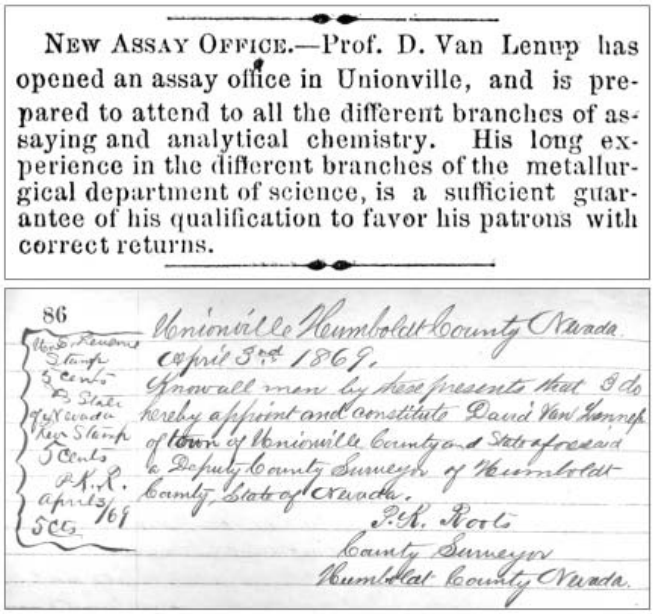


FIGURE 11. Map of Humboldt County and nearby areas, northwestern Nevada (see inset index map for location). The county included what now is Pershing County until that county formed in 1919. The modern county boundaries as shown are somewhat different than those in the late 1860s and 1870s, but the general outline then was similar. BM=Battle Mountain. (*Digital shaded relief map from the Nevada Bureau of Mines and Geology*)

FIGURE 12. Photograph of Unionville, Nevada, taken in the early 1870s. John C. Fall's gold-silver mill is in the middle left, and the tall steeple of the Methodist Church is in the right background, with the white schoolhouse up the hill to the right. The majority of the buildings line Main Street in the middle of the photograph. (*Used with permission of the Humboldt Museum, Winnemucca, Nevad*a)



NEW ASSAY OFFICE.—Prof. D. Van Lenup has opened an assay office in Unionville, and is prepared to attend to all the different branches of assaying and analytical chemistry. His long experience in the different branches of the metallurgical department of science, is a sufficient guarantee of his qualification to favor his patrons with correct returns.

86

Unionville Humboldt County Nevada
April 3rd 1869.

Know all men by these presents that I do hereby appoint and constitute David Van Lennep of Town of Unionville County and State aforesaid a Deputy County Surveyor of Humboldt County State of Nevada.

P.K. Roots
County Surveyor
Humboldt County Nevada.

FIGURE 13. The start of David van Lennep's professional life in Unionville. (Top) Announcement of David van Lennep's new assaying and surveying business. Misspelled names were not unusual in the newspaper. (*From the Humboldt Register, October 24, 1868*).[52] (Bottom) Official record of the appointment of David van Lennep to be the Deputy Humboldt County Surveyor, April 3, 1869.[53] (*From Humboldt County Record Book, 1863-1884, Humboldt County Recorder, Winnemucca, Nevada*)

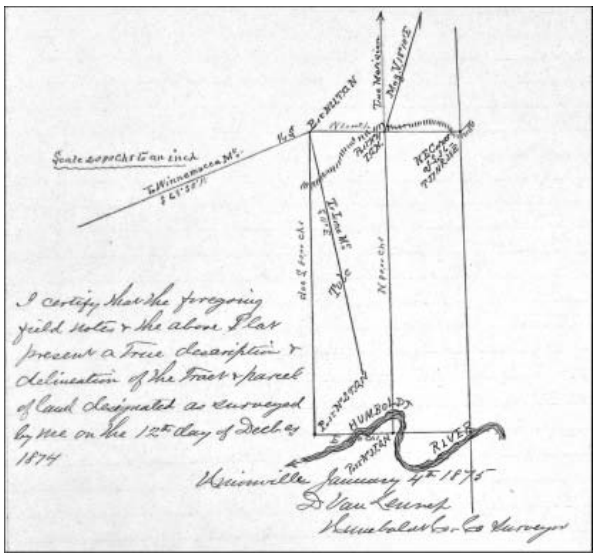


FIGURE 14. Survey plat of farming land along the Humboldt River northeast of Winnemucca. Surveyed December 12, 1874, and recorded early the next month. This was typical of the many surveys that David van Lennep did as the County Surveyor in the 1870s.

he was elected to be a member of the American Institute of Mining Engineers in 1872.[54] Philander K. Roots was the county surveyor, and he hired Van Lennep to be his deputy in April 1869 (Figure 13, bottom). Van Lennep's first official survey in this capacity was of a mill and land claim in Humboldt City, in the northwestern part of the Humboldt Range. He made the official survey of a new addition to the lower part of Unionville in September and then created a better map in 1874. Roots resigned in late 1869, and Van Lennep became the *de facto* county surveyor, although the position was not officially his until he was elected later. From his first recorded survey until his last in 1878, he surveyed and recorded more than ninety pieces of land in the county, including ranch and farmlands (Figure 14),[55]

water ditches, mining and milling claims, toll roads, and at least two town sites (Relief and Paradise City) in addition to Unionville. Many of the public lands remained unsurveyed, and Van Lennep was appointed to be the U.S. Deputy Mineral Surveyor for Humboldt County in 1872 to survey townships in the county.[56] The county had few roads, and just getting to some of the locations required multi-day, cross-country horse or wagon rides.

Unionville was a far cry from the culture-rich life that Van Lennep had enjoyed in Smyrna and New York City, but it was much more civilized than Wyoming and the still-wild parts of Anatolia. Van Lennep proved that he could live in both worlds quite easily. He bought an adobe house in Unionville, which he shared with John Guthrie, a young freight driver. He then upgraded to a wood-framed house in the lower part of Unionville in 1872. The house faced onto busy and dusty Main Street, so he moved it back twenty feet, planted trees in front, and erected an assay office in back. The town wanted to build a Methodist church in 1870, and he became one of the church trustees, arranging for a minister, the purchase of land for the church and the minister's house, and then the construction of the church, even to the final raising of the church bell. In 1874, the *Silver State* reported that a "poor widow woman, with three small boys" arrived by stage in Unionville, and that Van Lennep and the Methodist minister raised the funds to allow her to continue on her way.[57] He also was involved with the Sons and Daughters of Temperance, which variously met at the school, church, and, oddly, the upper floor of the brewery next to Van Lennep's house.

Susannah V. Groves moved to Unionville in the fall of 1872 to be the teacher at the school. She was the much younger sister of Isaac N. Groves, the well-regarded doctor in town. Susannah was born in Ohio in 1840, worked there as a home school teacher, and then joined Isaac and his family in Nevada. Her cousin, Emma England from Ohio, joined her in the fall of 1873, and they co-taught the sixty-seven students at the school.[58] David van Lennep (and undoubtedly most of the single men in town) met Susannah after she arrived in 1872. She probably perceived Van Lennep to be a cut above many of the miners and workers in the mining camp.

Unionville's mines were fading by the early 1870s, and with them went the town's influence. Winnemucca managed to wrest the county seat from Unionville in 1872, and all of the county offices—including Van Lennep's—moved to Winnemucca. The new county seat was along the Central Pacific Railroad line, and it was becoming the economic center of northwestern Nevada as a result. One new addition to the town was the Humboldt Reduction Works, which processed ore brought in from mines in the region (Figure 15). Joe Ginaca, one of the original settlers in what became Winnemucca, built a gold-silver mill there in 1867. Ginaca's assayer became ill and then died, and Van Lennep moved to Winnemucca in March 1875 to be the assayer and manager of the facility. He bought a house in May and proposed to Susannah. David and Susannah were married in Unionville on June 30, 1875 (Figure 16).Their son Henry Groves was born the next year, followed by Edward David in late 1879. Van Lennep was a busy man: he continued his job as the county and U.S. surveyor while also running the mill (Figure 17).[59,60] He served on the county board of commissioners, and both he and Susannah were active in various civic and religious groups and events in Winnemucca, just as they had been in Unionville. He, along with R.W. Wood, also owned the Winnemucca Gaslight Company in the late 1870s.

Joe Ginaca and his partner Anthony Gintz borrowed money for a long water canal that would pass through Winnemucca and extend south to the Humboldt Range. The canal never made it beyond Winnemucca, and the people who lent money for construction began to file lawsuits in the mid 1870s.[61] The Boca Mill Company of Sacramento, one of the creditors,

FIGURE 15. The Humboldt Reduction Works, Winnemucca, Nevada. Photograph taken in about 1875, looking south. The nascent town of Winnemucca is in the background. David van Lennep was the chief assayer and manager of the facility from 1875 until about 1878. (*Used with permission of the Humboldt Museum, Winnemucca, Nevada*)

FIGURE 16. Photograph of David and Susannah van Lennep, taken in Winnemucca, Nevada. The photographer, Henry C. Tandy, was based in Winnemucca from 1873 into the mid 1880s. The Van Lenneps were married in 1875 and left Winnemucca in 1880, indicating that the photograph was from that period. (*Photograph used with the permission of Craig Encer, executive secretary, Levantine Heritage Foundation, London, England*)

was awarded the canal and the reduction works in one of the lawsuits in 1877. David van Lennep was involved with two related lawsuits as both a defendant and a plaintiff that year, and the Boca owners were on the opposing side of each action. He had not been involved with the original financial deals, but his management position appears to have involved him enough that the Boca Mill Company added him to new lawsuits (as did he in kind). His advertisements for surveying and assaying in the *Silver State* began to list his residence as his place of business by early 1878, indicating that he no longer worked at the reduction works.

Van Lennep still held the two surveying positions, but fewer people asked for an official land survey in the late 1870s. His last recorded survey as county surveyor was in 1878, although he continued to do surveys for individuals and companies and assay ore that miners brought to his office. With the loss of the steady job at the reduction works, the Van Lenneps decided that it was time to move on. Van Lennep spent late August and early September of 1880 in California searching for a new position. In November, he resigned from his county commissioner position and sold his share of the gaslight company to his partner, and the family moved to Granite Basin in the northern Sierra Nevada. Humboldt County elected another man to be the county surveyor in the November election, so Van Lennep must have resigned from that position earlier in the fall in anticipation of a move.

California Mining Engineer and Fig Grower – 1880-1910

The Granite Basin mining camp in Plumas County, California, was in a very remote area southwest of Quincy in the northern Sierra Nevada (Figure 1). The area, although very pleasant in the summer and fall, receives a lot of rain and snow in the winter, and the Van Lenneps arrived as winter set in. In an 1881 report to H. C. Burchard (the Director of the Mint)[62] Van Lennep wrote that the mining camp had "seven families, besides single men" and every-other-day stage service, but no "postal communication." The small size and isolation did not deter the Van Lenneps: David obviously thrived in remote places, and Susannah had enough of an adventuresome streak to head from Ohio to Unionville eight years earlier. The only difference was that they now had two small boys, one of whom was only a year old.

The district started in the early 1860s, faded quickly, and came back to life in the early 1870s when several rich veins were discovered. By 1880, the district had four small mills to process the ore, with plans to add one or two larger mills (*Plumas National* article in the 1881 Burchard report mentioned above). Van Lennep's 1881 report to Burchard implied that he was working for several of the mills to improve their efficiency. The 1882 voter registration rolls listed him as a mining engineer.

The family stayed in Granite Basin for a year and a half and then moved south to Auburn in Placer County (Figure 1), arriving in 1883. Auburn started in the late 1840s as a major placer-mining camp and then evolved into the center of government and commerce for the area. The Central Pacific Railroad ran through town and made Auburn an important transportation center, just as it had for Winnemucca farther east. Auburn's population was about 1,200 people in 1880; compared to much smaller Unionville and Winnemucca, not to mention tiny Granite Basin, Auburn was a major change. The town had a strong Methodist church, good schools, and a mild, temperate climate. Coupled with the robust economy, it made an attractive home for the Van Lenneps.

The Van Lenneps bought a twenty-four-acre homestead on a low ridge just south of the Auburn city limits in early 1883, within sight of the county courthouse.[63] David contracted for water from an adjacent abandoned placer mine for irrigation and proceeded to plant a variety

HUMBOLDT
REDUCTION WORKS.

ON AND AFTER THIS DATE WE WILL charge the following rates per Ton for Working Ores:

For Working Ten Tons and Upwards, $25 per Ton.

For Less than Ten Tons and More than One Ton, $30.

For Less than One Ton, $35.

When the assay value of ores worked is above $400 per ton, 82 per cent. in bullion will be paid. When less than $400, 80 per cent.

DISCOUNT ON BULLION

At Current Rates.

In connection with the Mill we have a First-class

CUSTOM ASSAY OFFICE

Under the Supervision of competent Assayers. No quantity of Ore, however small, will be worked for less than $5.

D. VAN LENNEP, Manager.

Winnemucca, August 20, 1875.—tf

D. VAN LENNEP,
ASSAYER,
County Surveyor
....AND....
U. S. DEPUTY MINERAL SURVEYOR

For this and other Counties.

Office at the Humboldt Canal Reduction Works,

Winnemucca, Humboldt County, Nevada.

Assays of Ores and Bullion made at reasonable rates. del

FIGURE 17. Advertisements in the *Silver State* for the Humboldt Reduction Works, with David van Lennep as the manager[58] (top), and David van Lennep as U.S. and County Surveyor and mill manager[59] (bottom)

FIGURE 18. Detail of a survey plat for a housing tract survey in Auburn in 1888, showing David van Lennep's survey information. (*Used with permission of the Placer County Archives, Auburn, California*)

of fruit trees. The 1884 Placer County tax assessment book showed that he also had a couple of milk cows and sixty chickens. David became a United States citizen on March 13, 1883.[64]

David lived something of a dual life over the ensuing years. He variously called himself a rancher or a surveyor in the voter registration rolls and census records. His 1910 obituary said that he "led an active life as a fruit grower and surveyor,"[65] and Susannah's 1925 obituary said that she had been married to "a noted horticulturalist."[66] He even won an award for a new type of sealing wax for canning at the Oakland fair in 1889.[67] He continued to do surveying, likely to generate some income, and the limited recorded surveys were for

FIGURE 19. Photograph of the Van Lennep family in Auburn, California, in 1902. David van Lennep is seated on the left, and his wife Susannah is seated on the right. Behind them, from left to right, are their son Henry Groves van Lennep and his wife Mary Elisabeth van Lennep, and their son Edward David van Lennep. (*Used with the permission of Henrick Van Lennep*)

water ditches related to agriculture in the surrounding area and new housing developments in Auburn itself (Figure 18). Unlike his days in Humboldt County, he stayed fairly close to home for the few surveys that he completed. The last recorded survey was done in 1893, when he was sixty-seven years old.

Horticulture, especially growing figs, became his increasing preoccupation. Auburn was part of a fertile fruit-growing belt along the western slope of the Sierra Nevada. The Central Pacific Railroad carried the produce west to San Francisco and as far east as New York City. In 1884, one of Van Lennep's brothers in Asia Minor sent him cuttings of Smyrna fig trees, which were a major crop in the Smyrna area and becoming more common in California thanks to the similar Mediterranean-like climate. Van Lennep planted the cuttings on his farm, some of the first fig trees to be planted in the foothills area, and watched them grow to their full size over the next few years.[68]

The figs, however, fell to the ground before maturing, a fate common to all of the fig orchards in the state. Unbeknownst to the early fig growers, the Smyrna trees (as compared to other varieties) needed the fruit of wild fig trees to provide pollen and a wasp (called Blastophaga) native to Asia Minor to carry the pollen from the wild fruit to the domestic trees.[69] As it turned out, Van Lennep's older brothers in Smyrna had studied the problem and proven the need for the wild figs and the wasps.[70] In 1890, George Roeding, a California fig grower near Fresno, corresponded with one of the Van Lennep brothers (on the advice of David), imported the wild trees and wasps, and was successful.[71] On the basis of a May 1891 lecture that David delivered to the Placer County Farmers Institute meeting in Auburn, he also had been corresponding with his brothers about the problem.[72] Word spread to other fig growers over the next few years, and the California fig industry began to boom in the late 1890s. Various horticultural reports of the day cited Van Lennep's role in helping to resolve the fig problem.

The rest of the family kept busy as well. Susannah became very involved with the Women's Christian Temperance Union in the early 1890s. She served as an officer for the Placer County chapter and gave lectures on women's rights at state meetings. The Union in the 1890s was very involved with the suffrage movement, and Susannah was active in that movement. Sons Henry and Edward variously worked as farmers, electricians, and mechanics, and they got married and began to raise families of their own.

David van Lennep turned eighty in 1906 and was slowing down (Figure 19). In 1907, he and Susannah sold two small portions of their land, and David deeded over his share of the remaining twenty-five acres to Susannah, likely to give her full ownership in the event of his death. The next year, their son Edward shipped fruit from the family farm, a task that David undoubtedly handled in the past. David died in Auburn on February 27, 1910; he was buried in the Old Auburn cemetery. His obituary said that he died of old age, and that "the physical frame was tired out and took its needed rest."[73] It added that "he led a Christian life on week days as well as on Sunday," and that he was "strict and conscientious in his own conduct" and saw the best in other people.

Susannah sold the property at the end of the year and moved in with Henry and his family in Auburn. She remained socially active until she died of a stroke in 1925 in Auburn; she was cremated in Sacramento. Edward was electrocuted and died while doing wiring at an Auburn restaurant in 1914, and Henry, after running the successful Auburn Garage for many years, died from diabetes in Sacramento in 1935. Edward was buried in Auburn next to his father, and Henry was cremated in Sacramento like his mother.[74]

Notes

[1] The "van" in a Dutch name is lower case when used as part of the full name ("David van Lennep") and capitalized in all other cases, such as "The Van Lennep family" or to start a sentence (Henrick van Lennep, 2017, written communication). The same practice applies to the artist Vincent van Gogh. Van Lennep's survey records in official Humboldt and Placer County record books used "David Van Lennep," such as seen in a few figures in this paper, but he was not the one who transcribed the original records into the books.

[2] Jan Schmidt. *From Anatolia to Indonesia: Opium Trade and the Dutch Community of Izmir, 1820-1940*. Istanbul: Nederlands Historisch-Archaeologisch Instituut, 1998.

[3] *Ibid*.

[4] Henrick Van Lennep. "The Van Lennep Genealogy–Smyrna Branch." 2007. Leventine Heritage Foundation, accessed December 30, 2018, http://levantineheritage.com/pdf/The_Van_Lennep_Genealogy_Smyrna_Branch.pdf.

[5] Frank Lambert. *The Barbary Wars: American Independence in the Atlantic World*. New York: Hill & Wang, 2005.

[6] Jan Schmidt. *From Anatolia to Indonesia: Opium Trade and the Dutch Community of Izmir, 1820-1940*. Istanbul: Nederlands Historisch-Archaeologisch Instituut, 1998.

[7] Henrick Van Lennep. "The Van Lennep Genealogy–Smyrna Branch." 2007. Leventine Heritage Foundation, accessed December 30, 2018, http://levantineheritage.com/pdf/The_Van_Lennep_Genealogy_Smyrna_Branch.pdf.

[8] Jan Schmidt. *From Anatolia to Indonesia: Opium Trade and the Dutch Community of Izmir, 1820-1940*. Istanbul: Nederlands Historisch-Archaeologisch Instituut, 1998.

[9] Letter from David van Lennep to Frank Karel van Lennep, June 14, 1901. Sent from Auburn, California. Used with permission of Henrick van Lennep, Amsterdam.

[10] Columbia College. *Catalogue of the Officers and Students of Columbia College for the Year 1864-1865*. New York: D. Van Nostrand, 1864.

[11] Columbia College. *Catalogue of the Officers and Students of Columbia College for the Year 1865-1866*. New York: D. Van Nostrand, 1866.

[12] Columbia College. *Catalogue of the Officers and Students of Columbia College for the Year 1868-1869*. New York: D. Van Nostrand, 1869.

[13]Charles A. White. "Biographical Memoir of John Strong Newberry, 1822-1892." 1902. National Academy of Sciences, accessed December 30, 2018., http://www.nasonline.org/publications/biographical-memoirs/memoir-pdfs/newberry-j-s.pdf.

[14]*Ibid*.

[15]Maury Klein. *Union Pacific, Volume 1: 1862-1893*. Minneapolis: University of Minnesota Press, 1987.

[16]Grenville M. Dodge. *How We Built the Union Pacific Railway, and Other Railway Papers and Addresses*. Council Bluffs, Neb.: Monarch Printing Co., 1910.

[17]*Ibid*.

[18]E.L. Sabin. *Building the Pacific Railway*. Philadelphia: J.B. Lippincott Company, 1919.

[19]Modern geographic and state names are used for clarity and simplicity. The Laramie Mountains were called the Black Hills in the mid 1860s; the "Black Hills" name later became associated with mountains in western South Dakota. Nebraska became a territory in 1854, shrank in size as adjacent territories were created, and gained statehood in 1867. The Territory of Colorado was created in 1861, and statehood was granted in 1876. Wyoming originally was part of the Territory of Nebraska; it became the Territory of Wyoming in 1868 and then a state in 1890. Southern Wyoming, the location of the Union Pacific Railroad route, remained part of the Territory of Nebraska until 1868. The Humboldt Range mines and towns started as part of the Territory of Utah; they became part of the Territory of Nevada in March 1861 and then the State of Nevada in October 1864.

[20]James T. Hodge. "Report of Professor James T. Hodge, Geologist, to the President and Board of Directors of the Union Pacific Railroad Company." In *Executive Documents Printed by Order of the House of Representatives During the Second Session of the Fortieth Congress, 1867-'68*. 16: 45-54. Washington, D.C.: Government Printing Office, 1868.

[21]The Pan-American Geologist (editorial). "Beginnings of Economic Geology in America." *The Pan American Geologist* 37, no. 6 (1922): 395-98.

[22]Maury Klein. *Union Pacific, Volume 1: 1862-1893*. Minneapolis: University of Minnesota Press, 1987.

[23]Grenville M. Dodge. "Report of G.M. Dodge, Chief Engineer Union Pacific Railroad to the President and Board of Directors." In *Executive Documents Printed by Order of the House of Representatives During the Second Session of the Fortieth Congress, 1867-'68*. 16: 1-22. Washington, D.C.: Government Printing Office, 1868a.

[24]Grenville M. Dodge. *How We Built the Union Pacific Railway, and Other Railway Papers and Addresses*. Council Bluffs, Neb.: Monarch Printing Co., 1910.

[25]James A. Evans. 1868. "Report of James A. Evans (December 31, 1866)." In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 5-46. Washington, D.C.: Philp & Solomons, 1868.

[26]David van Lennep. "Report of David Van Lennep (January 1, 1867)." In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 97-123. Washington, D.C.: Philp & Solomons. 1868b.

[27]Silas Seymour. *Incidents of a Trip through the Great Platte Valley to the Rocky Mountains and Laramie Plains in the Fall of 1866, 2nd Edition*. New York: D. Van Nostrand, 1867.

[28]David van Lennep. "Report of David Van Lennep (January 1, 1867)." In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 97-123. Washington, D.C.: Philp & Solomons. 1868b.

[29]Columbia College. *Catalogue of the Officers and Students of Columbia College for the Year 1868-1869*. New York: D. Van Nostrand, 1869.

[30]Grenville M. Dodge. "Union Pacific Railroad, Report of the Chief Engineer (June 19, 1867). In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 3-21. Washington, D.C.: Philp & Solomons, 1868b.

[31]Grenville M. Dodge. *How We Built the Union Pacific Railway, and Other Railway Papers and Addresses*. Council Bluffs, Neb.: Monarch Printing Co., 1910.

[32]*Ibid*.

[33]Maury Klein. *Union Pacific, Volume 1: 1862-1893*. Minneapolis: University of Minnesota Press, 1987.

[34]David van Lennep. 1868a. "Geologic report for 1867 on the Lone Tree valley and country west of the Black hills, on the line of the Union Pacific Railroad Company." In *Executive Documents Printed By Order of the House of Representatives During the Second Session of the Fortieth Congress, 1867-'68*. Washington, D.C.: Government Printing Office. 16: 48-71.

[35]Grenville M. Dodge. *How We Built the Union Pacific Railway, and Other Railway Papers and Addresses*. Council Bluffs, Neb.: Monarch Printing Co., 1910.

[36]*Ibid*.

[37]*Ibid*.

[38]David van Lennep. "Report of David Van Lennep (January 1, 1867)." In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 97-123. Washington, D.C.: Philp & Solomons. 1868b.

[39]David van Lennep. 1868a. "Geologic report for 1867 on the Lone Tree valley and country west of the Black hills, on the line of the Union Pacific Railroad Company." In *Executive Documents Printed by Order of the House of Representatives During the Second Session of the Fortieth Congress, 1867-'68*. Washington, D.C.: Government Printing Office. 16: 48-71.

[40]L.W. Trumbull. *A Preliminary Report Upon the Coal Resources of Wyoming*. Laramie: University of Wyoming School of Mines Bulletin 7, 1905.

[41]S.H. Ball. "Titaniferous Iron Ore of Iron Mountain, Wyoming. In *Contributions to Economic Geology, 1906: Part I, Metals and Nonmetals except Fuel–Iron and Manganese Ores*." Washington, D.C.: U.S. Geological Survey Bulletin 315-D, 1907.

[42]Clarence E. King. "Chapter VII, the Green River Coal Basin." In *Report of the Geological Exploration of the Fortieth Parallel, Vol. 3, Mining Industry*. 451-73. Washington, D.C.: Government Printing Office, 1870.

[43]The Pan-American Geologist (editorial). "Beginnings of Economic Geology in America." *The Pan American Geologist* 37, no. 6 (1922): 395-98.

[44]Ferdinand V. Hayden. *Second Annual Report of the United States Geological Survey of the Territories*. Washington, D.C.: Government Printing Office, 1868.

[45]Grenville M. Dodge. *How We Built the Union Pacific Railway, and Other Railway Papers and Addresses*. Council Bluffs, Neb.: Monarch Printing Co., 1910.

[46]Maury Klein. *Union Pacific, Volume 1: 1862-1893*. Minneapolis: University of Minnesota Press, 1987.

[47]*Placer Herald* (March 5, 1910).

[48]Letter from David van Lennep to Frank Karel van Lennep, June 14, 1901. Sent from Auburn, California. Used with permission of Henrick van Lennep, Amsterdam.

[49]Thomas H. Bates. "Report of Thomas H. Bates (June 28, 1866)." In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 75-95. Washington, D.C.: Philp & Solomons. 1868.

[50]Grenville M. Dodge. "Union Pacific Railroad, Report of the Chief Engineer (June 19, 1867). In *Report of the Chief Engineer with Accompanying Reports of Division Engineers for 1866*. 3-21. Washington, D.C.: Philp & Solomons, 1868b.

[51]Humboldt County Deed Books, July 1868.

[52]*Humboldt Register*, October 24, 1868.

[53]Humboldt County Record Book (1863-1864).

[54]American Institute of Mining Engineers. *Transactions of the American Institute of Mining Engineers, v. 1*. Philadelphia: Sherman & Co., 1873, 22.

[55]Humboldt County Survey Record and Possessory Claims Book B (1863-1905).

[56]*Silver State* (November 9, 1872).

[57]*Silver State* (June 11, 1874).

[58]*Silver State* (December 18, 1873).

[59]*Silver State* (September 2, 1875).

[60]*Silver State* (July 17, 1875).

[61]Lee Berk. "Humboldt's Big Ditch." *Humboldt Historian* 2, no. 4 (1979), 2-8.

[62]H.C. Burchard. *Report of the Director of the Mint upon the Statistics of the Production of the Precious Metals of the United States*. Washington, D.C.: Government Printing Office, 1881, 73-74.

[63]Letter from David van Lennep to Frank Karel van Lennep, June 14, 1901. Sent from Auburn, California. Used with permission of Henrick van Lennep, Amsterdam.

[64]California voter requirements allowed naturalized citizens to register to vote if their citizenship application would be granted before the next election. Van Lennep registered to vote after the 1882 election and became a citizen in March 1883, before the 1884 election. California Secretary of State website, https://www.sos.ca.gov/elections/voting-resources/voting-california/registering-vote/.

[65]*Placer Herald* (March 5, 1910).

[66]*Placer Herald* (November 28, 1925).

[67]*Pacific Rural Press* (September 21, 1889).

[68]J.W. Jeffrey. *Third Biennial Report of the Commissioner of Horticulture of the State of California for 1907-1908*. Sacramento CA: State Printing Office, 1909.

[69]*Pacific Rural Press* (December 21, 1907).

[70]*Pacific Rural Press* (February 14, 1891).

[71]*Pacific Rural Press* (December 5, 1891).

[72]*Sacramento Daily Union* (May 21, 1891).

[73]*Placer Herald* (March 5, 1910).

[74]Henrick Van Lennep. "The Van Lennep Genealogy–Smyrna Branch." 2007. Leventine Heritage Foundation, accessed December 30, 2018, http://levantineheritage.com/pdf/The_Van_Lennep_Genealogy_Smyrna_Branch.pdf.

The Civilian Conservation Corps in its Final Years

Glimpses from Nevada and Beyond

Renée Corona Kolvet

The Civilian Conservation Corps (CCC) will long be remembered as one of President Franklin D. Roosevelt's (FDR) most successful "New Deal" program. Maintaining the CCC's popular image was of the utmost importance, and the program was actively promoted throughout its nine-year existence (1933-1942). While Americans in both town and country suffered enormous hardships during the Great Depression, the young and unskilled were the hardest hit. Nearly 15 million men under the age of 25 were unemployed at its peak in 1933.[1] The new president desperately wanted to save a generation of young men by creating jobs in a healthy outdoor environment. After tackling the banking crisis, he directed his efforts to creating jobs. The CCC was one of 15 bills signed into law in June of 1933, during FDR's first 100 days (or Hundred Day Congress).[2]

Today, most accounts of the CCC emphasize the benefits to America's jobless youth and the massive restoration and preservation achievements on public lands. Growing interest in the Great Depression has produced an expanding body of scholastic and popular literature on the CCC's history and contributions. This paper continues in this vein but focuses on the program's lesser known final years (post-1937) and the effects of global economic recovery (and impending world war) on the CCC program nationwide and on the rural state of Nevada. The information and conclusions cited herein are derived from personal accounts, available government documents, published sources, and oral histories.

Despite bipartisan Congressional support, the CCC generated its share of controversy. Some labeled it "fascist" and accused FDR of creating a quasi-military force to expand his powers. Conservative groups feared that the president was leading the country down a socialist path. Organized labor expressed the most opposition and was certain that the CCC

Renée Kolvet received her BA in Liberal Arts and MA in Anthropology/Great Basin Archaeology from the University of Nevada, Reno. She has held positions in environmental consulting at local, state, and federal governments. She worked as an archaeologist and tribal liaison for the Bureau of Land Management in Arizona until 2018. Her research interests include the Great Depression and the effects of Roosevelt's New Deal on the rural state of Nevada. Select publications include *The Civilian Conservation Corps in Nevada* (Univ. of Nevada Press, 2006) with Victoria Ford; and *Hoover Dam* (Arcadia Publishing, 2013). Ms. Kolvet is currently studying Neolithic milling technology on the Mediterranean island of Cyprus with Dr. Alan H. Simmons.

would take work away from a jobless workforce and hurt private sector wages.[3] The CCC eventually gained widespread public support once the benefits to the nation's youth and natural environment were known.

Washington's efforts to protect the CCC's glowing image became an ongoing challenge toward the latter half of the program. After four prosperous years, officials were perplexed by the sudden rise in desertions and lagging re-enrollment figures. Assistant CCC Director Charles Kenlan aptly observed, "The number of boys who take discharge at the expiration of their enrollment period is abnormal. All these boys didn't get jobs."[4] Nevada authorities had even more reason for concern. Nevada desertions and low re-enrollments consistently surpassed national and regional statistics. State and national CCC officials vigorously sought answers for the national and local dilemma. Nevada officials blamed the stark landscape, harsh climate, low population (barely 92,000 in 1930) and social isolation in the Nevada outback for the rising numbers.

National CCC Director Robert Fechner, Advisory Council, and State Selecting Officials were determined to get to the bottom of the problem and closely analyzed years of national and state reports in search of answers. Trope University professor John Salmond outlined several contributing factors on the national level.[5] Attracting and retaining dedicated enrollees was a primary factor, as was retaining high caliber Army officers. Camp administrators and Army reserve officers were more frequently being lured away by active duty or growing employment opportunities. CCC policies also played a role. Officials learned that an enrollee's distance from home directly affected the number of desertions—particularly when enrollees were stationed very near or very far from home. Homesickness was also less of an issue when enrollees were stationed approximately 150 miles from home. Fechner also blamed the significant increase of 17-year-old enrollees (despite some evidence to the contrary).[6] The *Act to Establish a Civilian Conservation Corps* approved June 28, 1937 (Public Law No. 163, 75th Congress, 1st session)[7] had modified eligibility and age requirements; the age range for juniors was lowered from 18-25 to 17-23 years of age. An applicant's family was no longer required to be on public relief rolls.

Emerging problems with the CCC workforce was increasingly costly for the government in terms of both time and money. By one account, enrollee desertion immediately after replacement (i.e., usually following the departure of the previous company) meant a loss of 45-65 man-days.[8] The CCC felt compelled to implement new hiring practices. Beginning April 1, 1939, men 18 years of age and older were given enrollment preference; thereafter, 17-year-old applicants were selected only if local enrollment quotas were not met. Unfortunately, this measure did little to resolve the desertion problem. As the pool of older applicants dwindled, State Selecting Agencies had little recourse but to enroll the very young to meet their quotas. Training and caring for the needs of the very young was a growing challenge for the CCC.

By July, 1939 seventeen-year-old enrollees comprised 33.6 percent of the junior enrollment; between February and April of 1941, the number leapt to 51.6 percent. During the same period, the 18-20 age group dropped from 54.3 percent to 41.8 percent of the CCC workforce.[9] The reason was clear—as the job market improved, experienced, older enrollees found employment in the private sector or military service. In general, younger men lacked work experience and were less educated. It was apparent that younger enrollees joined the CCC to gain work experience and ultimately secure employment and were less committed to the program.

Nevada's small labor force added to enrollment and desertion problems. With limited local enrollees, the majority of CCC companies were from highly populated east coast cities; Easterners were later joined or replaced by men from the South and Midwest. The practice of sending the nation's youth out West contributed to enrollee discontent and

loneliness; culture shock pervaded most rural Nevada camps. Army officers were not exempt from the malaise. In addition to provisioning the camps, they spent considerable time maintaining full company strength, necessary to complete agency work plans on schedule. One frustrated camp commander accused Eastern CCC officials of retaining the most qualified men and shipping the less skilled out West.[10] While some enrollees welcomed the adventure, others regarded Nevada as a foreign and unwelcoming place. CCC officials underestimated the time required for training and to maintain good morale, particularly at remote Nevada camps. City boys had the most trouble acclimating to the unfamiliar environment and longed to go home. Both the technical staff (employed by federal agencies) and Army officials tried their best to keep the men occupied. Compared to town locations, remote camps offered more training, and required larger libraries, hometown newspapers, games, and liberty trips (if possible). Administrators instituted a buddy system to nurture friendships and to fend off loneliness, with limited success. The CCC did not overlook the men's spiritual needs and traveling chaplains made the rounds between rural camps.[11]

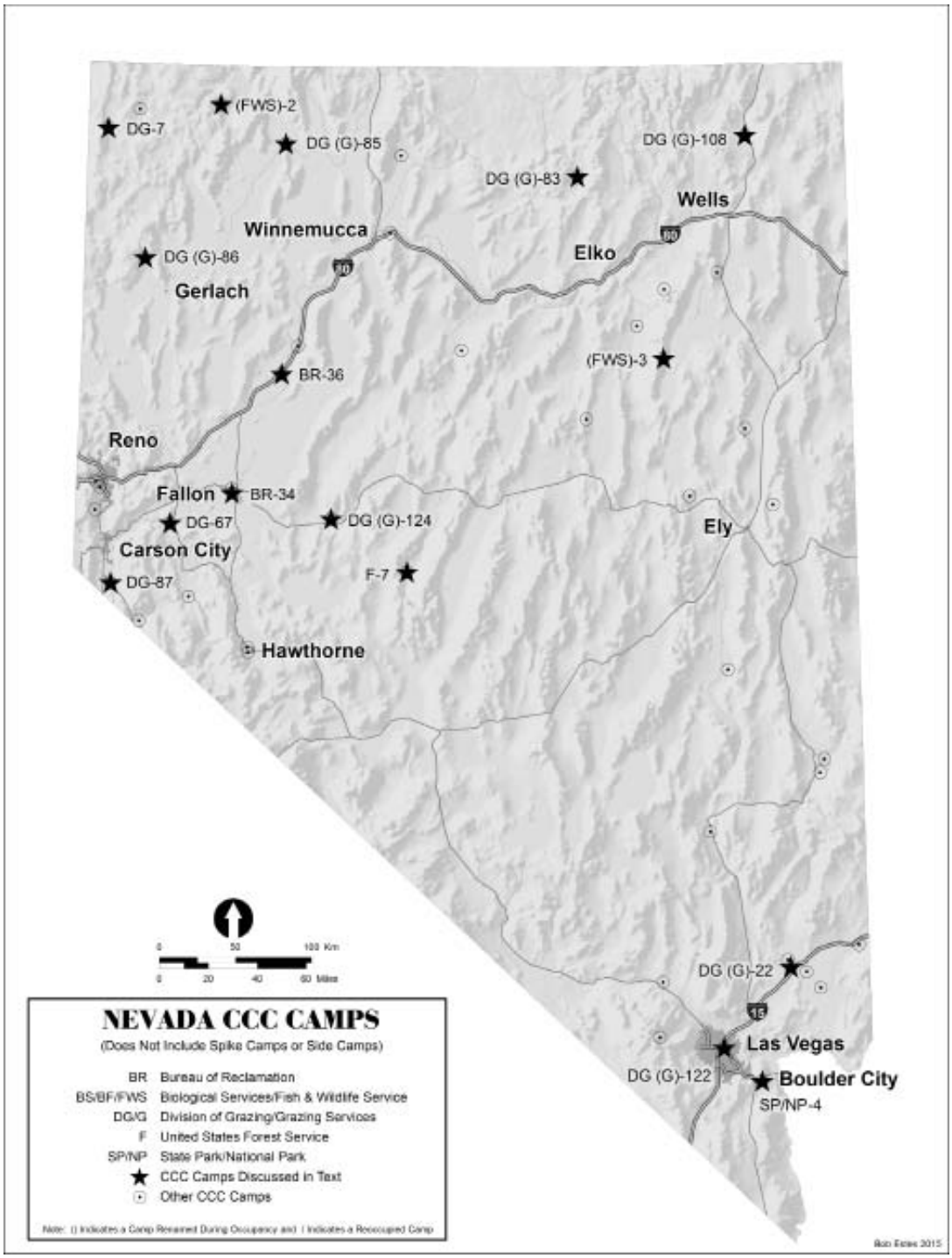
Growing discontent can be gleaned from CCC Junior Discharge Records and Camp Inspection Reports. Of the Army's Ninth Corps Area's eight Western states, Nevada's desertion rates were consistently the highest and usually exceeded the national average.[12] To illustrate, a Junior Discharge Report for 16 months between December 1, 1937, and March 31, 1939, revealed that 23.3 percent of enrollees received administrative or dishonorable discharges at the national level. Although the Ninth Corps Area came in lower at 20.8 percent, Nevada's unfavorable discharges topped national and Ninth Corps averages at a whopping 38.1 percent.[13] Concerned CCC officials instituted new program changes and reporting guidelines. Despite modest improvements in the first half of 1940, Nevada maintained its lead in discharges at 24.7 percent in comparison to 14.1 in the Ninth Corps Area and 18.8 percent at the national level. By the latter half of 1940, national statistics rose to 23.9 percent, in sync with Nevada. Nevada statistics remained steady at 23.8 percent and Ninth Corps numbers rose to 18.8 percent during the same period.[14]

Maintaining continuity and a trained workforce continued to plague the CCC program's final years. In addition to rising enrollee discharges, CCC officials had to contend with lagging re-enrollments. In Nevada, CCC officials and federal agencies were understandably disappointed when a growing number of newly trained enrollees chose to leave after a single enrollment period.[15]

Post-1937 CCC in Nevada

The CCC was well-represented in Nevada. Fifty-nine main camps and an indeterminate number of spike camps operated at various times.[16] Passage of the Taylor Grazing Act in 1934 assured that Nevada (and other Western states) received an above average number of camps per capita.[17] With its massive federal land holdings and overgrazed rangelands, the National Forest and Grazing Service needed the CCC's help to implement the provisions of the Act. The CCC also helped further the missions of federal parks, irrigation works, soil conservation districts, wildlife refuges, and military facilities.[18] The men constructed hundreds of recreational facilities and tourist attractions for local benefit and to stimulate the local economy.

Pronounced contrasts between camps in urban/semi-urban and remote locations can be gleaned from Federal CCC reports, Camp Inspection Reports, and oral interviews of former



Map of Nevada showing the location of CCC Camps discussed. (*Bob Estes*)

enrollees. The following discussion compares and contrasts several town and remote CCC camps shown on the accompanying map. CCC inspectors and investigators periodically visited main camps, spike camps, and work sites. Their reports summarized the quality of food, condition of buildings, and availability of uniforms, supplies, and recreational amenities. The inspectors also documented any health and safety issues and the effectiveness of camp leadership (often Army reserve lieutenants or captains). Inspectors paid extra attention to camp morale, disciplinary issues, and the circumstances surrounding group discharges, during the latter half of the program. Special reporting guidelines were developed and followed by Corps Area administrators and State Directors whenever multiple desertions occurred.

CCC inspectors M.J. Bowen and A.J. Stockmen were assigned to Nevada camps. Bowen shared his thoughts on the high rate of discharges in Nevada and the rural West at a National Conference of CCC Special Investigators in Washington D.C. in 1937:

> … I feel that homesickness and isolation have a lot to do with [the] large number of discharges. They will do anything to get home. When boys are sent to distant Corps Areas, they will ask about the train schedule back home just as soon as they arrive. A great many of the boys are barely seventeen. Many have never been away from home before.[19]

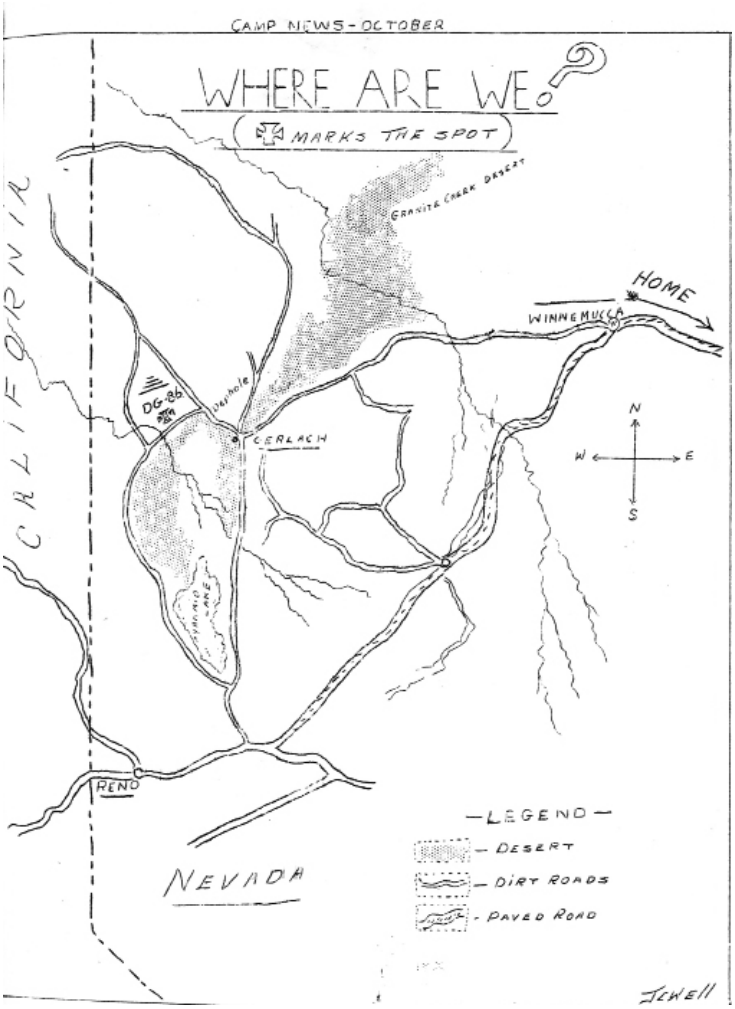
Indeed, it was CCC policy to station new enrollees close to home whenever possible. However, the overwhelming needs of Nevada and other Western states often led to departures from standard protocols. Many enrollees were blindsided by the long train ride to undisclosed Western destinations. Enrollee Herman Haynes remembered his train ride from St. Louis, Missouri, to Camp Ruby Lake (FWS-3) in rural, northeastern Nevada. According to Haynes "…we didn't know where were going until we got to Wells. To me, it was a primitive place."[20]

Haynes learned to drive trucks while stationed at Camp Ruby Lake. Pleased with his new skill, he nonetheless was relieved when his company was transferred to a Bureau of Reclamation project in Heber City, Utah. The town had the amenities that he missed in Ruby Valley, including dances, a theater, and shopping center. Heber City "was almost like being home."[21] Calvin Cushing had a similar experience after leaving Sparta, Illinois, for Camp Hubbard Ranch (G-108), northeast of Wells. "I didn't know a thing about Nevada or Wells. We knew we were in an isolated place but we took it one day at a time." Cushing adjusted to his camp and was eventually promoted to camp leader.[22]

Work projects in Nevada tended to be physically strenuous and conditions were hard. Enrollees toiled in extreme heat or cold at a multitude of laborious tasks. Many were intimidated by the venomous snakes, stinging insects, and poisonous spiders they encountered. Enrollees learned to pry up boulders to line canals and spillways (called riprap), build juniper post and barbed wire fences, and manually excavate trenches for water lines to refuge buildings. CCC boys were often called upon to work long, consecutive days fighting rampant (and often dangerous) range fires fueled by the ongoing drought.

Prior to entering the CCC, few enrollees, particularly urbanites, had ever driven a car or lifted a shovel. Some complained about the food, although most men gained weight while in camp. Although camp administrators often passed off the complaints as excuses for wanting to go home, Camp Inspection Reports attest to occasional food shortages, and problems with stale bread, sour milk, and spoiled fruit at less accessible camps.

Undoubtedly, one of the Army's main challenges in Nevada was servicing those camps established miles from main roads or highways. Safety and access to medical care was an ongoing concern. In addition to unsafe conditions, enrollees were distraught by the lack of



Page from an October 1938 Camp Gerlach Newsletter prepared by Company 5476 from the South (4th Corps Area). Enrollees prepared newsletters with the help of their education advisor. The title of the drawing, "Where Are We?" speaks to the bewilderment upon arrival in Nevada. (*Nevada Historical Society*)

Aerial Photograph of Camp Swinford Springs (DG-7) in northwestern Nevada, June 24, 1937. This camp, like many others in Nevada, was miles from the closest town of Cedarville, California. The Division of Grazing camp worked on range improvements mandated by the Taylor Grazing Act of 1934. (*California Conservation Corps Museum*)

social amenities in the outback. CCC administrators and investigators were realistic about issues inherent to rural Nevada. In a 1940 report, Investigator Bowen conceded, "Isolation … will be a factor that cannot be overcome, except by promoting camp activities."[23] CCC administrators knew that good morale was contingent on regular social and recreational activities, although liberty trips to the closest town were frequently out of the question.

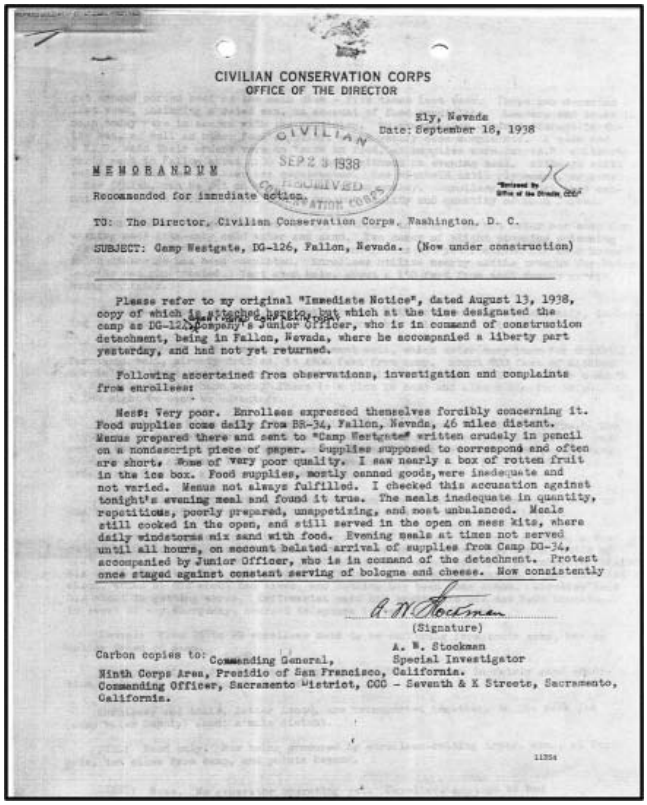
The CCC also witnessed a high turnover in Army personnel (camp administrators) and found remote camps to be training grounds for young, inexperienced officers. Being assigned to a spike (or side) camp was a tragic blow to many urbanites. These small camps were occupied by 10-50 men living in tents or portable trailers for one to six months. Spike camps were a necessity in rural Nevada since so much of the conservation work was near watersheds or high elevation mountain slopes—beyond a reasonable day's drive from the main camp.

Available CCC records describe specific incidents that occurred in camp or on work sites and the outcomes. Most situations were resolved; although in extreme cases, the culprits were unfavorably discharged and sent home. One situation occurred in the summer of 1940, when 18 enrollees from a Camp Lovelock spike camp were drenched in a torrential rainstorm while working in the field. To avoid returning to work, the men feigned illness, preferring to recuperate in the infirmary. Following new CCC protocols, the incident triggered an investigation. Investigator Bowen concluded that the men disliked the camp and "…just wanted to return to New York."[24] While a few remorseful individuals reconsidered, the majority were dishonorably discharged.

Another desertion incident occurred at Camp Tuscarora (DG-83) when 26 men "went over the hill" upon arrival. Veteran Commander Casimer Oliszewski blamed outside factors: "It is not believed… that any desertions occurred because of unsatisfactory feeding. Most of the criticism was of Nevada, sagebrush, tents, and 52 miles from town, which is natural for city boys."[25] As standard practice, camp administrators purchased additional books, games, and new sports equipment. The CCC went as far as building swimming pools in rural locations such as Camp Westgate, 50 miles east of Fallon. Group sports and community competitions proved to be a saving grace and promoted much-needed camaraderie. In a 2001 interview, Camp Hubbard Ranch enrollee Calvin Cushing raved about playing baseball and the excitement of challenging men from other CCC camps, and on rare occasions, town teams.[26]

Some of the most isolated encampments were on Fish and Wildlife Service refuges. Camps Sheldon and Ruby Lake were, by necessity, established in rugged, extremely isolated locations near wildlife habitats or along bird migration paths. The Ninth Corps Area headquarters reluctantly approved CCC camps in these outlying locations, knowing all too well that provisioning the camps would be an ongoing challenge and inadequate medical care would put men at risk.

Ninth Corps Headquarters had ample reason for concern. Camp Sheldon (FWS-2) was 138 miles from Winnemucca over a rutted and unpaved road; Camp Ruby Lake (FWS-3) was 76 miles from the railhead at Wells. The camp was practically inaccessible until the CCC built a new road between the refuge and the road to Wells. Inspector Bowen noted that a partial company of men from West Virginia stationed at Camp Ruby Lake in 1941 fended remarkably well despite a lack of recreational outings. Indeed, roundtrips to Elko were prohibitive as the drive alone would have taken all day. Inspector Bowen was, however, more concerned with "retarded" work progress due to low company strength.[27] The shortage of men may have resulted in the company's transfer in August of 1941, at a time when the CCC program was reducing its overall work force. Hints of frustration can be detected from a U.S. Fish and Wildlife Service quarterly report:



CIVILIAN CONSERVATION CORPS
OFFICE OF THE DIRECTOR

Ely, Nevada
Date: September 18, 1938

CIVILIAN CONSERVATION CORPS RECEIVED SEP 23 1938

MEMORANDUM

Recommended for immediate action.

TO: The Director, Civilian Conservation Corps, Washington, D. C.

SUBJECT: Camp Westgate, DG-126, Fallon, Nevada. (Now under construction)

Please refer to my original "Immediate Notice", dated August 13, 1938, copy of which is attached hereto, but which at the time designated the camp as DG-124. Company's Junior Officer, who is in command of construction detachment, being in Fallon, Nevada, where he accompanied a liberty part yesterday, and had not yet returned.

Following ascertained from observations, investigation and complaints from enrollees:

Mess: Very poor. Enrollees expressed themselves forcibly concerning it. Food supplies come daily from BR-34, Fallon, Nevada, 46 miles distant. Menus prepared there and sent to "Camp Westgate" written crudely in pencil on a nondescript piece of paper. Supplies supposed to correspond and often are short. Some of very poor quality. I saw nearly a box of rotten fruit in the ice box. Food supplies, mostly canned goods, were inadequate and not varied. Menus not always fulfilled. I checked this accusation against tonight's evening meal and found it true. The meals inadequate in quantity, repetitious, poorly prepared, unappetizing, and most unbalanced. Meals still cooked in the open, and still served in the open on mess kits, where daily windstorms mix sand with food. Evening meals at times not served until all hours, on account belated arrival of supplies from Camp DG-34, accompanied by Junior Officer, who is in command of the detachment. Protest once staged against constant serving of bologna and cheese. Now consistently

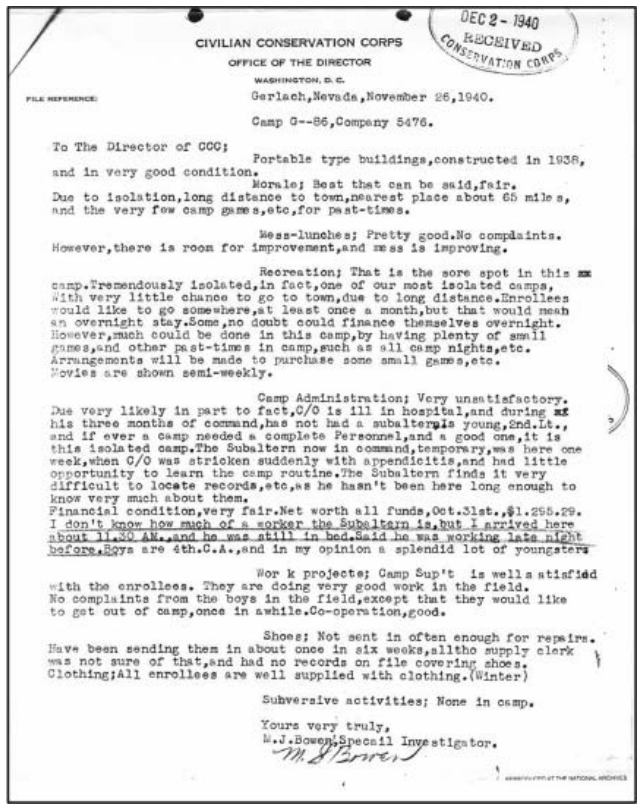
A. W. Stockman
(Signature)

A. W. Stockman
Special Investigator

Carbon copies to: Commanding General, Ninth Corps Area, Presidio of San Francisco, California.
Commanding Officer, Sacramento District, CCC - Seventh & K Streets, Sacramento, California.

11354

A Camp Westgate (DG-124) Inspection Report dated September 18, 1938 disclosed a variety of problems including spoiled food, insufficient supplies, and slack protocols. The investigator expressed concerns by the absence of the Junior Officer who was late in returning from a liberty trip to Fallon, 50 miles away. (*NARA*)



CIVILIAN CONSERVATION CORPS
OFFICE OF THE DIRECTOR
WASHINGTON, D. C.

DEC 2 - 1940 RECEIVED CONSERVATION CORPS

FILE REFERENCE:

Gerlach,Nevada,November 26,1940.

Camp G--86,Company 5476.

To The Director of CCC;

Portable type buildings,constructed in 1938, and in very good condition.

Morale; Best that can be said,fair. Due to isolation,long distance to town,nearest place about 65 miles, and the very few camp games,etc,for past-times.

Mess-lunches; Pretty good.No complaints. However,there is room for improvement,and mess is improving.

Recreation; That is the sore spot in this camp.Tremendously isolated,in fact,one of our most isolated camps, With very little chance to go to town,due to long distance.Enrollees would like to go somewhere,at least once a month,but that would mean an overnight stay.Some,no doubt could finance themselves overnight. However,much could be done in this camp,by having plenty of small games,and other past-times in camp,such as all camp nights,etc. Arrangements will be made to purchase some small games,etc. Movies are shown semi-weekly.

Camp Administration; Very unsatisfactory. Due very likely in part to fact,C/O is ill in hospital,and during his three months of command,has not had a subaltern,a young,2nd.Lt., and if ever a camp needed a complete Personnel,and a good one,it is this isolated camp.The Subaltern now in command,temporary,was here one week,when C/O was stricken suddenly with appendicitis,and had little opportunity to learn the camp routine.The Subaltern finds it very difficult to locate records,etc,as he hasn't been here long enough to know very much about them.
Financial condition,very fair.Net worth all funds,Oct.31st.,$1.255.29.
I don't know how much of a worker the Subaltern is,but I arrived here about 11.30 AM.,and he was still in bed.Said he was working late night before.Boys are 4th.C.A.,and in my opinion a splendid lot of youngsters

Work projects; Camp Sup't is well satisfied with the enrollees. They are doing very good work in the field. No complaints from the boys in the field,except that they would like to get out of camp,once in awhile.Co-operation,good.

Shoes; Not sent in often enough for repairs. Have been sending them in about once in six weeks,allthe supply clerk was not sure of that,and had no records on file covering shoes. Clothing;All enrollees are well supplied with clothing.(Winter)

Subversive activities; None in camp.

Yours very truly,
M.J.Bowen,Special Investigator.
M. J. Bowen

A Camp Gerlach (G-86) Camp Inspection Report dated January 26, 1940 mentions problems with camp administrators (Army) and its isolated location. (*NARA*)

> It has been the experience of this Camp that there is considerable more work involved in supervising… a low company strength than supervising a camp with a strength of 200 men. The boys coming into camp are less experienced than a year ago and require more preliminary training for the simpler types of work and have to be more closely supervised.[28]

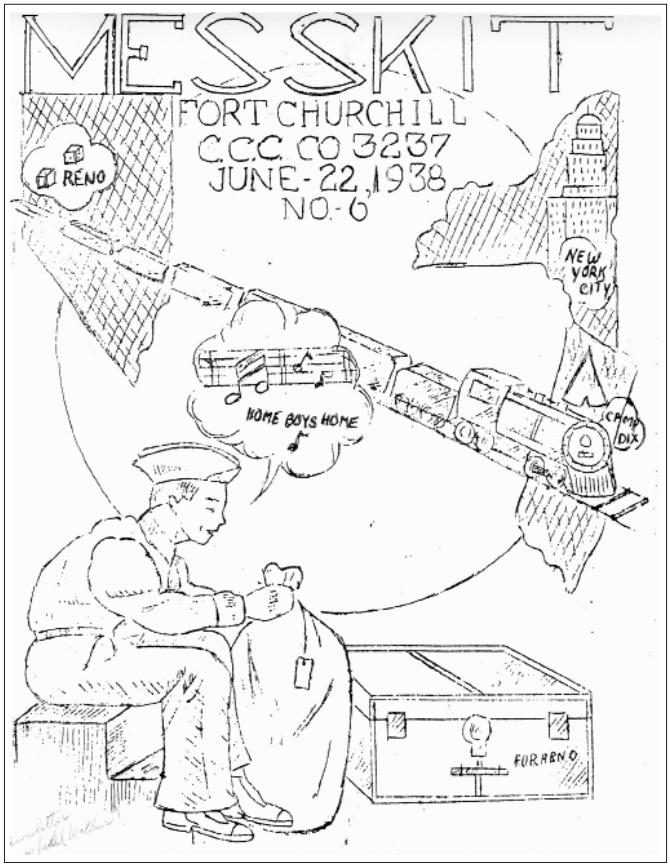
Maintaining good morale and on-the-job productivity was less of an issue when camps were established in or near towns. Camps Newlands and Carson River in Fallon were considered exemplary and operated with relatively few problems. The boys could easily walk downtown to see a movie, buy ice cream, or to attend church. Similarly, a 1941 Camp Las Vegas (G-122) Inspection Report documented "good mess" and "good morale." Inspector Bowen added: "Recreation; not a problem in this camp…" a few miles from the center of Las Vegas. In the summer of 1938, Camp Lovelock (BR-36) enrollees were described as "fond of their present camp site." The camp commander's maturity and experience were considered a plus. But companies were intended to be mobile and the men were moved to where work was planned and approved. In this case, Camp Lovelock (Company 1216) was transferred to Camp Quinn River (DG-85) (69 miles from the town of Winnemucca) for the next two years.[29]

Another noteworthy town camp was Camp Boulder City (NP-4 and NP-7) in southern Nevada. The enclave was reputedly one of the better-run camps, once concerns with the camp commander and camp doctor (too strict and both heavy drinkers) were resolved. Recreation was never a problem although the issues that arose were usually attributed to the temptations of nearby Las Vegas.[30]

Incidents in town camps were usually linked to the company's origin and extreme difficulties adjusting to a new environment. A favorable 1940 report attests to the general well-being of Camp Minden (G-87), five miles south of Minden/Gardnerville: "mess… no complaints," "Morale, Very Satisfactory," "Recreation, not much of a problem here." However, retaining enrollees was an issue during a subsequent enrollment period: "… few boys, remain over one six-month period. Turnover… [during] a period of twelve months, 293." Inspector Bowen blamed the origin of the company (i.e., city boys from New York) rather than the company commander (also from New York), for the exorbitant numbers.[31]

A major downside of remote camps was social isolation. While men in town camps participated in ball games, attended plays, met girls, and went to dances, the less fortunate men in remote camps had few, if any, opportunities to experience the local culture. New Orleans native, Richard Young, had no opportunities to socialize with Gerlach residents or other Nevadans (aside from camp foremen) during his six months at Camp Gerlach. In the absence of social amenities and recreational trips, Young spent his free time exploring the outdoors. Fascinated by the surrounding mountains, he and his fellow enrollees enjoyed hiking to the rugged (and sometimes snow-blanketed) Granite Range. During a return to his former camp in 2012, Young vividly recalled how he underestimated the time it would take to hike halfway to the top.[32]

There is well-documented evidence of enrollees being shunned by locals and treated like outsiders. Here again, the company's origin, the town's location, and cultural differences all played a role. The dialect of some Easterners may also have created a divide. One well-meaning foreman's wife had trouble communicating with the boys from New York who "talked a lot of gibberish" when they arrived.[33] According to Education Advisor Elmer Randall, residents of the small, predominantly Mormon town of Panaca feared the Southern boys and hid their daughters from the "uneducated ruffians."[34] New Jersey native Joseph Ruchty's (Camp Carson River) recollections of Fallon were also less than positive. Ruchty felt that members of his



A Camp Fort Churchill (DG-67) newsletter "Messkit" depicts a lonely New Yorker longing for the day when he could return home (via Camp Dix). The Division of Grazing camp closed for good at the end of August, 1938. (*Courtesy of the late Marion Wilbur*)

CCC Administrators struggled to relieve homesickness that often lead to desertions or departures after a single, six-month stint. Administrators planned more activities and encouraged a buddy system. These two young men from Camp Swinford Springs, wearing street clothes, explored the desert on their days off. Due to distance from town, liberty trips were few and far between. (*California Conservation Corps Museum*).

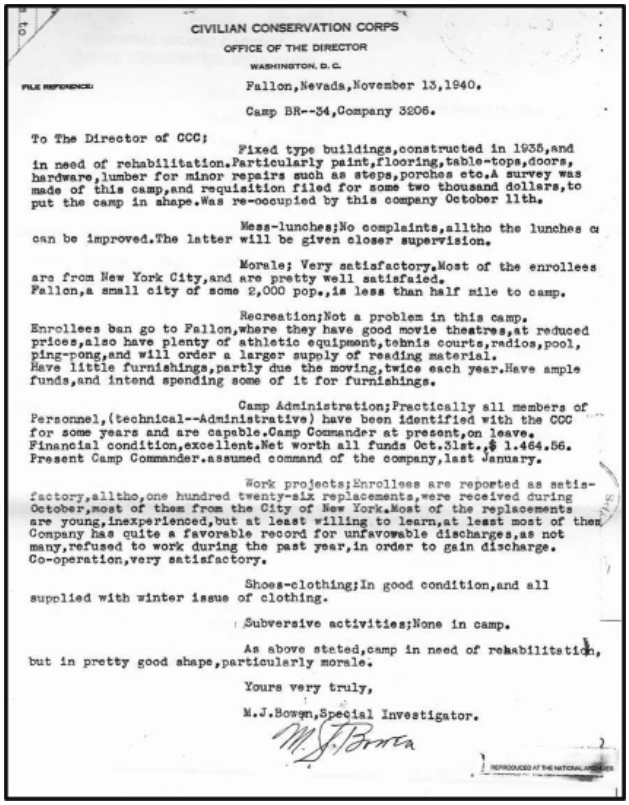
company were treated like hoodlums and were only tolerated because of the money they spent in town. Although friction between enrollees and locals was infrequent, incidents were known to occur. Former Camp Superintendent Lewis Jennay (Camps Sunnyside, Cherry Creek, and Golconda) alluded to several altercations between "tough" groups from New York and New Jersey and Ely's law enforcement. In one instance, enrollees purportedly "cleaned up" on the Sheriff and his deputies.[35] CCC administrators were aware of small-town impressions of outsiders, particularly urbanites, and spent considerable time promoting public relations with local communities. Whenever possible, Army and CCC staffs shared the good work being done in the community with local service clubs and women's groups. The CCC also sponsored yearly open houses (with free barbecues and entertainment) to "melt the ice" between locals and enrollees.

Men from Midwestern backgrounds appear to have adjusted more easily to the rural Nevada scene than most enrollees from cities.[36] Missouri farm boy Ralph Hash (Camp Newlands, BR-34) felt welcome in Fallon and made many new friends. Hash married a local girl and spent the remainder of his life in Reno. Fellow enrollee Wendell Wheat also wed a local woman, anthropologist Margaret (Hatton) Wheat, and assisted with her studies of the Stillwater Paiute people.[37] Upstate New Yorker Vernard "Bud" Wilbur of Camp Hawthorne, (G-119) also broke through barriers and made lasting friendships. Wilbur participated in town plays and sports events and finished high school during his 16-months in Hawthorne. Years later, Wilbur described Western people "…as down to earth as you can get."[38]

Nevada's extreme climate also caused its share of anguish. Enrollees living in tents and drafty barracks heated by coal-burning stoves frequently suffered from excessive heat or cold. Men from Ohio and Kentucky stationed at Camp Reese River (F-7) would never forget the winters of 1936 and 1937 when stranded from the outside world during record low temperatures and waist-deep snowfall. After exhausting the coal supply, the men burned sagebrush to avoid freezing when temperatures dipped to 43 degrees below zero (Fahrenheit).[39] An additional three weeks would pass before the road to the camp was cleared. After several unsuccessful attempts, a convoy from Fort Douglas, Utah, unloaded food and medical provisions in Austin, Nevada, 45 miles away, before turning back. A November 1941 Camp Inspection Report acknowledged Camp Reese River's problematic location: "Received 105 replacements from Georgia two days ago and they do not like it [here]. Their reasons—too cold and too isolated."[40]

The winter of 1940/1941 was equally challenging for a Chicago company stationed in northeast Nevada. Camp Hubbard Ranch (G-108) was described as "the coldest in Nevada" with sub-zero Fahrenheit temperatures for two consecutive winters. Inspector Bowen described the location as "a hard place to work with a biting cold wind that lasts most of the winter."[41] Few men stayed longer than a single six-month period, despite an excellent commander and abundant recreational facilities. Inspector M.J. Bowen reported the turnover for one year as 342 and would "take in all but rated leaders."

CCC camps in southern Nevada also suffered from the extreme climate and excessive temperatures often exceeding 110 degrees (Fahrenheit) during the summer months. One heat-related incident occurred at Camp Moapa (DG-22), 52 miles from Las Vegas. West Virginian Wallace Baisen pleaded for help in a letter delivered to President Roosevelt: "We can't stand it out here in this desert: there are three of us and they won't discharge us or feed us and are trying to make us leave camp… walking and hoboing…. They are trying to starve us [into] staying, so do something in a hurry…"[42] Although the outcome of Baisen's plea is unknown, the tone alludes to the pressures placed on Camp Commanders to reduce desertions. At nearby Camp Boulder City (SP/NP-4), enrollees complained to higher authorities when required to stand in formation



CIVILIAN CONSERVATION CORPS
OFFICE OF THE DIRECTOR
WASHINGTON, D. C.

FILE REFERENCE:

Fallon, Nevada, November 13, 1940.

Camp BR--34, Company 3206.

To The Director of CCC;

Fixed type buildings, constructed in 1935, and in need of rehabilitation. Particularly paint, flooring, table-tops, doors, hardware, lumber for minor repairs such as steps, porches etc. A survey was made of this camp, and requisition filed for some two thousand dollars, to put the camp in shape. Was re-occupied by this company October 11th.

Mess-lunches; No complaints, allthe the lunches c can be improved. The latter will be given closer supervision.

Morale; Very satisfactory. Most of the enrollees are from New York City, and are pretty well satisfaied. Fallon, a small city of some 2,000 pop., is less than half mile to camp.

Recreation; Not a problem in this camp. Enrollees can go to Fallon, where they have good movie theatres, at reduced prices, also have plenty of athletic equipment, tehnis courts, radios, pool, ping-pong, and will order a larger supply of reading material. Have little furnishings, partly due the moving, twice each year. Have ample funds, and intend spending some of it for furnishings.

Camp Administration; Practically all members of Personnel, (technical--Administrative) have been identified with the CCC for some years and are capable. Camp Commander at present, on leave. Financial condition, excellent. Net worth all funds Oct. 31st., $ 1.464.56. Present Camp Commander. assumed command of the company, last January.

Work projects; Enrollees are reported as satisfactory, allthe, one hundred twenty-six replacements, were received during October, most of them from the City of New York. Most of the replacements are young, inexperienced, but at least willing to learn, at least most of them Company has quite a favorable record for unfavowable discharges, as not many, refused to work during the past year, in order to gain discharge. Co-operation, very satisfactory.

Shoes-clothing; In good condition, and all supplied with winter issue of clothing.

Subversive activities; None in camp.

As above steted, camp in need of rehabilitation, but in pretty good shape, particularly morale.

Yours very truly,

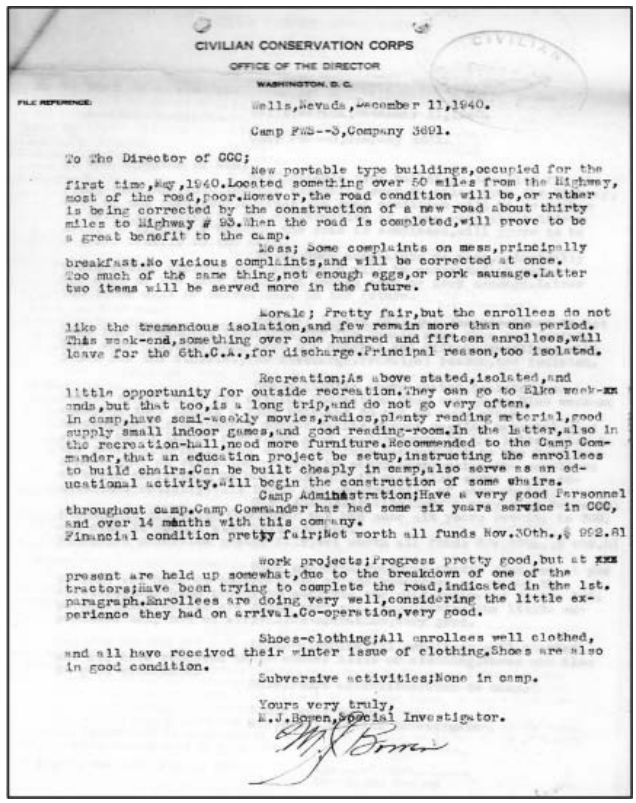
M. J. Bowen, Special Investigator.

M. J. Bowen

REPRODUCED AT THE NATIONAL ARCHIVES

A Camp Newlands (BR-34) Inspection report dated November 13, 1940, gives the impression that all is well at this Fallon camp. The boys had access to movie theaters, bowling alleys, and regular church services. (*NARA*)

A Camp Ruby Lake (FWS-3) Inspection Report dated December 11, 1940 highlights a recurrent problem at remote camps – that is, getting enrollees to sign on for a second enrollment period. After spending six months training inexperienced men, the technical service was understandably disappointed when the men from Michigan, Wisconsin, and Illinois chose not to stay. (NARA)



CIVILIAN CONSERVATION CORPS
OFFICE OF THE DIRECTOR
WASHINGTON, D. C.

FILE REFERENCE:

Wells, Nevada, December 11, 1940.

Camp FWS--3, Company 3691.

To The Director of CCC;

New portable type buildings, occupied for the first time, May, 1940. Located something over 50 miles from the Highway, most of the road, poor. However, the road condition will be, or rather is being corrected by the construction of a new road about thirty miles to Highway # 93. When the road is completed, will prove to be a great benefit to the camp.

Mess; Some complaints on mess, principally breakfast. No vicious complaints, and will be corrected at once. Too much of the same thing, not enough eggs, or pork sausage. Latter two items will be served more in the future.

Morale; Pretty fair, but the enrollees do not like the tremendous isolation, and few remain more than one period. This week-end, something over one hundred and fifteen enrollees, will leave for the 6th. C. A., for discharge. Principal reason, too isolated.

Recreation; As above stated, isolated, and little opportunity for outside recreation. They can go to Elko week-ends, but that too, is a long trip, and do not go very often. In camp, have semi-weekly movies, radios, plenty reading material, good supply small indoor games, and good reading-room. In the latter, also in the recreation-hall, need more furniture. Recommended to the Camp Commander, that an education project be setup, instructing the enrollees to build chairs. Can be built cheaply in camp, also serve as an educational activity. Will begin the construction of some whairs.

Camp Administration; Have a very good Personnel throughout camp. Camp Commander has had some six years service in CCC, and over 14 months with this company.
Financial condition pretty fair; Net worth all funds Nov. 30th., $ 992.81

Work projects; Progress pretty good, but at present are held up somewhat, due to the breakdown of one of the tractors; Have been trying to complete the road, indicated in the 1st. paragraph. Enrollees are doing very well, considering the little experience they had on arrival. Co-operation, very good.

Shoes-clothing; All enrollees well clothed, and all have received their winter issue of clothing. Shoes are also in good condition.

Subversive activities; None in camp.

Yours very truly,
M. J. Bowen, Special Investigator.

M. J. Bowen

A Camp Tuscarora (DG-83) officer supervised the breaking down of a tent camp after the first snowfall of September 1939. This camp operated seasonally for three years. The company was transferred to a warmer camp in southern Nevada for the winter. (*Courtesy of Joseph Chmielewski*)

in full uniform every evening throughout the hot summer. CCC officials intervened and sent the camp inspector to investigate the complaint. Retreat was immediately restricted to once a week until the weather cooled down.[43]

Still other factors contributed to Nevada's high desertion rates, including enrollees using the CCC program to further their own interests. An April 5, 1940, letter from Major K.B. Bush, (Assistant War Department Representative, CCC) to the Director of the CCC outlined the reasons behind the discharge of 15 Camp Hubbard Ranch (G-108) enrollees. When questioned, the group's ringleader admitted that the deserters "and at least 60 others" had enrolled for the sole purpose of securing transportation, at government expense, to the Western states. Although four of the 19 reconsidered, the remainder left with dishonorable discharges.[44]

In the end, global economic recovery and onset of World War II lead to the demise of the popular CCC program in 1942. Essentially, the availability of jobs in the private sector, defense industries and military service overshadowed its continued need. By June 1941, one in every nine men who registered for military service had been in the CCC.[45] According to John Salmond:

> In an age of war, of rapid mobilization of men, of burgeoning industrial development, its [CCC]clientele remained the unemployed. The problems of 1942, however, had very little resemblance indeed to those of 1933. The CCC had become outmoded.[46]

As for Nevada, its unique physical and demographic characteristics added to nationwide problems with desertions and low re-enrollments in CCC's final years. Created and orchestrated in the East, CCC administrators and the War Department underestimated

the high costs of sending youth out West. In contrast to the early days, the CCC program became a magnet for younger, inexperienced men. Cognizant of future opportunities (many enrollees were too young for selective service), the men sought on-the-job training and learned skills of value to the national defense. The *Las Vegas Evening Review Journal* (July 15, 1942) reported, "…long before the war was declared, the CCC program was being shaped for usefulness in defense. At the time it was abolished, 80 percent of the CCC work was devoted exclusively to the war effort."[47] An array of opportunities awaited the hearty individuals who left the CCC with honorable discharges. Many went on to serve their country—but this time on the World Front.

Former enrollee and Pearl Harbor veteran Richard Young visited what is left of Camp Gerlach in September of 2012. Young was eager to see the Granite Mountains that he and his fellow enrollees had climbed 72 years earlier. A range fire had recently burned the natural sagebrush and damaged remnants of the camp but the mountains had not changed. (*Courtesy of the author*)

Notes

[1]Freidel, Frank. *Franklin D. Roosevelt: A Rendezvous with Destiny* (Boston: Little, Brown, 1990).

[2]David M. Kennedy, *Freedom from Fear: The American People in Depression and War 1929-1945* (New York: Oxford University Press, 1999), 134, 139-140.

[3]Olen Cole, Jr. *The African-American Experience in the Civilian Conservation Corps* (Gainesville: University Press of Florida, 1999); Richard Melzer, *Coming of Age in the Great Depression, The Civilian Conservation Corps Experience in New Mexico, 1933-1942* (Los Cruces: Yucca Tree Press, 2000),23-24.

[4]Minutes from the Advisory Council to the Director, April 20, 1937, NARA, FSA,CCC. RG-35, FSA, Entry 10, Box 1-2.

[5]Salmond, John A. *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study* (Durham: Duke University Press, 1967).

[6]Letter from Robert Fechner to W. Frank Persons, February 11, 1939, NARA, FSA, CCC, RG-35, Minutes of the Advisory Council to the Director.

[7]The Civilian Conservation Corps was administered under the name of Emergency Conservation Work or ECW until 1937.

[8]Conference of Special Investigators (Washington D.C.), April 6, 1937, NARA, FSA, CCC RG-35, Entry 114, Division of Investigations, Administrative Files, 1933-1942, Boxes 1-9.

[9]Annual Report of the Director of the Civilian Conservation Corps, Fiscal year ended June 30, 1941, NARA, FSA, CCC, Record Group 35, Entry 3, Annual, Special and Final Reports, 1933-1943, Boxes 1-2.

[10]A.J. Stockmen to Director of the CCC, Supplemental Report, September 24, 1938. Camp DG-83, Company 4601, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Tuscarora; The claim that less qualified men were sent west is only conjecture but coincides with other accounts.

[11]Renée Corona Kolvet, "Anatomy of a Civilian Conservation Corps Camp: Scenes from Northwestern Nevada" in *We Can Take It: The Civilian Conservation Corps in the Land of Lakes, The Journal of the Shaw Historical Library.* Oregon Institute of Technology (Klamath Falls, 2006).

[12]Nevada was one of eight states in the Army's Ninth Corps Area that encompassed the western United States. There were nine corps nationwide.

[13]Juniors Discharges from the Civilian Conservation Corps, December 1, 1937 to March 31, 1939, NARA, FSA CCC Record Group 35, Entry 48, Monthly Discharge Reports, December 1938 - June 1942.

[14]Junior Discharges from the Civilian Conservation Corps During the First Six Months of 1940; Junior Discharges from the Civilian Conservation Corps During the Last Six Months of 1940, NARA,FSA, CCC Record Group 35, Entry 48, Monthly Discharge Reports, December 1938 - June 1942.

[15]Enrollees could re-enroll for up to four consecutive six-month enrollment periods, for a total of two years.

[16]Renée Corona Kolvet and Victoria Ford, "The Civilian Conservation Corps in Nevada: From Boys to Men" (Reno and Las Vegas, University of Nevada Press, 2006).

[17]*Ibid*, 2.

[18]*Ibid*, 54-145.

[19]Conference of Special Investigators (Washington D.C.), April 6, 1937. Division of Investigations Washington, Administrative Files, 1933-1942. FSA, CCC RG-35, Entry 114, Boxes 1-9.

[20]Herman Haynes Jr. interview by Victoria Ford, 2000. University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps//page/n87

[21]*Ibid*.

[22]Calvin Cushing interview by Renée Corona Kolvet, 2000. University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps//page/n31

[23]M.J. Bowen to the Director of the CCC. Camp G-16, Company 3542, December 3, 1940, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Sunnyside.

[24]M.J. Bowen to the Director of the CCC. Camp G-129, Company 225, November 25, 1940, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Lovelock.

[25]A.J. Stockmen to Director of the CCC, Supplemental Report, September 24, 1938. Camp DG-83, Company 4601, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Tuscarora.

[26]Calvin Cushing interview, 2000.

[27]M.J. Bowen to the Director of the CCC. Camp FWS-3, Company 2557, December 12, 1941, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Ruby Lake.

[28]Quarterly Narrative Report, July, August and September 1941, Ruby Lake Camp FWS-3, Wells, Nevada."

[29]M.J. Bowen to the Director of the CCC. Camp BR-36, Company 1216, July 27, 1938, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Lovelock.

[30]A.J. Stockmen to Director of the CCC, SP/NP-4, Company 573, July 7, 1936 and August 16, 1939, NARA, FSA, CCC, RG-35, Entry 115, Camp Inspection Reports, Nevada, Camp Boulder City.

[31]M.J. Bowen to the Director of the CCC. Camp G-87, Company 3237, November 27, 1940, NARA, FSA, CCC, RG-35, Entry 115, Camp Inspection Reports, Nevada, Camp Minden.

[32]Richard Young, personal communication with Renée Corona Kolvet, September 22, 2012.

[33]Edna Timmons interview by Dan Bennett, 2001. University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps/page/n159

[34]Elmer Randall interview by Victoria Ford, 2000. University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps/page/n117

[35]Joseph Ruchty interview with Victoria Ford, 2000, University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps/page/n145 ; Harold Truman Smith, "New Deal Relief Programs in Nevada, 1933 to 1935." Ph.D. diss., University of Nevada, Reno, 1972, 212-215.

[36]Harold Truman Smith, "New Deal Relief Programs in Nevada, 1933 to 1935, 1972, 215.

[37]Ralph Hash interview by Victoria Ford, 2000. University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps/page/n65

[38]Vernard "Bud" Wilbur interview by Victoria Ford, 2000. University of Nevada Oral History Program, https://archive.org/details/CivilianConservationCorps/page/n167

[39]Paul B. Murdock (Advisor) to Director of the CCC, Appendix L, Camp F-7, Company 2512, January 1936, NARA, FSA, CCC, R-G 35, Entry 115, Camp Inspection Reports, Nevada, Camp Reese River.

[40]M.J. Bowen to the Director of the CCC. Camp F-7, Company 6433, November 21, 1941, NARA, FSA, CCC, RG-35, Entry 115, Camp Inspection Reports, Nevada, Camp Reese River.

[41]M.J. Bowen to the Director of the CCC. Camp G-108, Company 1685, November 12, 1940, NARA, FSA, CCC, RG-35, Entry 115, Camp Inspection Reports, Nevada, Camp Hubbard Ranch.

[42]Letter from Wallace Baisden to Present Franklin D. Roosevelt, May 3, 1939. Supplemental for DG-22, NARA, FSA, CCC, RG 35, Entry 115, Camp Inspection Reports, Nevada, Camp Moapa.

[43]Dennis McBride, "Hard Work and Far from Home: The Civilian Conservation Corps at Lake Mead," (Boulder Images, Boulder City, Nevada, 1995), 77-78.

[44]Letter from K.B. Bush to Director, Civilian Conservation Corps, April 5, 1940, NARA, CCC, Records of the Army Adjutant General, 324.5, Nevada, Camp Hubbard Ranch.

[45]Address of J. J. McEntee, Director of the CCC, over the Red Network of the National Broadcasting Company, June 30, 1941, NARA, FSA, CCC, RG-35, Entry 66, Press Releases.

[46]Salmond, *The Civilian Conservation Corps, 1933-42,* 217.

[47]*Las Vegas Evening Review Journal* (July 15, 1942), pg. 2.

Notes & Documents

Rethinking Aurora's Historic Bullion Production

Clifford Alpheus Shaw

A mining expert is a man who wears glasses, looks wise, and talks Dutch.[1]

The amount of gold, silver, and other valuable minerals produced from a given mining district is an important, if not the most important, historical statistic that warrants an accurate accounting by historians. While reasonably reliable records are available for most of Nevada's major historic mining centers, a widely accepted and consistent account of Aurora's bullion production during the 1860s has challenged journalists, mining experts, and historians for over a century and a half.

Established in the early fall of 1860, the town of Aurora grew rapidly to become the second largest community after Virginia City east of the Sierra Nevada by the summer of 1863. Known also as Esmeralda because of its location within the Esmeralda Mining District, Aurora's fame as an important mining center spread across America during its Civil War-era mining boom.

The name of the game in mining, both past and present, is bullion production. Bullion is gold and silver formed into bars derived from mined and milled ore. Aurora's bullion originated as gold- and silver-bearing ore found primarily in veins of quartz that were excavated by miners using hammers, rock drills, gun powder, picks, and shovels. Although this type of mining is now referred to as hard-rock mining, it was called quartz mining during the nineteenth century.[2] The ore was removed from the mine, loaded on wagons, and taken to one of Aurora's seventeen stamp mills where it was crushed and amalgamated with mercury ("quicksilver") utilizing the relatively new Washoe pan-amalgamation process. The amalgam of gold, silver, and mercury was then taken to a retort furnace where the mercury was driven off leaving a rich mix of unrefined gold and silver. This material was taken to a melt-

---

Clifford Alpheus Shaw has been researching Aurora's colorful history for the last 25 years. After retiring from the US Forest Service in 1999, his passion for history and archaeology led him to volunteer for the Forest Service on the Bridgeport Ranger District, Humboldt-Toiyabe National Forest until 2015. He has authored numerous publications including "Mark Twain's Aurora Cabins: Site of His First Success," *Nevada Historical Society Quarterly*, 2003; and a 480 page tome entitled *Aurora, Nevada 1860-1960: Mining Camp, Frontier City, Ghost Town* (Second Edition) in 2018.

The millhand above is pouring molten gold and silver alloy into a bullion bar mold in the melting furnace of the Standard Mill at Bodie, California about 1909. Aurora's bullion bars were made in the same way during the 1860s. (*Emil Billeb Photo Collection, Nevada Historical Society*)

ing furnace where it was cast into 100-pound doré bars,[3] which were referred to as "bullion" during the 1860s. After the bars were analyzed for weight and value at an assay office, they were taken to Aurora's Wells, Fargo & Co. Express office where three times a week they were loaded onto stagecoaches bound for either private refineries in Nevada or California, or to the United States Mint in San Francisco. During the 1860s, Aurora's bullion was worth about $4 to $5 per troy ounce when the price of gold was fixed by the federal government at $20.67 per troy ounce, and silver was priced at $1.29 per troy ounce.[4]

The "art and science" of estimating Aurora's past bullion production began when two journalists turned "mining experts"—Joseph Wasson and William M. Bunker—visited Aurora during the late 1870s to promote the future prospects of this once famous mining district. Their visit was prompted by a mining boom at nearby Bodie, California, which caught the attention of miners, investors, journalists, and the public.

The first account of Aurora's "Revival" was made by journalist Joseph Wasson in a 60-page pamphlet entitled *Bodie and Esmeralda*.[5] A month before his book was published in May 1878, Wasson spent several days touring Aurora's mines:

> Editors Press:—Arrived in Aurora, Nev., two weeks ago to-day, and there remained four days nosing about among the old ruins of Esmeralda, a district which in the history of mining on this coast has made its mark, and then went into decline, but whose future is pregnant with the grandest possibilities.[6]

Immediately after publication, Wasson sent a copy of his book to the editors of the San Francisco *Mining and Scientific Press*, the West's leading weekly publication on mining related topics:

> We have received from Mr. Joseph Wasson, the author, a little pamphlet on "Bodie and Esmeralda," being an account of the revival of affairs in these two singularly interesting and important mining districts, including some of their past history, with a detailed description of mines most developed, tunnels, mills, etc.[7]

In the book's section entitled "Total Bullion Product for Esmeralda," Wasson described the challenge he faced determining Aurora's bullion production:

> It has been the most vexatious and difficult matter to get a satisfactory statement of the products of the Esmeralda [Aurora] mines, first and last, and as yet only an approximate estimate can be given."[8]

Wasson further stated that his "direct inquiry at Wells, Fargo & Co.'s office in San Francisco" revealed that the "records of the kind were destroyed prior to 1870."[9] Although Wasson made no estimate himself, he included bullion estimates from one former and two then current Aurora residents. According to a "recollection" by James S. Jameson, the presiding Judge of the District Court of Esmeralda County at Aurora, Wells, Fargo & Co.'s Express shipped at least $7 million in bullion during 1864, and $12 million up to 1869:

> I was in the office over five years, and made all the reports, but I have forgotten the exact figures. My recollection is, however, that in the year 1864, between $7,000,000 and $8,000,000 were forwarded from the office here, and that about $12,000,000 altogether was sent away prior to the year 1869.[10]

James S. Jameson served as a clerk in Aurora's Wells, Fargo & Co.'s Express office under agent Francis Garesché during the mid-1860s.[11] Wasson's next source was from W. Reese of Krauss & Reese, one of two assay offices in Aurora during the mid-1860s. According to Wasson, Reese stated that his firm "handled about half a million per month for a period of about eighteen months in succession" presumably during 1863 and 1864.[12]

Wasson's third source of information came from J. M. Dormer, the editor of Aurora's only newspaper at the time, the *Esmeralda Herald*. In an April 30, 1878, reply letter to Wasson, Dormer included a table of yearly bullion shipments from 1861 to 1869:

> I enclose you the following table compiled from the books of the old express company. I think it contains only such gold bullion and dust as was shipped by Wells, Fargo & Co., without insurance, for the receipt book is not to be found here…[13]

Note Dormer's caveats of "I think" with respect to his table of shipped bullion that he compiled from the "books of the old express company." Later bullion estimates that referenced Dormer's table stated this as a fact rather than an opinion. The total value of shipped bullion from his table was only $2.4 million, which Dormer stated, "appears to cover only part of the bullion product of the camp." He also stated that "60,000 lbs. of bullion with no marked value" was included in the same books, although he did not elaborate on the meaning and eventual fate of this bullion.[14]

Wasson qualified his bullion source's by stating:

> These are perfectly trustworthy accounts [as] far as they go, but will not have the weight that exact figures, dates, etc., would. …For the present, these figures must suffice for correct data.[15]

A year later, Wasson's bullion estimates were incorporated in a sixteen-page pamphlet entitled *From Report Upon the Aurora Mining District, Esmeralda County, Nevada*, by William M. Bunker.[16] Bunker's report was particularly noteworthy as it included a new bullion estimate by a "Mr. Garisha," who Bunker said was a "general banker" who also worked at Wells, Fargo & Co.'s office at Aurora for "several years." "Mr. Garisha" was clearly Francis Garesché, Aurora's Wells, Fargo & Co.'s Express agent from 1861 to 1866. According to Bunker, Garesché "estimates that the gross bullion product of the district from 1860 to 1869" to be $10,000,000.[17] Bunker did not elaborate on why Garesché would keep a running tally of shipments. Sounding somewhat skeptical, Bunker followed Garesché's estimate with his own assessment, "gentlemen [Bunker did not identify them] who are competent to estimate, place the bullion yield at $15,000,000."[18]

Within days of its release, Bunker's publication was summarized in his own *Daily Stock Report*, a widely followed San Francisco journal that served as "the organ of the miner, the banker, the investor, and the speculator."[19] The *Stock Report's* summary of Bunker's original pamphlet misquoted Garesché's purported bullion production of $10 million to read "$30,000,000." The *Daily Stock Report* article was used as the source for other newspaper articles that touted Aurora's future prospects including the *Weekly Bodie Standard* and the *Engineering and Mining Journal*.[20] These accounts all included the misquoted bullion estimate of $30 million.

There is no doubt that Aurora's former Wells, Fargo & Co. agent Francis Garesché would have been a reputable and reliable source of information about Aurora's bullion shipments during the early to mid-1860s. However, it is unclear how Bunker would have contacted him since Garesché left Aurora for British Columbia in 1866, and died four years before Bunker's publication.[21] Appearing only in Bunker's 1879 pamphlet, Garesché's purported $10 million bullion estimate remains suspect.

Wasson's 1878 bullion summary for Aurora was recycled yet again (albeit uncited) into the U. S. Treasury Department's 1890 "Bullion Product" report for Esmeralda County, Nevada. The report included an estimate of $11 million for Aurora's bullion production from 1861 to 1869, which was based on Dormer's estimate of $2.4 million found in Wasson's 1878 publication plus a value of $8.6 million for the enigmatic 60,000 lbs. of bullion.[22] The Treasury Department's report also included a bullion estimate of $16 million made by Aurora resident Christopher Novacovich:

> J. [*sic*] Novacovich, Mr. Jameson's successor in the office of Wells, Fargo & Co., at Aurora, estimates the product of the district at $16,000,000, and Thompson and West in their "History of Nevada" [1881] make the same estimate.[23]

Novacovich followed Garesché as the Wells, Fargo & Co.'s agent at Aurora in 1866, a post he held until Aurora's Express Office closed along with Aurora's mines in the spring of 1892.[24] The unsourced statement in Thompson and West's *History of Nevada* that "Bullion to the amount of $16,000,000 had been produced in the district up to 1880," remains to this day, one of the most accepted and widely quoted bullion estimates for Aurora.[25]

Other noteworthy published bullion estimates made after 1870 include: $2 million estimate made in the *United States Annual Mining Review and Stock Ledger for the Year 1879*;[26] $12 million "in the two years of prosperity" (presumably 1863 and 1864) by Henry G. Clarke, 1882;[27] $14 million by the U. S. Government, 1883;[28] $16 million by noted historian Hubert Howe Bancroft, 1890 and 1892;[29] $10 million according to former Nevada governor Roswell Colcord, 1928;[30] $27 million by James M. Hill, 1915; [31] $30 million by Frances Church Lincoln, 1923;[32] $29,366,968 by the Nevada Bureau of Mines, 1943;[33] and $30 million by the Nevada Bureau of Mines, 1964.[34] Most recent publications that discuss Aurora's bullion production reference the $16 million estimate from Thompson and West's *History of Nevada*.[35]

Admittedly, bullion estimates made by some of Aurora's most prominent former and contemporaneous citizens,[36] and by prestigious publications and government agencies,[37] provide a strong case for accepting the previously mentioned bullion production estimates of $10 to $30 million. However, there are significant shortcomings associated with these estimates. Not only were many of the sources uncited, or if cited, impossible to corroborate, most estimates were conditioned with caveats like "recollections," "I think," "appear to be," and "in my opinion." The most serious drawback to the veracity of these estimates is they overlooked at least thirty published accounts of bullion shipments from Aurora made during the 1860s. It is curious that no one after 1870 referenced these widely available published accounts by Wells, Fargo & Co. in their bullion estimates.

Since Aurora's stamp mills and mining companies rarely, if ever, released bullion production figures during the 1860s, published bullion shipment amounts made by Wells, Fargo & Co. are the most reliable source available for estimating Aurora's bullion production. Wells, Fargo & Co.'s Express was the primary method for transporting bullion throughout the American West during the mid to late nineteenth century:

> The express company of Wells, Fargo & Co. transport nearly all the treasure produced on the coast, and they could, from their books, show the shipments of coin and bullion from every large mining town west of the Rocky mountains.[38]

> The figures of Wells, Fargo & Co. probably cover the whole production, since in this State [Nevada] practically all the movements of bullion are made by express or are easily ascertainable by the express-agents.[39]

Table 1 contains a summary of published accounts of Wells, Fargo & Co. bullion shipments from Aurora from 1861 to 1869. The bullion amounts listed under each column are given in thousand dollars (i.e. 43 = $43,000). Abbreviations in parentheses after a bullion amount are described at the end of the following table (i.e. MS signifies the San Francisco *Mining and Scientific Press*). The "Author's Estimate" increases the reported bullion shipments from the column on the left to account for bullion shipments that may have left Aurora by conveyance methods other than Wells, Fargo & Co., or for bullion shipments that were not properly credited to Aurora. To account for the possibility of underreporting, the reported yearly or monthly amounts from the column on the left were doubled for the author's estimate for 1861-1862, and the first

six months of 1863. Because the reported bullion shipments made after June 1863 are more numerous and relatively consistent, the highest reported amounts listed in the column on the left were increased by 10% for the author's estimate.

As the table indicates, Aurora produced most of its bullion during the last half of 1863 and the first half of 1864 when most of the camp's stamp mills were operating and generating about $100,000 to $130,000 in bullion per month. This amount is in line with an estimate made by Esmeralda County Judge A.S. Peck who stated in November 1863 that the "express company takes from this place $100,000 to $150,000 every month."[40] Eight months later, Aurora's Methodist minister Ira P. Hale estimated the current monthly shipments at $110,000:

> But should all the mills now in working order have a full and constant supply of paying ore and crush up to their capacity, our district, instead of sending bullion to the amount of one hundred and ten or fifteen thousand, would ship a quarter of a million per month.[41]

TABLE 1
Summary Of Published Accounts Of Wells, Fargo & Co.
Bullion Shipments From Aurora From 1861 To 1869

Year	Published Bullion Amounts by Date and Source			Author's Estimate
1861	43 (WA, 1878)			86
1862	173 (WA, 1878)			346
	216	<Totals for 1861 and 1862>		432
January, 1863	13 (MS, 1/16/64)		1,000 (BR, 1867) 546 (WA, 1878) 587 (BM, 1863-64) 625 (MS, 1/16/64) (Above amounts are for all of 1863)	26
February, 1863	13 (MS, 1/16/64)			26
March, 1863	16 (MS, 1/16/64)			32
April, 1863	30 (MS, 1/16/64)			60
May, 1863	34 (MS, 1/16/64)	130 (CA, 8/26/63) (Three months from May thru July)		68
June, 1863	33 (MS, 1/16/64)			66
July, 1863	48 (MS, 1/16/64) 70 (CA, 8/5/63)			77
August, 1863	100 (CA, 8/26/63) 100 (VE, 9/8/63) 70 (MS, 1/16/64)	321 (RR, 11/7/63) (Three months from August thru Oct.) 220 (HN, 1881)		110
September, 1863	110 (AF, 10/25/63) 39 (MS, 1/16/64)			121
October, 1863	105 (MS, 1/16/64)	(Three months from October thru Dec.)		116
November, 1863	123 (MS, 1/16/64)			135
December, 1863	92 (MS, 1/16/64)			101
	739	<Total Shipments for 1863>		938

TABLE 1, cont
Summary Of Published Accounts Of Wells, Fargo & Co.
Bullion Shipments From Aurora From 1861 To 1869.

Year	Published Bullion Amounts by Date and Source			Author's Estimate
January, 1864	114 (MS, 2/20/64) 130 (MS, 4/4/64) 114 (CA, 5/15/64)	360 (SD, 4/16/64) 317 (VE, 4/7/64) 350 (EB, 4/13/64 276 (MS, 5/7/64) 315 (EU, 4/2/64) 308 (HN, 1881) (Above amounts are or three months January thru March)	952 (WA, 1878) 1,000 (EB, 1/5/64) 960 (MS, 1/14/65) 960 (BM, 1864-65) 1,000 (BR, 1868) (Above amounts are for all of 1864)	143
February, 1864	119 (MS, 4/4/64) 120 (SDU, 3/10/64) 130 (CA, 5/15/64)			143
March, 1864	69 (MS, 4/4/64) 64 (CA, 5/15/64)			76
April, 1864	121 (CA, 5/15/64) (EU, 4/29/64)	428 (CA, 5/14/64) (Four months January thru April)		133
May, 1864	119(CA, 6/11/64) (SDU, 6/7/64)	669 (MS, 7/23/64) (Six months Jan thru June)		131
June, 1864	120 (MS, 8/6/64) 123 (SDU, 7/11/64)			135
July, 1864	100 (MS, 8/6/64) 105 (SDU, 7/28/64)	225(MS, 10/22/64) (Three months July thru Sept.)		116
August, 1864	45 (August EU)			50
September, 1864	53 (September EU)			57
October, 1864	39 (October EU)			43
November	16 (November EU)			18
December, 1864	47 (December EU)			52
	997	<Total Shipments for 1864>		1197
1865	237 (WA, 1878)			261
1866	158 (WA, 1878) 172 (SDU, 1/15/67)			189
1867	131 (WA, 1878)			144
1868	98 (WA, 1878)			108
1869	27 (WA, 1878)			31
	665	<Total Shipments 1865-1869>		733
	2,617,000	**<Total Shipments 1861-1869>**		**3,300,000**

Source abbreviations used in this table include: AF- Sonora *American Flag*; BM- *The Banker's Magazine and Statistical Register*, edited by Smith Homas, Volume 18, 1863-64, p. 804, and Volume 19, 1864-65, 745; BR- J. Ross Browne, *Reports Upon the Resources of the States and Territories West of the Rocky Mountains,* 1867, p. 84, and 1868, p. 335; CA- San Francisco *Daily Alta California*; EB- San Francisco *Evening Bulletin*; EU- *Esmeralda Daily Union*. HN- "Report of the Grand Jury of Esmeralda County, Second Judicial District, for the March Term of said Court, A. D. 1864," in *History of Nevada,* edited by Myron Angel, 1881, p. 424; MS- San Francisco *Mining and Scientific Press*; RR- Austin *Reese River Reveille*; SDU- *Sacramento Daily Union*; VE- *Virginia Evening Bulletin;* SD- *Sonora Democrat*; WA- Joseph Wasson, *Bodie & Esmeralda*, 1878, p. 47; Note that the bullion totals given for the right column are a total of the highest available monthly figures.

Less than a month after Hale predicted Aurora could ship as much as $250,000 in bullion per month provided there was a sufficient supply of ore, the ore unexpectedly ran out prompting the abandonment of Aurora's mines:

> INACTIVE.—In traveling over the hills of this district the other day, we were struck with surprise at the great number of good claims apparently deserted. …Good claims and bad alike forsaken, and must remain so until times become better.[42]

> PROSPECTS OF ESMERALDA.—The question is often asked, 'why has the shipments of bullion from Esmeralda so materially decreased?' We answer, simply because work in the mines has been suspended.[43]

Additional information that supports the relatively meager bullion amounts for the all-important years of 1863 and 1864 include published bullion production reports from Aurora's largest and most productive mines—the Wide West and Real del Monte. According to an investigation report prepared by the stockholders of the Wide West Mining Company, the total amount of bullion shipped to San Francisco during May 4 to December 31, 1863, was only $47,708.[44] Additionally, the published results of a court decision of the Fourth District Court in San Francisco indicated that only $519,000 in gold and silver bullion was produced by the Real del Monte mine between June 1863 and March 1864.[45]

The collapse in bullion shipments that began during the fall of 1864 continued through 1865 when Aurora's bullion production fell to only $19,000 per month.[46] Despite two minor mining booms during the 1880s, Aurora's paltry bullion shipments continued through the rest of the nineteenth century. Aurora did produce about $2 million in bullion during the camp's final mining boom during the early 1900s.[47]

These low bullion production figures during the 1860s had a dramatic impact on the profitability of Aurora's mining companies. The only record of any dividends (mining company profits distributed to shareholders) dispersed by Aurora's mining companies were two $5 per share dividends (totaling $26,000) paid by the Golden Age and Empire Mining Company in mid-1864.[48] This paltry amount pales in comparison to $125 million in dividends paid out to Comstock Lode mining company shareholders from 1859 through 1881[49] and $6.3 million in dividends paid out from Bodie's mining companies from 1877 to 1888.[50]

While there is no doubt Aurora had large quantities of incredibly rich ore lying at or just below the surface during its early days, turning that rich ore into bullion was extremely problematic. Those few mills that were operating at that time were notoriously inefficient in removing gold and silver from mined ore. Other problems that plagued Aurora's mills included frequent mechanical breakdowns, which were exacerbated by the town's remote location and a lack of water, a critical ingredient in the milling process. The following accounts describe the kind of problems that curtailed bullion production at Aurora during the early 1860s:

> [April 1862] There are but four mills in operation here at present, and but one or two of these are giving satisfaction. The general complaint is that they do not save the gold and silver.[51]

> [May 1862] Many say that the mills do not save the metal…. It is my candid opinion that we have some very good mills here, but I am very much inclined to think that we will require to have a more thorough system of amalgamating processes and machinery to save the gold here than at any other place, as the metal is of a very poor quality, light and fine.[52]

Located in Del Monte Canyon about two miles west of Aurora, the Real del Monte mill cost $250,000, or about $5 million in today's dollars. It was the largest and most expensive structure ever built at Aurora. The main building was 160 by 60 feet, while the engine room was 60 by 60 feet. Although the Del Monte mill began limited operation in January 1864, the problem-plagued mill was shut down during most of the next five months due to a broken engine. By the time the mill was up and running during the summer of 1864, Aurora's ore production was on the decline. The photograph above was likely taken during the 1880s when the mill was owned by the Consolidated Esmeralda Limited mining company. (*Courtesy of Robert E. Stewart*)

[July 1863] But generally the mills here are poor shifts, none but the "Wide West" and "Antelope Mills" are considered of any force; and their apparatus for saving silver is considered defective.[53]

[August 1863] Inability of three or four of the mills, that are worth anything at all for crushing rock, to run their stamps more than half the time, owing to the extreme scarcity of water, the previous winter having been unexpectedly dry, and affording scant means for a summer's supply of this necessary article. Prolonged stoppages of some of the mills have also occurred from various other causes, such as putting in new machinery, etc.[54]

[October 1863] Compared with Virginia [Comstock], we send away but little bullion… We are told that in that region, of which Virginia forms the great centre, there are one hundred mills. In Esmeralda we have seven mills. One of the Virginia mills has a battery of eighty stamps. All our mills together have only eighty-six, or six more than the Gould & Curry.[55]

> …yet the amount of bullion [for 1863] coming from that quarter [Aurora] has not been large. To account for the meager returns from these mines, it is said the mills have heretofore been unable to successfully treat the ores, some failing from want of metallurgical skill—difficulties and deficiencies that, it is claimed, have now been, in good measure, overcome or supplied. Another obstacle, at least with some mills, has been a lack of water; a trouble that threatens always to be a serious drawback to the prosperity of that whole region.[56]

Bunker's 1879 pamphlet characterized early milling practices at Aurora as "stupid" and "reckless":

> The milling interest of Esmeralda has a curious and interesting history. The quartz millers were generally stupid or reckless, and often had both these bad traits. There were a few exceptions to be sure. I did not hear of an exception. But I assume that there must have been some exceptions. This assumption is intended as an act of courtesy to the district. The average ore was of high grade, free milling, and should have yielded $500 per ton, but the slovenly manner of milling brought the product down to 50% of the assay value. In numerous instances, not more than one-half of the necessary quantity of quicksilver was placed in the pans. After all the quicksilver had caught all the metal it could possibly carry, the rest of the precious stuff went through the mills without amalgamation and was washed away by the waters of the creek. Several million dollars at an easy calculation, was wasted through careless milling.[57]

By the time Aurora's largest and most efficient mills—the Antelope and Real del Monte—came online, Aurora's rich surface ore deposits began to diminish. Noted journalist and mining expert J. Ross Browne spent the month of September 1864 in Aurora and witnessed firsthand a slowdown in production by the Real del Monte and Antelope stamp mills due to a lack of ore:

> [After leaving Aurora on his way to Bodie] We stopped awhile at the foot of the grade to visit the magnificent quartz-mills of the Real del Monte and Antelope Mining Companies… These mills were in operation at the time of our visit, but were not working to their full capacity, owing to the want of a sufficiency of ore.[58]

Three years later, Browne noted Aurora's overall inability to produce bullion during the 1860s:

> "Several of these [Aurora's stamp mills], being very extensive and complete in their appointments, cost large sums of money; but, as yet, none of them have accomplished much in the way of turning out bullion,…"[59]

Other issues affecting bullion estimates involve shipments made by conveyances other than Wells, Fargo & Co. and bullion shipments from Aurora that may have been mistakenly credited to Virginia City's mines. While there is no doubt bullion was shipped from Aurora by other means, the question is how much? One Nevada newspaper article from 1866 added 7½ percent to Wells, Fargo & Co.'s bullion shipments to account for "bullion carried from Nevada [to San Francisco] by private parties, etc."[60] Another source stated that Wells, Fargo & Co.'s reported shipments were within 8 to 10 percent of the actual total bullion production for Nevada during 1864:

> This amount [$16 million in bullion shipped from Nevada by Wells, Fargo & Co., during 1864, which included only $960,000 from Aurora] includes small lots of bullion, transmitted through the Pacific Express Company, and probably indicates within 8 or 10 percent all the bullion produced by the State of Nevada this past year, very little of an article so cumbersome being brought away in private hands or through other channels.[61]

A newspaper article that provided information specifically related to Aurora's bullion shipments during September 1863 indicated that an additional 10 percent of the reported Wells, Fargo & Co. left Aurora by other conveyance methods:

> The Bullion sent down the last month through Wells & Fargo's Express $99,617.17; through other sources $10,3612.41; making a total of some $110,003.61."[62]

According to Horace Marden, a prominent and well-respected freighter and feed yard owner who was involved with Aurora's milling operations from 1866 to 1889, a considerable amount of bullion was produced and shipped without any record by individual miners who leased company mines. Most of the ore mined by these "highgraders" was converted into bullion at small custom mills.

> During that period [mid to late 1860s] most of the companies maintained a representative in Aurora. They leased to the miners the privilege of working the mines, also of sorting the dumps. Many small fortunes were thus made, and much bullion left the camp without available record for various reasons.[63]

If, as some accounts made after 1870 suggest, Aurora produced at least $10 million in bullion during the 1860s, and one accepts that the available records from the 1860s suggest a bullion output of $3 million, then about $7 million worth of bullion must have "left the camp without available record for various reasons." Accepting that premise implies that almost 2½ times more bullion left Aurora without credit than was shipped by Wells, Fargo & Co. (i.e. $7 million divided by the $2.7 million of bullion shipments reported during the 1860s). If that were the case, then one should question why Aurora's mines needed expensive stamp mills, hundreds of incorporated mining companies, and Wells, Fargo & Co. when such a large amount of bullion could be produced and shipped by nonconventional methods.

Another issue raised regarding bullion shipments is the belief that a considerable amount of bullion shipped from Aurora was mistakenly credited to Virginia City's mines particularly during the early 1860s:

> I notice we [Aurora] shipped $70,000 in bullion [during July 1863], although, of course, we got no credit for it, it being swallowed up in the stream from Washoe. [64]

That statement is in error as $48,000 in bullion was credited to Aurora during July 1863 according to Wells, Fargo & Co.'s records published in the *Mining and Scientific Press,* January 16, 1864. This means that upwards of 70% of the bullion shipped during July 1863 was correctly credited to Aurora. Another newspaper account claimed that no credit was given to Aurora for the $200,000 of bullion shipped per month during late 1863:

> Even now, with a very limited capacity of mill power, we are shipping from this camp nearly two hundred thousand dollars per month, of which we get no credit, it all being swallowed up under the head of "Washoe bullion."[65]

Contrary to this assessment, the reported bullion shipments made by Wells, Fargo & Co. from August to December 1863 were about $100,000 per month, which negates the statement "we [Aurora] get no credit." The $200,000 per month figure mentioned above is also at odds with the reported monthly shipments of between $100,000 and $150,000 previously stated by Esmeralda County Judge A. S. Peck in November 1863. Another point that downplays the relevance of substantial bullion shipments leaving Aurora by means other than Wells, Fargo & Co. is that many of the more widely quoted and inflated bullion estimates made after 1870 were specifically referencing amounts shipped from Wells, Fargo & Co.'s Aurora office.[66]

Even Aurora's reported bullion tally during the 1860s may be too high since much of the ore mined at nearby Bodie during that time was converted into bullion at Aurora's mills. In addition, most of the bullion produced from Bodie's early arrastras and stamp mills was assayed, shipped, and presumably credited to Aurora according to a reputable reference from 1869:

> "The bullion produced from the ores of Bodie District, in California, is in great part, at least, taken to Aurora for assay and is shipped from there."[67]

For a final reality check, skeptics of the $3 million bullion estimate are encouraged to visit both Bodie and Aurora to see for themselves if the historic mining activity at Bodie, which produced $18 million,[68] compares with the past mining activity at Aurora, with its purported bullion production $10 to $30 million. Such a visit should confirm that there is substantially more evidence of historic mining activity including waste rock piles and stamp mill tailings at Bodie than one sees today at Aurora. Mining engineer J. H. Farrell reached the same conclusion in 1934 when he stated:

> These figures [estimates of $12 million to $27 million worth of bullion mentioned in his report] are almost incredible in spite of the large number of veins in the district. Neither the dumps nor surficial evidence of the workings indicate the removal of any large tonnage of ore, and it is very certain that most of the mining was done above a depth of 200 feet. Either the production has been greatly exaggerated, or else the ore was exceptionally high grade.[69]

Because Aurora's "exceptionally high grade ore" would still require milling by Aurora's problem-plagued stamp mills and shipment by Wells, Fargo & Co., Ferrell's alternative that Aurora's bullion production "has been greatly exaggerated" appears to be the more likely scenario.

Conclusion

Journalists, geologists, and historians—both past and present—have based their bullion production estimates of between $10 and $30 million on either uncited sources, "recollections," "opinions," or unverified "statements." All were offered years after Aurora's mines and mills shut down in the late 1860s. Published accounts originating from the time when Aurora's mines were flourishing only support a bullion production estimate of about

$3 million. When one compares this amount to the $81 million worth of bullion produced at Virginia City's Comstock Lode from 1859 to 1867[70] and Bodie's production of about $18 million from 1877 to 1888,[71] Aurora's paltry bullion production during the 1860s is a poor showing for such a famous mining region.

The reasons for the "greatly exaggerated" bullion production estimates made after 1870 likely relate to journalists and so-called "mining experts" promoting a hoped-for revival of Aurora's mines at the time Bodie's mines were booming. Aurora was no stranger to overexaggeration as its origins go back to rampant speculation orchestrated by capitalists in San Francisco during the 1860s.[72]

Considering how many millions were spent developing Aurora and its mining infrastructure, a production of only about $3 million places Aurora among Nevada's most costly and wasteful mining districts:

> Journeying on by many a deserted claim and camp, we arrived in Esmeralda country—a very Golgotha of mining enterprise, and hope, and industry. In hardly any other district of Nevada has so much money been spent to so little purpose as here. The sums thrown away may be literally counted by the million. Aurora, once a large and lively town, wears now a cadaverous aspect.[73]

Aurora's failure to produce bullion does not diminish the prominent role the town and its mines played in Nevada's early history. The discovery and formation of the Esmeralda Mining District opened up a vast new region of the Great Basin to mineral exploration and settlement. Aurora helped establish Nevada Territory in 1861 and statehood in 1864. People across America, including prospectors, miners, storekeepers, bankers, politicians, lawyers, doctors, and a host of other professional and working-class men and women, flocked to Aurora during the turbulent days of the Civil War to establish a vibrant frontier community that lasted more than half a century. Although it is important to account for the amount of gold and silver bullion that was produced at the Esmeralda Mining District during the booming 1860s, it is the contribution made by these pioneering citizens in the early development of Nevada that is Aurora's most enduring product.

Notes

[1]Statement made during a "trial in the U. S. Court in Carson City" by a person "passing as an expert," according to Horace Marden, *Inyo Register*, November 13, 1915, from Peggy Knudsen Lee, *Tales of Aurora, Bodie & Columbus* (La Crescenta: Mountain N'Air Books, 2010), 55, 56.

[2]Michael H. Piatt, "The Technology of Mining Gold: Introduction to Bodie's Mineralogy," 2008.

[3]"'Doré bars' is a term applied to such silver bars as contain gold, as well as being alloyed with a small amount of base metals. These bars are generally in the form of rectangular, oblong bars of various sizes, …differing in the contents of silver from six hundred [i.e. 60%] to nine hundred and ninety per thousand [i.e. 99%]. See *Appendix to the Journals of the Senate and Assembly of the Twenty-Ninth Session of the Legislature of the State of California, Volume IV*, 1891, (Sacramento: State Printing Office), 63.

[4]Troy ounce is a measure of weight associated with precious metals, which is different from the more commonly used avoirdupois ounce. One troy ounce is equivalent to 1.333 avoirdupois ounce. Although troy ounce is the proper way to express the weight of bullion, it is unclear if all of the following references cited were expressed in troy or avoirdupois ounces: $3.97 per ounce ("Report of Committee of Investigation, appointed by Stockholders of the Wide West Mining Company, January 25, 1864," 1864, Table E, 15); $3.90 per ounce (May 8, 1864 letter by George Whitney from Aurora to William Whitney in Waterloo, Iowa,); "During the month of June, Krauss & Reese assayed 25,810 ounces of bullion valued at $112,698," which equates to $3.91 per ounce. *Esmeralda Daily Union*, (July 1, 1864); "The bullion produced in Esmeralda is worth from four to six dollars per ounce." Colorado *Daily Mining Journal* (April 30, 1864), quoting an article from the "*Aurora Times*"); "The average value of bullion obtained at Aurora does not exceed $7 or $8 per ounce, the greater portion of it being worth less than $5." *Virginia Evening Bulletin* (January 25, 1864); $2.97 *Esmeralda Daily Union* (April 28, 1864); $2.37 from Antelope Mine *Esmeralda Daily Union* (May 5, 1864).

[5]Joseph Wasson, *Bodie and Esmeralda, being an account of the revival of affairs in two singularly interesting and important mining districts, including something of their past history, and the gist of the reports of Profs. Benj. Silliman and Wm. P. Blake, the late J. Ross Browne, and State Mineralogists R. H. Stretch and H. R. Whitehill—Also, detailed description of mines most developed, tunnels, mills, etc.—Also, general resources of Mono and Esmeralda Counties—with maps and illustrations,* (San Francisco: Spaulding, Barto, and Co., 1878). Joseph Wasson (1839-1882) and his brother William were newspapermen with the *Owyhee Avalanche*, Silver City, Idaho, from 1865 to 1867. Joseph moved to Nevada in 1868, where he wrote for the *Winnemucca Argent* and later, the *Pioche Review*. While residing in Bodie, Joseph he was elected in 1879 to the California State Assembly, representing Mono and Inyo counties. Both brothers had mining interests in the Homer Mining District. See Candace Gregory, "Hiking with Sally from Lundy Lake through Mill Creek Canyon," *Sierra News Online*, October 16, 2016; and Michael H. Piatt, "Bodie's Discovery Story: As Told by Joseph Wasson, Judge J.G. McClinton, and E.S. "Black" Taylor," online document, March, 2011.

[6]*Mining and Scientific Press* (April 20, 1878), San Francisco: Dewey & Co.

[7]*Mining and Scientific Press* (June 1, 1878).

[8]Wasson, *Bodie and Esmeralda*, 46.

[9]Wasson, *Bodie and Esmeralda*, 46, 47. A recent inquiry by the author to Wells Fargo Historical Services in San Francisco confirmed that the shipment records for Aurora are no longer extant.

[10]Letter from Jameson to Wasson dated May 5, 1878, Wasson, *Bodie and Esmeralda*, 47.

[11]*Daily Alta California* (June 15, 1863). Garesché was Wells, Fargo & Co.'s Express agent from 1861 to 1866. According to the *Borax Miner*, November 20, 1875: "Francis Garesché came to Aurora in May 1861 as the first agent of Wells Fargo and established a banking business which still continues in his name. In 1866 he took up residence in British Columbia. At the time of his death he was also a banker at Victoria and was agent for Wells, Fargo & Co., both at Victoria and Aurora." For more information about the Garesché family, see Sue Silver, *Aurora Nevada's Silent City on the Hill* (Charleston: Createspace), 76-78.

[12]Wasson, *Bodie and Esmeralda*, 47.

[13]Although the phrase "shipped without insurance" appears self-explanatory, the author was unable to find any evidence of this practice by Wells, Fargo & Co. during the 1860s.

[14]Wasson, *Bodie and Esmeralda*, 47.

[15]Wasson, *Bodie and Esmeralda*, 46-48.

[16]W. M. Bunker, *From Report Upon the Aurora Mining District, Esmeralda County, Nevada* (San Francisco: Barry, Baird & Co., 1879).

[17]Bunker, *From Report Upon the Aurora Mining District,* 11, 12.

[18]*The Engineering Mining Journal, Vol. 27, January to June 1879* (New York: Scientific Publishing Co., 1879), 264.

[19]*Daily Stock Report* (March 31, 1879), as published in *The Engineering Mining Journal, Vol. 27, January to June 1879* (New York: Scientific Publishing Co., 1879), 264.

[20]*Weekly Bodie Standard* (April 5, 1879); *The Engineering Mining Journal, Vol. 27, January to June 1879* (New York: Scientific Publishing Co., 1879), 264.

[21]*Borax Miner*, (November 20, 1875).

[22]U.S. Treasury Dept., *Report of the Internal Commerce of the United States for the Year 1890, Part II of Commerce and Navigation* (Washington, D. C.: U.S. Government Printing Office, 1891), 670. Although neither Dormer nor Wasson

qualified or speculated on the meaning of the "60,000 lbs. of bullion with no marked value," the Treasury Department included their own estimate of $8,640,000 for this bullion (60,000 lbs. x 16 ounces x $9 per ounce = $8,640,000. They then added this amount to Dormer's "uninsured" estimate of the $2,365,918, which gave a total value of $11,005,918 However, Aurora's bullion was worth about $4 per ounce which would cut the Treasury Departments total estimate almost in half down to about $6.2 million.

[23]U.S. Treasury Dept., *Report of the Internal Commerce of the United States for the Year 1890, Part II of Commerce and Navigation*, 670.

[24]*Daily Territorial Enterprise* (March 9, 1892); *Reno Weekly Gazette and Stockman* (December 29, 1892).

[25]Myron Angel, editor, *History of Nevada with Illustrations and Biographical Sketches of its Prominent Men and Pioneers* (Oakland: Thompson & West, 1881), 416.

[26]*United States Annual Mining Review and Stock Ledger for the Year 1879* (New York: Mining Review, 1879), 143.

[27]Henry G. Clarke, "Aurora, Nevada: A Little of its History, past and Present," *The School of Mines Quarterly, Vol.* III, November, 1881, to May 1882 (New York: Alumni Association, School of Mines, Columbia College, 1882), 133.

[28]*Report of the Director of the Mint upon the Production of the Precious Metals in the United States during the Calendar Year 1883* (Washington, D. C.: U.S. Government Printing Office, 1884), 511.

[29]Hubert Howe Bancroft, *Chronicle of the Builders of the Commonwealth* (San Francisco: The History Company, 1891), 206; and *History of Nevada, Colorado, and Wyoming 1540-1885* (San Francisco, The History Company, 1890), 259.

[30]Roswell Colcord, "Reminiscences of Life in Territorial Nevada," *California Historical Society Quarterly*, (June 1928), 115. According to Colcord: "It would have been impossible then, nor has it been possible at any time since to estimate, even approximately, the amount of bullion the camp produced. The big yield lasted only about two years, and in my opinion ten millions of dollars would be the maximum."

[31]James M. Hill, "Some Mining Districts in Northeastern California and Northwestern Nevada," *U.S. Geological Survey Bulletin 594* (Washington, D. C.: U.S. Government Printing Office, 1915) 142. Hill's estimate of $27 million is based on a purported undated "statement" by Wells Fargo & Co., which has not been located and therefore cannot be verified. The statement is suspect because as previously stated, Wells, Fargo & Co.'s records for the 1860s were destroyed prior to 1870 according to Wasson. J. M. Hill was a geologist with the U. S. Geological Survey who wrote extensively for the USGS about various mining districts in the West.

[32]Frances Church Lincoln, *Mining Districts and Mineral Resources of Nevada* (Reno: Nevada Newsletter, 1923), 137.

[33]Bernard F. Couch and Jay A. Carpenter, *Nevada Metal and Miner Production* (*1859-1940, Inclusive*), (Reno: Nevada Bureau of Mines, 1943), 104. This report also stated that less than $200,000 was produced from the 1880s to 1900, and that the Aurora Consolidated Mines Company produced $1,847,940 in bullion from 1914 to 1918.

[34]Francis Church Lincoln, "Part I, An Outline of the Mining History of the State of Nevada (1855-1923)," *Outline of Nevada Mining History* (Reno: Nevada Bureau of Mines, 1964), 3.

[35]Roger D. McGrath, *Gunfighters, Highwaymen, and Vigilantes*, (Berkeley: University of California Press, 1984), 3; Robert E. Stewart, *Aurora Nevada's Ghost City of the Dawn* (Las Vegas: Nevada Publications, 2004), 2.

[36]James S. Jameson; J.M. Dormer, Francis Gareschè; Roswell K. Colcord; and Christopher Novacovich.

[37]Myron Angel, Editor, *History of Nevada (*U. S. Treasury Department; U.S. Geological Survey; and the Nevada Bureau of Mines, 1881).

[38]J. Ross Browne and James W. Taylor, *Reports Upon the Resources of the States and Territories West of the Rocky Mountains* (Washington, D. C.: U.S. Government Printing Office, 1867), 51.

[39]Rossiter W. Raymond, *Silver and Gold: An Account Of The Mining And Metallurgical Industry Of The United States, With Reference Chiefly To The Precious Metals* (New York: J.B. Ford and Company, 1873), 141.

[40]William H. Knight, editor, *Hand-book Almanac for the Pacific States: An Official Register and Business Directory of the States and Territories of California, Nevada, Oregon, Idaho, and Arizona; and the Colonies of British Columbia and Vancouver Island, for the Year 1864* (San Francisco: H.H. Bancroft and Company, 1864), 281.

[41]*Esmeralda Daily Union* (August 19, 1864), Aurora, N.T [Nev].

[42]*Esmeralda Daily Union* (September 3, 1864).

[43]*Esmeralda Union* (December 7, 1864), Aurora, N.T [Nev].

[44]Wide West Mining Company, *Report of Committee of Investigation, appointed by Stockholders of the Wide West Mining Company, January 25, 1864* (San Francisco: Dewey & Co., 1864), 15.

[45]"James J. Robbins vs. the Real del Monte Mining Company, et al.," *Daily Alta California* (January 4, 1865).

[46]John C. Van Tramp, *Prairie and Rocky Mountain Adventures, or Life in the West* (Columbus, Ohio: Segner & Condit, 1870), 653.

[47]"From 1910 to 1920 the district produced $1,974,290, according to Mineral Resources of the United States." William O. Vanderburg, *Department of Interior, United States Bureau of Mines, Information Circular 694, Reconnaissance of Mining Districts in Mineral County, Nev*. (Washington, D. C.: U.S. Government Printing Office, 1937), 15.

[48]*Mining and Scientific Press* (May 28, 1864 and July 2, 1864).

[49]Grant Smith, *History of the Comstock Lode 1850-1920* (Reno: Nevada State Bureau of Mines, 1943), 293.

[50]Californian State Mining Bureau, *Eighth Annual Report of the State Mineralogist for the year ending October 1, 1888* (Sacramento: California State Printing Office, 1888), 397.

[51]"Letter from Esmeralda," April 28, 1862, *Evening Bulletin* (May 6, 1862).

[52]*San Francisco Evening Bulletin* (May 13, 1862).

[53]*Mariposa Free Press* (July 18, 1863).

[54]Drawbacks of the Esmeralda Mines," "Drawbacks of the Esmeralda Mines," August 18th letter from Aurora, *Daily Alta California* (August 26, 1863).

[55]"From the Aurora [Esmeralda] Star of the 29th Sept.," *Virginia Evening Bulletin* (October 2, 1863).

[56]"Mining Review for 1863," *Daily Evening Bulletin* (January 11, 1864).

[57]Bunker, p. 3.

[58]J. Ross Browne, *Adventures in the Apache Country: A tour through Arizona and Sonora, with notes on the Silver Regions of Nevada* (New York: Harper and Brothers, 1868), 395-396.

[59]J. Ross Browne and James W. Taylor, *Reports Upon the Resources of the States and Territories West of the Rocky Mountains*, 1867, p. 125.

[60]"Bullion Shipments for 1866, in the Gold Hill *News* of the 10th [January 1866]," San Francisco *Daily Alta California*, January 16, 1866.

[61]"Mining Review for 1864," San Francisco *Daily Evening Bulletin*, January 11, 1865.

[62]Sonora *American Flag*, October 25, 1863.

[63]Horace Marden, *Inyo Register*, December 2, 1915, from Peggy Knudsen Lee, *Tales of Aurora, Bodie & Columbus*, p. 73.

[64]Letter from Aurora dated July 30th, San Francisco *Daily Alta California*, August 5, 1863.

[65]Letter from Aurora dated October 20th, San Francisco *Daily Alta California*, October 31, 1863.

[66]Jameson's $12 million estimate from Wasson 1878, Garesché's $10 million estimate from Bunker 1879, and Hill's estimate of $30 million in 1915.

[67]William B. Blake, *The Production of the Precious Metals or Statistical Notices of the Principal Gold and Silver Producing Regions of the World*, 1869, p. 138.

[68]California State Mining Bureau, *Eighth Annual Report of the State Mineralogist for the year ending October 1, 1888*, 1888, p. 397.

[69]J.H. Farrell, "Report of the Aurora District," August 1934, p. 3. (Unpublished private report in the possession of J.R. Wilson of Sparks, Nevada).

[70]William B. Blake, *The Production of the Precious Metals or Statistical Notices of the Principal Gold and Silver Producing Regions of the World*, 1869, (New York: G.P. Putnam & Son) p. 129. The Comstock produced $320 million in bullion from 1859 to 1880 (Smith, pp. 293, 294).

[71]California State Mining Bureau, *Eighth Annual Report of the State Mineralogist for the year ending October 1, 1888*, 1888, p. 397.

[72]Clifford Alpheus Shaw, *Aurora, Nevada, 1860-1960*, 2016, pp. 13-22 (eBook).

[73]Henry DeGroot, "Mining on the Pacific Coast," *Overland Monthly*, 1871, p. 154.

Book Reviews

A Tale of Two Bridges: The San Francisco-Oakland Bay Bridges of 1936 and 2013. By Stephen D. Mikesell. (Reno: University of Nevada Press, 2017), 216 pp.

Infrastructure is often hidden, quietly doing its job away from the public eye. But bridges are an exception. Beyond mere function, they serve as aesthetically pleasing tangible links between communities. This well written and engaging history examines the 1936 and 2013 San Francisco-Oakland Bay Bridges. As may be surmised from the title, the author contrasts the relative success of the first Bay Bridge to the cost overruns and technical failures of the second. The 1936 bridge was constructed on time and slightly under budget. It transformed transportation and had a lasting impact on the Bay area. In contrast, the 2013 bridge, a replacement for the eastern half of the 1936 bridge, was a decade late, seven times more expensive than anticipated, and riddled with serious design and construction flaws. While the new span is aesthetically pleasing, its functionality is little different from the earlier bridge. Traffic congestion after the opening of the 2013 bridge was as bad as before. This work examines the fundamental question of what made the 1936 bridge so successful and what people did well at that time versus the problematic 2013 bridge.

After a short introduction, Mikesell first details what transportation (rail, auto and ferry) was like in the Bay Area before the first bridge. Significant private ferry service, connected at both ends to electric streetcars and interurban railroads, shuttled thousands of commuters from the east bay to San Francisco daily. A bridge connecting San Francisco and Oakland, usually via Yerba Buena Island, was proposed as early as the Gold Rush era, but it was not until the 1920s that the idea was seriously considered and planned. Chapter two describes the early planning while chapter three examines how the bridge was finally approved. Planning is a long way from building. It would take the agreement of multiple stakeholders to finally get the original bridge off the drawing boards. The US Navy, which had substantial bases in the area, was reluctant to approve a bridge that could impact its navigation. It took the combination of substantial local and state support with intervention of President Hoover and the need for employment during the Great Depression to finally get the project off paper and into steel and concrete. A short but important chapter four puts the 1936 bridge into context with other great bridges of the era, from the George Washington bridge in New York to the neighbor of the Bay Bridge, the famous Golden Gate bridge. Chapters five and six describe in readable detail how the 1936 bridge was designed and built, and the complex decisions that went into its final form of a double-deck, western dual-suspension bridge and an eastern cantilever-truss design.

While many works would stop at this point with the bridge built, the great strength of this book is that the author continues. Chapter seven takes the history of the Bay Bridge from completion in 1936 up to the 1989 Loma Prieta earthquake when the east span was significantly damaged. Chapter eight looks at the complex decision-making that went into

the final choice by California transportation officials not to repair the damaged eastern span but to replace it entirely. Chapter nine is a brief interlude (like chapter four) to again bring readers up to date on the context of bridges and bridge construction technology in the 1990s and early 21st century. New bridge technologies such as cable stayed bridges that were not possible in the 1930s were now available to designers and engineers. Chapters ten and eleven then chronicle the planning and construction, and the accompanying technical failures, delays, and cost overruns of the 2013 bridge. An aesthetically pleasing, but relatively untried self-anchored asymmetrical suspension span was chosen, but not without controversy. The routing of the new bridge, the use of a Chinese construction firm—almost everything about it was controversial. A short conclusion ties the work together.

Well researched from official government documents as well as newspaper and technical journals, the book presents an engaging picture of two engineering megaprojects. The first was a huge success while the second was poorly conceived, managed, and executed. The work is complemented with significant and well-chosen photos and illustrations. Bridges are by nature visually appealing and the photos meaningfully enhance the story. Chapter endnotes, a substantial bibliography, and index help to complete the work. This is a masterful work that will appeal to anyone with an interest in transportation policy, technological megaprojects, Bay Area history, and modern California in general.

Jeff Schramm
Missouri University of Science and Technology

Under the Western Sky: Essays on the Fiction and Music of Willy Vlautin. Edited by Neil Campbell. (Reno: University of Nevada Press, 2018), 248 pp.

This book is a collection of essays by seven scholars on the work of singer/songwriter Willy Vlautin, former member of the alt-country band Richmond Fontaine and author of five published novels. The idea for the book evidently began in 2015 with a Western Literature Association conference panel of Neil Campbell, Susan Kollin, William Lombardi, and Stephen Tatum, all of whom contributed to the current volume. Ángel Chaparro Sainz, Jeffrey Chisum, and Lars Erik Larson also contributed chapters. Five of the nine chapters emphasize Vlautin's musical career, with the remaining chapters devoted to his literary work.

All of the writers address Vlautin's various portrayals of the hardships and dreams of working-class America. His stories and songs represent the "geographies of hurt and hope" (5), with a focus on the cities of Reno, where Vlautin was born, and Portland, Oregon, where he relocated and which was the homebase of his band. There is violence in both his music and fiction, especially of domestic or "quiet violence" (143), often resulting from the breakdown of families, the unforgiving American economy, or sheer bad luck. Such stories thus reflect the experiences of those with few resources and little knowledge of other options, while at times receiving "a great many acts of care, almost always from strangers" (147).

Several of the essays stand out. Two of Campbell's three chapters open and close the text, deftly explaining some of the main themes that Vlautin confronts, of a West that "is

scarred, like his characters" (13). Campbell's third chapter draws on interviews with artists Greg Allen and Nate Beaty, who created drawings for several of Richmond Fontaine's albums and Vlautin's novels. Chisum's contribution places Vlautin's work within the context of other writers of the American West, including Cormac McCarthy and Edward Abbey, and Kollin highlights the "resentment toward people of color and women in general" (193) among some of Vlautin's characters. Larson directly tackles the ever-present theme of violence in Vlautin's novels, of beatings, rapes, and killings by small town characters whose agonized struggles rarely if ever would appear in the national press. Chaparro Sainz writes engagingly on the literary aspects to Vlautin's songwriting. The writing styles across these essays naturally vary enormously, and some inevitable repetitions in the text occasionally result, especially when authors discuss the same novels or albums. Yet together they provide different and complementary perspectives into the work and the man.

There is much to learn from these essays, with some caveats. For example, the authors recognize Vlautin's almost uncanny ability in his songs to capture the stories of the voiceless, similar to the work of Bruce Springsteen, Willie Nelson, Tom Waits, and other songwriters whom Vlautin admires. Vlautin's identification with the outlaw musical tradition, with its "undying appeal of the cowboy" (p. 96) within America's rural landscapes, has a haunting honesty that clearly resonates in these essays. Yet perhaps as a result, there is little criticism of Vlautin's work to be found in the essays; Vlautin appears, like one of his characters, virtually as a "latter-day Huckleberry Finn" (p. 74), whose "American working-class fiction [is] deeply rooted in place" (p. 15).

Part of the admiration that these scholars seem to have for Vlautin is his transition from singer/songwriter to author. Vlautin evidently enjoyed crime fiction well before he became a writer and longed "to write crime fiction without the crime" (p. 230). As he explained in an interview, he wanted to provide "the intensity of a crime novel" by creating "working-class stories that could keep you up in the middle of the night, but not rely on having a guy coming through the door with a gun" (pp. 230-31). This kind of dramatic intensity inhabits all five of his novels, from *The Motel Life* (2006) to the most recent *Don't Skip Out on Me* (2018); the latter appeared the same year as the current text and so was too recent to be included in the volume. Several of his novels have inspired filmmakers to present them on the big screen, notably *The Motel Life*, which has further expanded the audience for Vlautin's novels and songs.

The reader thus comes away from these essays with informed and engaging insights into Vlautin's work and the literary and musical influences that shaped his ideas. Adept at "humanizing even the most unlikeable of his characters" (p. 152), Vlautin steadfastly explores themes of rage and hope in the American West, while never forgetting people's basic humanity. It makes for compelling reading and listening.

Kenneth H. Marcus
University of La Verne

All In: The Spread of Gambling in Twentieth-Century United States. Edited by Jonathan D. Cohen and David G. Schwartz. (Reno: University of Nevada Press, 2018), 296 pp.

For decades, sports commentators and enthusiasts declared baseball the nation's favorite pastime. Each season, hundreds of thousands of fans nationwide entered baseball stadiums to witness Hall of Fame pitchers Nolan Ryan and Sandy Koufax throw no-hitters and perfect games. They also witnessed Babe Ruth, Willie Mays, Barry Bonds, and other great hitters shatter home-run records. Over time, the nation's pastime changed to gambling argue authors Jonathan Cohen and David Schwartz. Each year, millions of Americans spend a total of $140 billion gambling at horse racetracks, casinos, and on lottery tickets. The thrill of scratching an "instant win" lottery ticket, getting a royal flush on a video poker machine, or hitting the jackpot on a slot machine enthralls gamblers, all of whom have their visions set on "winning the big one." The problem is the house always wins, often resulting in gamblers going home with empty pockets and wallets. That is the risk gamblers take.

At the same time, there are people who view gambling as immoral and do not partake in it. It is this perceived immorality that often jeopardized gambling's legality, resulting in a pattern of openings and closings of casinos, which is the focus of *All In*. For decades, city fathers and religious figures condemned gambling as the devil's work. It was sinful for Americans to purchase a lottery ticket, gamble at a baseball game, gamble at a racetrack, and drop money into slot machines. Despite cities such as New York and Los Angeles making gambling illegal in the 1920s and 30s, Americans still wanted to gamble. Cities such as Reno, Las Vegas, and Atlantic City built their economies around gambling, a risk in itself, but enormously profitable, especially in the second half of the twentieth century. Mega casino resorts such as Caesars Palace, the Mirage, Bally's, the Bellagio, and other properties annually attract tens of millions of gamblers from different parts of the world, and enjoy billions of dollars in revenues. At the same time, while gaming has increased in popularity, it has not been limited to casinos in Reno, Las Vegas, and Atlantic City, but expanded to Native American reservations, Macau, and online. In ten chapters, contributing authors discuss the history of gambling, and explore the moral dilemma surrounding it through economic, social, political, religious, and other perspectives.

The book's shortcomings are few. In two chapters, contributing authors Larry Gragg and Michelle Robinson briefly address how gaming has enabled thousands of people to build careers around being dealers, cocktail waitresses, pit bosses, managers, and other hotel-casino employee positions. Interviews with some of these workers would enhance the book by providing their perspective on gaming and the enormous empire it has become. Robinson notes how "between 30,000 and 40,000 Clark County residents depended on the casino business for their livelihoods in the 1970s." (p.178) That number has substantially grown as corporations in Reno and Las Vegas built mega casino resorts, as did indigenous tribes resulting in a multi-billion dollar industry. *All In* is a fun and interesting read for historians, other scholars, and gaming industry enthusiasts who are interested in the industry's history, moral dilemma, and future.

Daniel Bubb
University of Nevada, Las Vegas

The Gambler: How Penniless Dropout Kirk Kerkorian Became the Greatest Deal Maker in Capitalist History. By William C. Rempel. (New York: William Morrow, 2018), 414 pp.

Blood Aces: The Wild Ride of Benny Binion, the Texas Gangster Who Created Vegas Poker. By Doug J. Swanson. (New York: Viking, 2014), 355 pp.

Organized crime is often credited with building the gambling industry in Las Vegas, and there is considerable evidence to support this assertion. Prominent mob figures from New York funded construction of the Flamingo Hotel, which opened in 1946. A Cleveland-based crime partnership financed the Desert Inn, which opened in 1950. The Chicago Outfit controlled the Riviera, which opened in 1955. The Cleveland and Chicago syndicates collaborated on the Stardust, which opened in 1958. The list goes on, and the chronology stretches into the mid-1980s. However, it would be inaccurate to suggest that mobsters were the only players in the development of the Las Vegas casino industry. Kirk Kerkorian is a prime example of an entrepreneur who had a profound and indelible impact on Las Vegas while eluding the stain of underworld connections.

Veteran investigative journalist William C. Rempel's biography of Kerkorian, who died in 2015 at age 98, is the first study of the full life of the man who played an instrumental role in the transformation of Las Vegas into an international resort destination. An earlier biography, *Kerkorian: An American Success Story* by Dial Torgerson, was published in 1974, more than forty years before Kerkorian's death.

Rempel had a tough assignment, largely because of Kerkorian's reluctance to make speeches, submit to press interviews, or even appear at public events. The author describes his subject as "one of the least known of America's richest men." (2) But Rempel does the hard work of tracking down and interviewing people who were close to Kerkorian, personally and professionally, creating a full-bodied portrait of the billionaire.

Two dominant threads run through *The Gambler*. First, there is the genuine rags-to-riches tale of a young Armenian-American who dropped out of school in the eighth grade, yet went on to become one of the world's richest and most respected business moguls. Second, there is the philosophy Kerkorian embraced early in his life: "There was no point in placing small bets." (3) Kerkorian was able to overcome his modest beginnings and lack of education by taking big risks that put him in position to build his bank account — and ultimately his empire.

Kerkorian got his start in aviation, first as a pilot and operator of a charter air service in Southern California, then as the owner of a small airline. His frequent charter flights to Las Vegas, where he was a regular at the green-felt tables, kindled an interest in the fast-growing resort town. Although he lost $50,000 on an ill-advised investment in the Dunes Hotel in 1955, he was undeterred and went on to buy property and casinos in Las Vegas. Those early investments set the stage for his greatest contributions to the city, the construction of a series of large and wildly successful resorts: the International in 1969, the first MGM Grand in 1973, and the second MGM Grand in 1993.

Along the way, Kerkorian had to be diligent to steer clear of real or perceived connections to organized crime. For example, when he purchased the Flamingo Hotel, it had been a victim of mob skimming for years. Kerkorian brought in his own people to run the resort, but when he turned a tidy $3 million profit in his first year, the Internal Revenue Service took notice. The Flamingo had made less money in the past when the mob had grabbed its untaxed share from the profits. The IRS wanted to review the business records of the Flamingo's previous owners as part of its investigation of New York crime boss Meyer Lansky, but Kerkorian had not obtained them when he acquired the resort. Suspicious that Kerkorian was withholding potential evidence, the SEC briefly blocked Kerkorian's stock activities.

Rempel carefully details one of Kerkorian's finest moments as a businessman—his actions in the aftermath of the tragic fire at his MGM Grand resort on November 21, 1980. The fire resulted in 85 deaths and 700 injuries. Not only did Kerkorian put other projects on hold to immediately start rebuilding the resort but, ignoring the advice of his financial advisers, used his own money to pay $69 million in cash settlements to the fire victims.

The extent of Kerkorian's philanthropy may never be fully known because he almost always made donations on the condition of anonymity. However, his generosity after the 1988 Armenian earthquake that left 50,000 dead is no secret. Among other contributions, Kerkorian sponsored an airlift of food and supplies to Armenia that was "the largest to any single country since the historic U.S. government-backed Berlin Airlift of 1948-49," Rempel writes. (262)

Kerkorian closed out his business career by acquiring additional gambling properties, creating the monolithic MGM Resorts International that today operates ten large hotel-casinos on the Las Vegas Strip, as well as resorts in Detroit, Michigan; Washington, D.C.; Biloxi and Tunica, Mississippi; and Macau, China.

While Kerkorian constantly strived to keep his distance from anything linked to organized crime, another legendary Las Vegas casino man had no qualms about associating with questionable characters. Although Benny Binion operated on a smaller scale than Kerkorian, his impact on Las Vegas was no less significant.

Blood Aces, the most comprehensive biography of Binion, also is the work of a veteran investigative journalist, Doug J. Swanson of Dallas. Much like Rempel, his biography benefits substantially from his diligence in securing interviews with people who knew and worked with Binion before his death in 1989 at age 85.

One of Swanson's achievements is to make a convincing case that Binion was both a cold-blooded killer and one of the nicest people you'd ever meet. Binion was both a crime kingpin, especially during his years running illegal gambling in Dallas and, during his second life in Las Vegas, a great friend to many and a noted philanthropist. As Swanson puts it, "Benny was the approachable racketeer, the affable killer, the conversational kingpin." (279)

Binion is best known in Nevada as the longtime proprietor of the Horseshoe hotel-casino in downtown Las Vegas. The Horseshoe was a favorite of hardcore gamblers, in part because Binion did not place a ceiling on bets. He also founded the World Series of Poker, which fueled an international explosion of interest in the classic card game. But it could be argued that Binion's life was even more intriguing before his move to Las Vegas in 1946.

Binion started out as a bootlegger during Prohibition, but he soon discovered that gambling was his true calling. First, he controlled the "policy" games — much like a daily lottery — in Dallas's black neighborhoods. His "Southland Syndicate" expanded into dice games in downtown hotels, and he bought a piece of the town's nicest illegal casino.

Death and corruption were key elements of Binion's livelihood in Dallas. In 1931, he killed a black man named Frank Bolding. Claiming self-defense, Binion pleaded guilty and received a two-year suspended sentence. In 1936, he killed a competitor, Ben Frieden. Binion claimed self-defense again and the charges were dropped. In 1940, one of Binion's key associates, Ivy Miller, killed a rival racketeer. Miller was arrested but never tried. Swanson writes that Binion doled out $600,000 per year in "fines" to keep his illegal gambling operations running. It was the price of doing business in a city drenched in political corruption.

After World War II, Binion's criminal domain in Dallas faced a critical turning point with the election of a reform-minded sheriff and district attorney. Their number one target — Benny Binion. With $1 million in cash in the trunk of his car, Binion drove west to Las Vegas.

Swanson writes: "Binion had joined one of the great migrations in American organized crime history — the mob diaspora of the 1940s. They came from New York, Chicago, Cleveland, Los Angeles, Miami, and anywhere else they felt pressure from the competition or heat from the cops. ... It was Manifest Destiny, felony division." (93)

Swanson, also a novelist, combines in-depth research with some devilishly clever lines. For example, in contrast to the suave, pin-striped gangsters from the coasts, "Binion's trousers were perpetually unpressed, and the buttons of his western shirts — made from gold coins — strained at his generous paunch. His hair looked as if it had been cut by the least promising freshman at a failing barber college." (105)

Binion's Las Vegas years are documented in detail, from the opening of the Horseshoe in 1951 to his prison stretch for tax evasion to his pivotal role in bringing the National Finals Rodeo to Las Vegas in 1984. Along the way, Swanson mentions a who's who of Binion's closest friends, including Clark County Sheriff Ralph Lamb, federal Judge Harry Claiborne, and Cleveland syndicate boss Moe Dalitz. "If you wanted to mix with some of the heavy hitters of Las Vegas, you went to lunch at Binion's place," Swanson writes. (267)

The lives of Binion and Kerkorian offer the opportunity to examine Las Vegas history from two different perspectives. Binion represents the men with shady pasts who put their expertise to work building the legal casino business in Las Vegas. Binion was one of many who followed this path, but he definitely was the most colorful and influential. Kerkorian represents the mainstream investors who nudged the mob aside and took Las Vegas to extraordinary new levels. Kerkorian was not alone in this regard — one thinks of Howard Hughes, Bill Bennett, Steve Wynn — but he was the biggest and boldest at times when others could not imagine the size and scope of the Las Vegas we know today.

While Rempel and Swanson have provided a great service with their trustworthy and highly readable biographies, they focus more on storytelling than analysis of how Kerkorian and Binion fit into the larger context of Las Vegas history. Plenty of opportunities remain for research and interpretation that explores the influences and legacies of these iconic figures in Las Vegas and beyond.

Geoff Schumacher
National Museum of Organized Crime & Law Enforcement, the Mob Museum

The California Trail: Yesterday and Today—A Pictorial Journey Along the California Trail. By William E. Hill. (Caldwell, Idaho: Caxton Press, 2017), 343 pp.

This well-crafted guide to the early years of the California Trail, 1848-1868, familiarizes the reader with the Trail's many branches, parallel routes from the major starting places along the Missouri River, to the destination points of Sutter's Fort, Sacramento, and Placerville, and the scores of camping sites in Kansas, Nebraska, Wyoming, Idaho, Nevada, and California between. The book is revised and expanded from an earlier edition and represents thirty-five years of library and archival research and countless miles traveled along what remains of the trails.

Hill provides readers an opportunity to understand history in the contexts of both place and time. The acquisition of California by the United States in its 1847-1848 war with Mexico, and the discovery of gold near Sacramento, encouraged restless Americans and newly arrived European immigrants to head west. Hill's retracing and re-photographing the trails provide ample evidence of changes in landscape and of the reinterpretation of the meaning of the pioneers' dreams.

Inside the front cover is a fold-out map that shows scores of trails and 109 landmarks, forts, towns, springs, and rivers from Missouri to California. Each of these historic sites is described by emigrants who kept diaries or by Professor Hill, or both. The text is organized by nine topical chapters beginning with an overview of both land and sea travel to California, the time it took to travel, and the diseases and hardships of the trails. Chapter Two provides a succinct history of John C. Frémont's mapping of the Great Basin and parts of California in 1841-1844, dramatic disasters, the brief drama of the Pony Express, and relations with the soon-to-be-displaced Native Americans. Chapters Three through Six are brief accounts of the trails by guidebook publishers, emigrants who kept diaries, and artists and cartographers. Although the maps and some paintings do not reproduce well, Hill uses written and visual sources to good effect.

Hill introduces readers to some of the pioneers: J. Goldsborough Bruff, gold-seeker, diarist, and artist; William Henry Jackson, artist and photographer of America for more than half a century; and William M. Quesenbury, an artist who provided sketches and paintings for a pantoscope of mountains, rivers, and mining camps. The sketches and photographs of rivers—the Platte, Green, Humboldt, and others—remind us of their often-forgotten importance to the wagon-bound emigrants.

Chapter Seven, "Pictorial Journey," is the heart of this book. Almost two hundred pages of photographs and explanatory text provide the reader with a vivid glimpse of trail life, beauty, and desolation. Most wagon trains took six to ten months to travel from Missouri to California. Hill compresses the experience using quotations from some of the diaries, and the reader feels the experience through eyewitness accounts and pictures. Hill describes the major departure towns—Independence, Missouri, up the Missouri River through St. Joseph to Council Bluffs, Iowa. He follows the separate trails that converge at the Platte River where some traveled on the North side while others followed the South bank. As the wagon trains approached western Nebraska and the Wyoming border, the emigrants exercised their pareidolic imaginations, naming rock formations—Court House Rock, Jail Rock, Chimney Rock—and further on, in Wyoming, they admired Church Butte, or Cathedral Rock, Castle Rock, and Pulpit Rock.

One weary traveler memorialized his journey with a poem that concludes:

> But when we to the Humboldt came
> It soon with us lost all its fame
> We viewed it as a great outrage
> Instead of grass to find wild sage. (p. 258)

Disappointment found a place beside emigrant dreams when crossing Nevada, which seems to be the place where the guides and pioneers measured most carefully the miles covered in a day.

Professor Hill concludes *The California Trail* with descriptions of forty-eight parks, museums, and historical displays along the trails, including seven in Nevada. A final chapter on "Additional Readings" is helpful, but needs to be supplemented. Dale L. Morgan's 1943

classic, *The Humboldt: Highroad of the West*, is still in print, and there is a new, annotated edition of Sarah Royce's *Across the Plains*, her sharp account of her 1849 journey to California. Hill quotes some women emigrant diarists, but their stories need more attention. My only other criticism is the lack of Native American response to the invasion of an estimated 300,000 settlers. Sarah Winnemucca mentions the terror these invaders caused among the Numa in her *Life Among the Paiutes*, and other sources of indigenous response can surely be found.

Bernard Mergen
George Washington University, Emeritus

Lake Mead National Recreation Area: A History of America's First National Playground. by Jonathan Foster. (Reno: University of Nevada Press, 2016), 176 pp.

History professor Jonathan Foster has written a fascinating history of Lake Mead, the first National Recreation Area in the United States. Taking the analytical approach of environmental history, Foster argues that in 1936 the National Park Service (NPS) took on the nearly impossible task of managing what he calls a "hydraulic society" (5) by providing free and safe access to water-based recreation while conserving water in a desert and providing electricity to nearby urban centers. As demand for all three aspects of this interconnected system increased over the years, the Park Service had to initiate regulations that limited access to and activities in the recreational area. These rules set precedent for the management of National Recreation Areas established after Lake Mead.

Foster traces the history of what was initially called the Boulder Dam Recreational Area from pre-European contact to the twenty-first century, but focuses primarily on the period between 1936 through 2015. He points out that people had lived along the Colorado River for thousands of years and established their own relationships with the waterway. Native Americans had created a balance between their needs for survival and the amount of water available to sustain them. With the arrival of the Spanish began an era that aimed to control nature for the benefit of mankind. During the nineteenth century, Americans who used the river for transportation, commercial, and mineral wealth purposes viewed the waterway from the perspective of profitability and opportunity.

The concept of prosperity contributed in 1902 to the passage of the Reclamation Act and in 1928 the Boulder Canyon Project Act that initially focused on controlling the wild river, flowing water through turbines for the production of electricity, and using the reservoir as a source for irrigation. The public, increasingly convinced that recreation is a basic human right, also had ideas for how they could use the lake. Government officials placed the United States Board of Reclamation in charge of maintaining the dam and gave to the National Park Service (NPS) the responsibility of managing recreation with the mandate that it offer free and safe amusements. Through these decisions, the national government transformed traditional recreation based on the enjoyment of existing natural resources into leisure on a man-made playground.

Between 1936 and 1966, Park Service management of the recreation area established in the public's mind the perception that all water sports, fishing, and camping activities were free, safe, and unregulated. Media coverage, advertisements, and outdoor sports magazines

encouraged millions of Americans to visit the region. The official renaming of the Boulder Dam Recreational Area to Lake Mead National Recreation Area in 1964 only reinforced the recreation aspect and divorced it from the irrigation and electricity purpose.

During the last three decades of the twentieth century, environmentalists, administrators, and competing recreation interest groups made it increasingly difficult for the NPS to provide unregulated amusement. Safety, crime, and accidents became concerns as millions of people came to Lake Mead and brought with them new technology to enhance enjoyment. Boating regulations, a special U.S. Parks Police force, entrance fees, entrance stations, and limitations on hunting as well as fishing to protect native animals were some of the approaches the NPS adopted to address the challenges of overuse, limited resources, and a rapidly changing society.

Changes in the natural landscape, such as prolonged drought and appearance of zebra mussels, coupled with budget cuts during the first decade of the twenty-first century resulted in additional regulations and restricted access to recreation. Foster concludes his study by asserting that the National Park Service will continue to have problems in the future balancing the expectations of tourists with ever diminishing resources.

The author supplemented this well-researched and convincingly argued work with a number of photographs that help the readers to visualize the size and beauty of the region. *Lake Mead National Recreation Area* should be a must read for environmental history students, tourism professionals, and general readers interested in national parks.

Petra DeWitt
Missouri University of Science and Technology

Interwoven: Junipers and the Web of Being. By Kristen Rogers-Iversen. (Salt Lake City: University of Utah Press, 2017), 224 pp.

The natural world is entangled with human history. Natural elements have dictated historical actors in the grand play of life that continues to unfold today. Likewise, in landscapes devoid of some of these elements, nature persists to intervene. *Interwoven: Junipers and the Web of Being* by Kristen Rogers-Iversen illustrates this theme as she attempts to unravel the connections between humans and the polysemous juniper of the arid American West. The juniper, Rogers-Iversen argues, influences and becomes influenced by the world around it which reveals the natural being of humans.

Rogers-Iversen's descriptive writing style illustrates her investigation of eleven characteristics associated with the juniper. Like the juniper's foundations, the first chapter, "Roots," grows to link with topics such as Japanese internment and racism to the survival of American westward pioneers. Rogers-Iversen explains how the Japanese art of bonsai shown by one family suggests links with the natural world and their identity during World War II. Similarly, Utah's battle to recognize the sentimental symbol of the juniper as the state's official tree in opposition to Utah's Cattleman's Association practice of destruction caused conflict between the factions. Rogers-Iversen, however, illustrated the juniper's relevance in the lives of those who neglected to see its value. In contrast, Mormon pioneers as well as Ute Natives, she explains, used their appreciation of the juniper to prosper.

As colorful as Roger-Iversen's writing style is, the images halfway through the book connect the reader with the beauty of the juniper. Glancing over the twenty-four vibrant

pictures allows the reader to join that moment of serenity in which the author is so deeply immersed throughout the book. In this segment, the juniper comes to life as one can see the unique twists and formations of the trunk and its placement in a desolate landscape. Integral to the work, these illustrations provide an element that produce feelings for the reader that link them to the juniper.

In the concluding portion of her work, Rogers-Iversen carries the initial roots of the book's introduction to a broader relationship between humans and the natural world. The web that connects humans with the ecological world is where Rogers-Iversen makes her arguments. The symbiotic relationship between junipers and humans, while not initially clear, reveals itself as a fundamental component to understanding humanity. She situates humans as members of the ecosystem who benefit from their conservative use of the tree and suffer from its destruction. Humans as actors, just as her demonstrations of historical events illustrated, direct the trajectory of this critical organism. Balance and wholeness, *Interwoven* suggests, are the keys to understanding the natural being of humans of the past, present, and future.

This well-written work reflects how academics, students, and people of all backgrounds and occupations can understand nature's integral role in human lives. Countless illustrations and vivid examples of the American West and the juniper allow anyone who is not fond of the region or environment to become enlightened about this unique landscape. Rogers-Iversen's work provides historical elements that offer contextual material for students of environmental and natural history and contributes a message of activism. Like the juniper, the book relates to all who have not encountered it and could awaken those who attend to its interwoven web which connects us all.

Christopher Sudol
University of Wyoming

Faithful and Fearless: Major Howard Egan, Early Mormonism and the Pioneering of the American West. By William G. Hartley. (Holladay, UT: Howard Egan Family Foundation and Brigham Young University Press, 2017), 617 pp.

William G. Hartley's *Faithful and Fearless* is, in many ways, representative of old traditions in Mormon history writing. The story Hartley has to tell is vast and sweeping; it's the classic Mormon narrative of immigrant migration to the United States, the trek west across the great American plains, the settlement of the Salt Lake Valley. Egan was a leading figure in all these grand processes. An Irish immigrant and Mormon convert, he followed Mormon leaders to the city of Nauvoo, Illinois, and then to the Salt Lake Valley, hewing wood and cutting trails along the way. He was involved in military maneuvers as the Mormons readied the Salt Lake Valley against the federal army of Albert S. Johnston sent by President James Buchanan to occupy the territory in 1857 and in later conflicts with Native Americans and with Mormon dissidents. He killed a man who slept with his wife. Toward the end of his life he founded and ran a Pony Express station on the alkali plains of western Utah. He seems the quintessential pioneer.

Hartley tells this story in a traditional narrative fashion, event piling upon event in subheaded section after subheaded section. There is little analysis and only context he believes to be absolutely necessary. In that way the book is reminiscent of the great Mormon tradition of family histories, common among a people with a strong bent for genealogy. Hartley tells us in the beginning that he hoped to write a story "my academic colleagues could respect

and that the general public—Egan descendants among them—would enjoy reading." (42) The volume seems more suited for the latter than the former. Hartley does well in contextualizing the stories of Egan's life that would seem strange or disturbing to a general readership. Egan's calculated murder of James Monroe, who fathered a child with Egan's wife Tamson, for instance, is discussed in the context of the Western tradition of violence and vigilante justice. Egan was acquitted for the crime.

Hartley has written a volume on behalf of the Egan family, and his determination to write a book they can enjoy means that he has not focused on making contributions to scholarly conversations about early Mormon history or the historiography of the settlement of the West. There's little or no discussion of the sorts of themes—colonialism or indigenous peoples—that concern modern Western historians. Hartley also assumes his readers share the sort of familiarity with Mormonism that Egan's family might; he gives only a cursory introduction to Joseph Smith and very little to Mormon institutions like the Quorum of the Twelve Apostles or Mormon scripture like the Doctrine and Covenants; he uses Mormon colloquialisms like "the Lord" in reference to God and "active" for a devout practitioner of the faith. His treatment of the church is generally friendly.

More, Hartley relies on old Mormon history standards. The seven-volume *History of the Church*, produced in the mid-nineteenth century by Mormon authorities, abides by historical standards archaic by today's measure, but Hartley cites it liberally here, as he does a revision and updated version called *The Comprehensive History of the Church* produced in the early twentieth century. These two works were for many years the warhorses historians of Mormonism rode into battle. They have been supplanted by modern scholarship; indeed, the church's own Joseph Smith Papers Project, a massive documentary effort, is among the most useful replacements. That Hartley relies on both so much indicates that his intention is, simply, to tell a story.

Knowing what the volume is, though, the story Hartley has to tell serves its purposes admirably. Howard Egan is an enigmatic and compelling figure; his intersections with so many of the founding events of Mormonism make him as interesting as a shaper of the Mormon past as he is one who experienced it.

Matthew Bowman
Henderson State University

Beebe & Clegg, Their Enduring Photographic Legacy. By John Gruber. (Madison, WI: Center for Railroad Photography and Art, 2018), 221 pp.

You've likely seen some of Lucius Beebe or Charles Clegg's railroad photographs but may not have known it. Beebe and Clegg, partners in life and in their many avocations, were, amongst other things, prolific chroniclers of the changing American railroad scene from the late 1930s up through the 1960s. This book examines specifically the railroad photographic and historical side of Beebe and Clegg's many activities. Contemporary railroad enthusiasts and historians owe a huge debt to the flamboyant and talented couple.

It may seem odd at first glance that something as prosaic as the American railroad in the mid-20th century would have fascinated Beebe and Clegg. Beebe, the older of the two, was born in Massachusetts in 1902. He attended—and was expelled from—both Harvard and Yale. After

a short time writing and publishing poetry, Beebe found his home in journalism. He wrote for newspapers and magazines such as the *New York Herald Tribune*, *Gourmet*, and the *New Yorker*. Beebe was an established journalist of and participant in elite New York café society when he and Clegg met in 1940 in Washington, DC. They quickly became partners in life and work. Clegg, born in 1916, served in the US Navy during World War II. With training from some of the best New York photographers of the day, he became an excellent photographer in his own right and skillfully edited Beebe's rather loquacious prose. Together they reactivated Virginia City, Nevada's *Territorial Enterprise* newspaper in 1952. Today's tourist-oriented Virginia City and indeed all of Nevada owes much to Beebe and Clegg and their decade in the Silver state. But this work, while mentioning the above and placing all of Beebe and Clegg's activities into context, is primarily focused on the railroad photographic legacy of the two.

Beginning in 1938 with *High Iron, A Book of Trains*, Beebe skillfully weaves exemplary photography with captivating captions into books that made trains come alive to readers far more than a journalistic snapshot of the railroads. Not children's books nor business nor trade books, Beebe and Clegg's works were art books, where the art was the railroad photograph. The late 1930s and 1940s was a golden time for photography and photojournalism with magazines like *Life* and *Look* providing high quality photography to a new audience. Beebe and Clegg did the same. The small but burgeoning railroad enthusiast or railfan community of the time was greatly furthered by the many works of Beebe and Clegg but especially the "big four" books of *High Iron*, 1938; *Highliners, A Railroad Album*, 1940; *Trains in Transition*, 1941; and *Mixed Train Daily*, 1947. The final one, *Mixed Train Daily*, was an extraordinarily well researched and photographed book on the rapidly disappearing small short lines of the United States. Railroads that had never before been in the public eye were thrust into the popular spotlight. These four books brought excellent railroad photography and charming history to a wide audience, some of whom would go on to embrace railfanning and railroad photography as a hobby. During their time in Virginia City, the two became enamored with the Virginia and Truckee Railroad and wrote several books about it and the area. These and the later works of the two set the standard by which railroad photography is still judged. Beebe, as might be surmised, loved photographs with action and drama and tended towards three-quarter views of oncoming trains, preferably with a lot of smoke. Clegg on the other hand, embraced the railroad as part of the landscape. Many of his most notable photos show trains dwarfed by spectacular scenery. Beebe and Clegg continued publishing railroad and western history and photo books until the mid-1960s. They also showcased photos from younger and up-and-coming rail photographers, therefore helping ensure the continuation of the railroad photography genre they started.

Beautifully illustrated with some never-before-published photos now in the collection of the California State Railroad Museum, this work is much more than a picture book. The short but well researched and written chapters give an increasingly intimate look at Beebe, Clegg, and the creation of the modern railfan photography hobby. While this work goes into detail about Beebe and Clegg's personal life, their homosexuality and how it impacted their photographic work, especially in such a masculine industry as railroading, it is still an area that needs to be more fully explored. Chapter endnotes, a "Beebeography" and index complete the work. This book will appeal to anyone even casually interested in railroads and railroad history but should also interest photography historians and enthusiasts, and those with a broader interest in the culture of Nevada and the West in the 1940s and 1950s.

Jeff Schramm
Missouri University of Science and Technology

The Bonanza King: John Mackay and the Battle Over the Greatest Riches in the American West. By Gregory Crouch. (New York: Scribner, 2018), 481 pp.

Gregory Crouch's *The Bonanza King* is a well-written biography of John Mackay (1831-1902), a subject treated nine years earlier by Michael J. Makley in the well-sourced, expertly-presented *John Mackay: Silver King in the Gilded Age*. Given that the ink is barely dry on Makley's pages, it is reasonable to ask why another biography of Mackay is needed. Opening Crouch's new book, it is quickly apparent that the goal, here, is very different.

Crouch's *The Bonanza King* is from Scribner, a commercial press that hopes to capitalize on this important subject: John Mackay was the greatest of the Bonanza kings, the Gilded Age men who became multi-millionaires thanks to the wealth of Nevada's Comstock Mining District. Scribner's strategy may work. This is an excellent presentation without citations and bibliography that many in the publishing industry regard as off-putting for the average reader. There are, however, other differences that present concerns.

Problems emerge in the opening pages. Questionable generic descriptions of pre-famine Ireland are more appropriate for the rural counties than affluent Dublin. This was Mackay's hometown for his first ten years before emigrating to New York with his family. Indeed, Makley points out that the few details credited with describing Mackay's life in Ireland are suspect. Much of this early period of Mackay's life must be approached with caution.

Crouch's description of the Irish in America draws heavily on post-famine arrivals; the Mackay family emigrated in 1840, several years before the potato blight ravaged the Emerald Isle. The Mackays certainly faced hardship and challenges, but the situation was far worse for those who followed. A portrait drawing heavily on the cruel circumstance of famine-era emigrants has little to do with Mackay's experience.

Ten years after his pursuit of California gold during the Rush of 1849, Mackay allegedly came to the Comstock carrying "a bedroll, several cooking implements, maybe a change of clothes, and the basic tools of mining—a pick and a shovel and perhaps a sledge and a heavy-handheld drill" (2). Without citations, there is no way to check these details, but they are suspect, and although the words "maybe" and "perhaps" introduce caveats, the entire list of items smacks of speculation. Then we find that Mackay encountered open pit mining, "an entirely different kind than what he'd known in California" (3). Again, this was likely not the case since by 1859 the California gold fields were implementing a variety of approaches including open pit mining, but in the summer of 1859, the Comstock was still at a "diggings" stage that Mackay would have recognized.

All this picking apart of small details seems terribly unkind. Indeed, it would be torturous to go through all the 435 pages of text in this way, but a few more examples are needed. The Bank of California building is on the southwest corner of C and Taylor streets (not the southeast, p. 187), but more importantly, the building did not burn during the fire of 1875, despite the author asserting that the structure was lost (353). While Crouch claims that Mark Twain left the Comstock in 1866, never to return, he did, in fact, visit in 1868 (207). And the cause of the 1869 Yellow Jacket Mine disaster is not fully understood; it is a matter of speculation, and yet Crouch presents it with certainty (245). It is hard to imagine the primary sources from which one could tease out the insights and "facts" that are conveyed throughout. While some things are knowable, much remains a matter of conjecture, and yet Crouch describes Mackay's world with the certainty of a novelist.

Crouch crosses a different line in his description of the Pyramid Lake War of 1860. On page 97, we encounter "some fifty howling Indians" charging a heroic Henry Meredith, wounded and straggling behind during the ill-fated assault on the home of the Native Americans. Only two sentences later, we find Meredith "clutching his shotgun" and raising himself on an elbow,

firing "both barrels at the onrushing, howling Paiutes." That's a lot of "howling," indigenous people to be found in a history written in the twenty-first century. Wolves howl. Dogs howl. But the Northern Paiutes were neither, and during this battle they followed a well-planned, carefully-executed strategy. These warriors were not clichés in a 1950s Western. A little more thought could have been given to the words used to describe a complex struggle that pitted ancestors of modern Nevadans against one another.

In all of this, I yearned for sources to see what Crouch used to justify his portrayal of the past. I like to take a history book apart, opening it from the back as well as from the front to see what is available to the reader. I also follow the citations of a history book to see what liberties may have been taken. When I looked at the back of Crouch's book, I was disappointed to see that there were neither citations nor bibliography. There was an index and a brief list of photographic credits. Three pages of acknowledgements were oddly placed at the end of the text. There were also two pages of a section labeled "A Note on Sources," which opens with the boast that "Virtually every sentence in *The Bonanza King* contains a fact, and the overwhelming majority of those facts come from some primary source" (437). Crouch then explains that the list of citations became too long, and he did not want to burden his book with all that material. Disappointed, I turned to the beginning of the book and began reading.

After one hundred troublesome pages, I was left bewildered about how it would have been possible to justify all the details presented. I began to read Makley's excellent biography of Mackay, side-by-side, to determine what Crouch might have been using, and the result was not flattering to this new publication. Then, in frustration, I turned again to those two pages dedicated to sources at the end of the book—a place most readers would not find until they had finished reading the text. As I read on, I realized my error; the author did, in fact, have citations and a bibliography, not in print but rather posted online. To read this biography while checking sources, then, requires sitting at a computer with book in hand. This publication is likely to outlive the website; the internet is fluid and changes constantly, while books can remain on shelves for centuries. Sadly, *The Bonanza King* must be treated as a book without citations or bibliography because that is the way future scholars are likely to encounter it.

Finding the sources and bibliography online, however, affords a different way to consider Crouch's effort. It seems that the author consistently avoided secondary literature, preferring to consult the primary record, using later histories as road maps to primary sources. Primary sources require extensive evaluation; writers are prejudiced and are not always faithful to the evidence. Without considering the source, for example, an author can end up embracing a nineteenth-century depiction of heroic white defenders against "howling" Indians. Professional historians consider both primary and secondary sources, and they avoid stretching the primary record beyond what it can yield. They tell us how they see the past differently from other historians and how they found new insights that give the reader better ways to consider the past. Crouch does not explain why a book was needed to improve on the recent biography by Makley because there are no new insights. Crouch's effort is, simply, a retelling.

Crouch is a great storyteller, and he weaves his tale as though it were literature. Those who look to his book for an entertaining unfolding of John Mackay, his achievements, and his times may be delighted. Still, innocent readers will finish the book with their heads packed with images and details that a novelist might invent, but historians would shun. Had this been put forward as a historical novel, we could all cheer Crouch for a fine effort. But this is presented as a history—full of "facts." Let the reader beware.

Ronald James
Retired, Nevada State Historic Preservation Officer

San Francisco's Queen of Vice: Strange Career of Abortionist Inez Burns Brown. By Lisa Riggin. (Lincoln: University of Nebraska Press, 2017), 256 pp.

In *San Francisco's Queen of Vice,* historian Lisa Riggin begins by chronicling how young Inez Burns overcomes a destitute childhood marred by the destruction of the San Francisco quake and fire to establish a thriving abortion business replete with impressive social and political connections. With breakneck speed Burns assumed her place among the city's business elite as the "'most respected' of the abortionists," ultimately creating an empire that rivaled all others. Early in the book it becomes evident that Burns's four husbands all undoubtedly benefitted from her financial acumen and influential network. Riggin contends that the "Queen of Vice" operated undetected for a decade until police came to suspect the death of a woman labor leader visiting from New York who died suddenly from so-called pneumonia. Despite the resulting public exposure and three consequent raids, Burns continued to operate her two facilities virtually unscathed. Her customers numbered between twenty to forty women daily at both of her clinics. Burns demanded strictly cash payments from the often desperate women who sought her services. Her lack of formal medical training and a license to practice medicine aside, Inez Burns made millions of dollars by treating tens of thousands of women over the course of her twenty-five-year career. Burns's lucrative business came to an abrupt end with her arrest on September 23, 1945, at her largest clinic on Fillmore Street.

The book's title illuminates only a portion of what it actually entails. Riggin accomplishes her purpose by presenting an engaging account of the power struggle between Inez Burns (aka Inez L. Brown, Inez Brown Burns, Mrs. Brown, Lillian Brown, Dr. Brown, Amy Dutch) and aspiring governor-to-be Edmund "Pat" Brown—but it covers much more. What emerges is the saga of a wider war beginning in the 1930s to bring down an entire vice ring of abortionists, bookmakers, gambling parlors, and brothels—all protected by crooked cops and occasionally unsavory medical personnel.

With scenes from the three grand jury trials of Inez Brown as a backdrop, Riggin documents the attempt by a principled few to confront the rampant graft and corruption in "wide open" San Francisco. Intrigue abounds over the course of investigations, hearings, suicides, murders, and whistle-blowing. In the first pages of the book, the names of characters threaten to overwhelm the reader. But the context is set soon thereafter with a foray into the "facts of the case." The cast of characters includes law enforcement personnel, judges, grand jury members, abortion clinic employees, machine politicians, attorneys, mafiosos, and Internal Revenue Service and Treasury Department agents. Burns is indeed an integral player but so are many others. In short, the title fails to do the book's contents justice.

Riggin's creative talent is obvious in the unique framing of the book. She approaches her work with the finesse of a seasoned storyteller. The reader is often drawn into a pivotal event by a mere mention. One such example is found in the reference to would-be socialite Gloria Shannon's serialized manuscript exposing Inez Burns's entire business. To gain insight into Burns's operation, Shannon, the wife of the ex-supervisor of San Francisco took a job at one of Burns's clinics, thus enabling the prosecution to tap her as a key witness once Burns came to trial. However, the details about the creation of Shannon's manuscript do not surface until several chapters later when an entire portion of the book is devoted to Shannon. Despite the lack of a linear progression of events, this unconventional technique of providing a brief mention first and a detailed explanation much later works well. The technique allows the reader to enjoy a lively account of a complicated story.

Riggin constructs a compelling story of the demise of Burns and virtually anyone remotely associated with her by extrapolating from numerous sources. Among the most insightful pieces of evidence are newspaper coverage, court transcripts, and oral interviews. She also probes personal records when they are available. Perhaps one of the most interesting sources Riggin includes are the records of naval doctor Larry (Loraine) Everson. When the district attorney raided Burns's Guerrero Street mansion, they seized Everson's orange notebook where he had listed names, dates, times, and other incriminating evidence that pointed to the guilty parties. The reader is left to wonder what further incriminating information the unsealing of the records housed at the Bancroft Library in 2028 will yield.

Karen Pastorello
Tompkins Courtland Community College

The Small Shall Be Strong: A History of Lake Tahoe's Washoe Indians. By Matthew S. Makley. (Amherst and Boston: University of Massachusetts Press, 2018), 248 pp.

Matthew S. Makley's *The Small Shall Be Strong* seems, at first glance, like a fairly conventional tribal history. He narrates the story of the Washoe people from before European arrival in the Americas up to the early 21st century. He provides a detailed and engaging account of the history of the Washoe people that draws heavily on Washoe sources. That alone makes the book valuable since there are few historical texts that cover the Washoe in great detail.

However, what makes this book somewhat unconventional is an argument that Makley hid within his tribal history. He argues that one of the reasons it is important to catalog the tribal history of the Washoe people is that they are a small tribe. He asserts that the field of Native American history tends to focus on large tribes who participated in major events and left a large historical footprint, like the Comanche or the Lakota. Their historical significance requires that we understand their past, but a focus exclusively on large and powerful indigenous nations distorts our understanding of Native American history.

Many tribes, like the Washoe, occupied a comparatively small territory and never boasted very large populations. Because many tribes fit this description, their stories are also essential if we want to attain a deeper understanding of the indigenous experience in North America. While Makley's argument will seem counterintuitive to some readers, most will hopefully see that a focus on smaller tribes allows us to gain new perspectives on Native American history while also including the stories of peoples that historians might have overlooked in the past. Therefore, his call for a fresh perspective is very useful and it comes with the added bonus of a solid example of how to tell the story of a smaller tribe.

Bridger Bishop
University of Nevada Las Vegas

CUMULATIVE INDEX - VOLUME 60

2017

COMPILED BY NEW WEST INDEXING

Numbers 1-4 1 - 208 2017

Numbers printed in boldface refer to photographs and illustrations

activism, 6, 14-15
Adelson, Sheldon, 144, 147 n.15
Affluent Society, The (Galbraith), 37
agriculture, 85, 104, 118, 161
Ahmad, Diana L.: review of *Success Depends on the Animals,* 197-98
Airdome, 61, 67, 68, 77, 79; dance at, 60, 75; flag drill at, 62
Akenson, Donald, 105
Albert, Herman, 64
Albright, George, 46
alcohol, 124, 125
Alemany, Joseph Sadoc, 119
American Field Ambulance Service, 62, 66, 68, 75
American Fund to Assist the French Wounded, 60
American Jewish Committee of New York City, 60
American Lake, 65, 70
American Legion, 77
American Library Association, 72
American Military Hospital No.1: 68
American Red Cross, 60, 61, 62, 63, 66, 68, 70, 72, 75, 76, 79
American West, 102, 110, 126, 128, 129; development of, 111; traveling to, 107-8
annexation, 46, 51, 57 n.17
Annual Report (1966), 14
anti-Semitism, 140
Apaches, Salt River project and, 86
Araba, 168, 170 n.5
Arnett, Leonard, 52
Ash Meadow, 86
Ashley, James M., 185
"At Last" (Brissell), text of, 77-78
Atkinson, Mrs. Harry, 63
atomic testing, 141
Auburn Ski Club, 8, 9
Aurora, Nev., 175, 176, 182
Aurora-Bodie toll road, 181, 190 n.29
Aurora Union, 182
Austin, Nev., 24, **25**, 26, 27, 31, 32, 34, 35 n.16, 36 n.21, 155, 176, 183; mines, 25; population of, 23
Austin Brass Band, 27
Auto Club of Southern California, 7
Autobiography (Twain), 36 n.17
automobile, impact of, 6-7
Azalea Lake, 10

backcountry, 5, 6, 9
Bailey, Harlan, 61
bailiffs, duties of, 122
Baker, Charles Duncan (C. D.): article about, 37-58; **38**; civil rights and, 54, 55; convention center and, 46; criticism of, 48-49, 53; growth/expansion and, 40, 42, 43, 51; master plan and, 42, 53; politics and, 54-55; public works and, 50, 56
Baldwin, Alexander W. (Sandy), 29
Ball committee, 33
Balliet, Mrs. Letson, 62, 63
Bank Exchange, 27
Bank of California, 110
Barkan, Elliott, 130 n.2
Bartleson-Bidwell party, 25
Basic Magnesium, 39, 40
Basic Townsite, 39
Basque immigrants, 172 n.45; campaign against, 152-53, 157-64; cattle ranching and, 160; described, 158, 164, 171 n.45; discrimination and, 148; labor by, 159; land/home ownership by, 164; population of, 160; quota for, 168; relationships with, 160, 171 n.29; Restriction Period and, 164-68; restrictions on, 164-65; sheep industry and, 148-72

Bastille Day, 75
Bates, David, 180
Bates, Edward: on Seward, 178-79
Battle of Antietam (Sharpsburg), 180
Battle of Bull Run/Manassas, 189 n.14
Beal, Major, 21
Beatty, Nev., 72, 74
Belcher mine, 113
Belén Gate, 27
Benedict, Mr., 179
Bible, Alan, 54-55, 55
Bidwell, John, 25, 26
Bill of Rights, 140
Binion, Benny, 142
Biscay, 168, 170 n.5
Bishop Gorman Catholic High School, 48
Blakely, Robert, 19
Blasdel, Henry, 187
Blue, Margaret, 74
Blue, Rupert, 76
Blue Cross, 72-73
Blue Diamond, Nev., 91
Boeing 707, first flight of, 47
"Bonanza Kings, The," 110, 132 n.24
Bonanza Village, 53
Booth, Edna, 72
Booth, "Nig," 73
Booth, William, 61, 67, 69, 73
Boulder Highway, 45
"Boundaries of Being a Nevadan: National Reputation and Exceptionalism, The" (Michael Green), 137-47
boxing, 139, 140
Boy Scouts, 9, 75
boycotts, 54
Boyd, Carl, 93, 96
Boyd, Sam, 53
Boyle, Emmet, 75, 77
Brackney, Thomas E., 155
Brissell, Nellie: poem by, 77-78
Brown, Hugh Henry, 59, 60, 62, 73, 79
Brown, J. Ross: illustration by, 28 (fig.), 30 (fig.)
Brown, Joe W., 46
Brown, Marjorie Moore, 59, 60, 62, 64-65, 66, 67, **69**, 70, 72, 73, 78-79; death of, 79; orphan girls and, 69
Bryan, William Jennings, 139
Buchanan, James, 174
Buell, David E., 26, 27
Bundy, Cliven, 141
Bunker, Wendell, 52, 58 n.36
Bunkerville, Nev., 141
Burdick, Marie, 75
Bureau of Indian Affairs, 84, 87, 88, 96
Bureau of Land Management, 141
Burk, Mrs. Hugh, 67
Burke Act (1906), 84
Burroughs, Arthur, 75
Bush, George H. W.: Reagan and, 143
Bushman, Mrs. R. A., 67
Butler, Jim, 59
Butler, Thomas, 21
Butler Theatre, 67, 75, 76, 77
Butte County, Calif., 22, 23, 25, 26

"C. D. Baker and the Modernization of Postwar Las Vegas" (Eugene Moehring), 37-58
"Cabaret Minstrels, The" (show), 62
California Club, 48
California State Assembly, 184
California State Railroad Museum, 116
California State Telegraph, 181
call-box system, 42
"Call of the Ambulance, The," text of, 64
Callan, James J., 119
Caminetti, Anthony, 166
Camp Lewis, 76
camp tenders, pay for, 163
Campfire Girls, 72
"Cannibal Site, The" (show), 62
Cannon, Howard, 51, 55; civil rights and, 54; election of, 142-43
Carpentier, H. W., 181
Carson City, Nev., 24, 25, 32, 60, 100, 111, 114, **114**, 118, 119, 121, 126, 128, 129, 143, 178, 179, 182, 183; arrival in, 108, 110, 117, 176; early history of, 109-10; 120; railroad shops at, 115
Carson City Board of Trustees, 126
Carson Exchange Hotel, 117
Carson Ladies, 32
Carter, Mrs. B. M., 63
Casablanca, construction of, 45
Case, Mrs. Alliene, 73
casinos, 40, 54, 144; construction of, 51
Castillo, Ilee, 86
Catholic Church, 105, 119, 158
cattle industry, 88, 153, 161
Central Pacific Railroad, 108, 114, 116
Chamber of Commerce, 43, 46
Chapman, Mrs. C. E., 72
Chapultepec, 27
Charleston Boulevard, 41, 49, 50
Chicago Tribune, 138, 139
Chico flour, 27
Chico Mill, 26

Chinamen, 100, 121, 128
Christensen, Jon: book review by, 194-96
Circle Park, 49
Cities, Sagebrush, and Solitude: Urbanization and Cultural Conflict in the Great Basin (Dennis R. Judd and Stephanie L. Witt), review of, 194-96
City Council, 128
City Hall, 52
city managers, fiscal reformers and, 51-52
civil engineers, 49
civil rights, 53, 54, 55
Civil War, 125; fund raising for, 18-36
Civilian Conservation Corps (CCC), 8, 39
Claiborne, Harry, 141, 142
Clair Tappaan Lodge, article about, 4-16
Clark, Lewis, 9, 10, 11, 13, 14-15
Clark, Nathan, 4-5, 8, 13, 15
Clark, William, 50
Clark County, Nev., 39, 41, 44-45, 47, 55; convention center and, 46; taxable wealth of, 45
Clark County Commission, 48
Clark County Fire Department, 45
Clark County Flood Control District, 51
Clark County High School, 39
Clark County Regional Flood Control District, 51
Clark County School District, 44, 49, 50
Clay, Cassius M., 176
Clay Battalion, 176
Clay Brigade, 176
Clean-Up Week, 77
Clemens, Molly, 33
Clemens, Orion, 33, 175, 176
Clemens, Samuel Langhorne. *See* Twain, Mark
Clifton, Nev., 26, 27, 35 n.16; population of, 23
Clinton, Bill, 144
Clinton, Hillary, 144
Clonakilty, 103, 107, 111, 118, 121, 129, 130 n.4; education in, 105, 106; famine in, 102
Clonakilty Porter, 125
coal: mining, 162; shortage of, 70
Cole, Cornelius, 186
Colfax, Schuyler, 186
Colorado River, 86, 94
commercialism, 12, 137, 145
Commission for Relief in Belgium, 72, 76
Comstock Lode, 23, 109, 110, 115, 138, 176; discovery of, 111; Hurley and, 111, 113-14
Comstock Sack of Flour, 32
Con Virginia, 110
Conference on Outdoor Recreation, Coolidge and, 8
Conforte, Joe, 142
Conlon, Jack, 142, 143
conservation, 6, 15, 153
Conservation Movement, 150, 151
"Constructing Back Country Wilderness: The Sierra Club and Clair Tappaan Lodge at Donner Summit" (Kimberly J. Roberts), 4-17
convention centers, 43, 46-47, 50, 53
Coolidge, Calvin, 8, 122
Cooper, Bruce, 108, 132 n.21
Cooper Institute, 173, 174
"Cooper Union" speech (Lincoln), 173
Copperheads, 27, 30, 33, 179, 185
Corcoran, Michael, 176
Cork City, 102
Corn Creek, Nev., 91
Corson, May D., 73
Corson, Mrs. M. C., 63
Cottonwood Island, 86
County Cork, 100, 102, 103, 111, 118, 128; education in, 105, 106; leaving, 107
County Roscommon, 117
Cragin, Ernie, 39, 45, 52
Creel, Lorenzo, 93, 96
Crime of '73: 141
Croly, David G., 33
Cross, Roy, 70
Cunningham, Ranger, 10
Curry, Abraham "Abe," 109, 114
Cutler, Ellen G., 33

Daily Alta California, 175-76
Daily Old Piute, 29
Daily Times, 61-62, 65, 68, 72, 75, 76; poem in, 77-78
Daily Union, 32, 33
dairy production, 102, 104
Dalitz, Moe, 144
Dana, Charles A., 177, 189 n.14, 189 n.15
Dase, Mrs. George, 63
Davenport, Odessa, 62, 63, 66, 72, 74
Davenport, Roy, 74
Davis, Jack, 170 n.9
Davis, Mrs. E. C., 72
Dawes Act (1887), 84
Dawson, John L., 185
Dayton, Nev., 29, 31
De Quille, Dan, 29
Deasy, John, 111
Death Valley, 96
DeChene, Anne, 61, 62, 68, 70; death of, 78
Declaration of Independence, 75
Declaration of War, 61
Deep Creek Station, 183
Degan, James J., 61, 63
Democratic Party, 55, 124, 125, 145, 152

Democrats, 159, 186; Copperheads and, 179; pro-Union, 177
Department of Agriculture, 61, 151, 157
Department of Energy, 141
Department of Interior, 150, 151
Department of Labor, 165, 166
Department of Public Works, 41
Derry, 124
development, 41, 42, 43, 44, 48; water, 40
DeWitt, Chris, 116
Didat, Madeline, 60
Diddle Slope, 10
Dilworth, George L., 72, 77
discrimination, 149, 169; gender, 140; racial, 54, 140
Diss, Jerome, 61
District of Nevada, 122
divorce, 135 n.58, 138, 140, 158
Doble, John, 29, 36 n.24
Doble's Journal and Letters from the Mines (Doble), 36 n.24
Dole, Robert, 144
Donnelly, James S., 103
Donner Ski Ranch, 11
Donner Summit: article about, 4-16; Sierra Club and, 4, 9-10, 11
Donner Summit: a Brief History (Powell), 8
Dowling, P. J., 131 n.12
Drabelle, Dennis, 132 n.24
Drago, Harry Sinclair, 168
Drew, Stephen, 116
drought, 100
dry farming, 90
Dumont, Alice, 61, 63

Eagle Valley, 109, 176
Eagles, 55
Earl, Phillip I.: article by, 59-82
Easter Rebellion, 60
Eckert, Thomas T., 180, 190 n.21
economic growth, 48, 78, 94, 151
economic power, 37, 145, 149
education, 15, 102, 105-7, 131 n.12
Edwards, Jerome, 140
Eight Mile station, 183
Eisenhower, Dwight, 48
El Dorado Canyon, 86
El Dorado County, Calif., 26
Election Day, 49, 181
Electoral College, 179, 180, 182, 183
Elko County, Nev., 55; Forest Service and, 141
Elks, 55, 77
Elks Lodge, 67
Ely, Nev., 183
Ely, Thomas, 21
Emancipation Proclamation, 177, 185
Emergency Quota Act, 167
emigrant trains, described, 108-9
Emmons, David M., 130 n.2
English, James E., 186
Ensign, John, 143
environmental concerns, 15, 96
Errett, Mrs. S. S., 63
Esmeralda mines, 176
exceptionalism, article about, 137-47
Executive Committee, 62

Fair, James G., 110
Fair Board, establishment of, 47
Fallon, Nev., 165
famine, 102, 103
"Fancy Dress Ball," 32
Farrington, Edward Silsby, 122, 123, 135 n.63
Fatherless Children of France, 60
FBI, 141, 142
Federal Court, 123
Ferguson, P. G., 21
Fessenden, William P., 179
FHA, 44, 45
fire service, 42, 45
First Liberty Loan Campaign, 62
First National Bank, 68
Fisher Construction, 49
Fitzgeralds, 43
Flag Day, 62
Flamingo Hotel, 39, 45
Flannigan, J. M., 150
Flood, James C., 110
flood control, 51, 97, 157 n.32
Flora Lake, 10
Foley, Roger D., 141
Following the Grass (Drago), 168
Foner, Eric, 145
Fontainebleau, 44
food conservation directives, 70, 79, 166
Food Waste Bulletin, 61
Forbes-Lindsay, C. H., 85, 86
Forest Organic Act, 150
Forest Reserve Manual, 151
Forest Use Act, 150
Forney, John W., 182
Fort Churchill, 178
Fort Hall, 84
Fort Kearny, 189 n.9
Fort Lewis, 65
Fort Mohave, 87
Fort Mohave School, 87

Fort Sumter, 176
Fourteenth Amendment, 145
Foxley, Curtis: book review by, 197-98
Franklin, George: on Baker, 48-49
Franklin Square, 187
Freas, General, 21
free range, problems with, 149-52
Frémont, John C.: on Southern Paiutes, 138
Fremont Street, 42, 53, 54
Frogley, Ken, 43
Fuel Administration, 62, 70
Funsten, James, 84, 85, 88

Galbraith, John Kenneth, 37
Gallagher, Joseph, 119
Galling, Mrs. A. T., 70
Gamble, James, 181
"Gamblers, The" (show), 62
gambling, 40, 46, 138-39, 140; dependence on, 145; mob and, 48; openness to, 135 n.58; tourism and, 47
Gaming Control Commission, 47
Ganson, John, 186, 189 n.15
Garfield, Harry A., 62
Garside, Frank, 75, 76
General Land Office, 26, 150, 151
General Mills, 36 n.18
General Motors, 144
Genoa, Nev., 109, 196
Gilded Age, 125
Gipuzkoa, 168, 170 n.5
Girl Scouts, 75
Girls High School Quartet, 62
Gladstone, William, 124
Glass, Mary Ellen, 125
Glendale, Nev., 91
Globe, 186
gold, 25; mining, 109, 111
Gold Hill, Nev., 29, 30, 31, 111
Gold Hill News, 181
Gold Rush, 26, 35 n.5
Golden Nugget, 48
Goldsmith, Julius, 63
Gould & Curry, 31
Grafious, Mrs. H. L., 75
Gragson, Oran, 52, 53, 54, 58 n.41
Grand Army of the Republic, 73
Grass Valley, 155
grasshoppers, 91, 93, 96, 97
grazing, 88, 151, 152, 156; sheep, 150, 161
grazing fees, 153, 157
grazing lands, 149, 155
Great Basin, 23, 149, 158
Great Depression, 11, 124, 134 n.51; culture of, 14
Great Rotten Borough, The, 140
Greathouse, H. S., 70
Greeley, Horace, 34, 173, 174, 177, 189 n.14
Greeley, William B., 155
Green, Benjamin F., 109
Green, Michael: article by, 137-47
Green Felt Jungle, The, 140
Greenspun, Hank, 48, 50, 55, 142
Gridley, Amos, 19, 22
Gridley, Clara: birth of, 22
Gridley, Ruel Colt: article about, 18-36; combat experience of, 21-22; illustration of, 28 (fig.); spelling of, 35 n.2; Twain and, 19, 23-24, 27, 29
Gridley, Sarah Ann (Sally), 19
Gridley, Susan Snyder: marriage of, 22
Gridley sack of flour, 29, 32; auction of, 30 (fig.)
Gridley Store, **25**, 26, 27
Grier, Harry, 77
Grigsby, Edward S., 62
Grigsby, Helen Richardson, 62, 63, 64-65, 66, 67, 68, 75; Blue Cross and, 72-73; Tonopah Ambulance Regiment and, 73
Grub, Peter, 10
Guild, James H., 181

Hamlin, Hamilton, 182
Hanby, Lenore, 61, 62
Hannibal, Mo., 18, 19, 22, 29, 33
Hannibal Methodist Episcopal Church, 22
Hannibal Rangers, 19
Harmon, Mella Rothwell: book review by, 191-93
Harpers' Monthly, 36 n.21
Harris, Mrs. E. C., 72
Harvey, Hank, 183
Hatfield, Portia, 61
Hay, John, 180
Hays, Samuel, 149
Hecox, Russell, 67
Henderson, Nev., 39, 55
herders, pay for, 163. *See also* sheepherders
Herford, William R., 66, 68
Herrick, Anson, 185, 189 n.15
Herrick, Hamas S., 27
Hess, Harry: photo by, 85, 92, 95
Hetch Hetchy dam, 6
Higby, William, 184, 190 n.34
Hildebrand, Joel, 8, 9
Hobart, William W., 23, 27
Hodgson, Ranger, 10
Holbrook, Charles, 26
Holliday, J. B., 190 n.38

Holliday, Lallie: pass for, 190 n.38
Home Rule, 124
Home Service Section of Civilian Relief, 75
Homsey, George, 13, 14
Hoover Dam, 141; construction of, 39-40
Hoover, Herbert Clark, 62
Horsford, Steven, 144
Horton, Gadora, 63
hotels, building, 37, 43, 51
House of Commons, 124
House of Representatives, 177, 184, 185, 187
Hoyt, Henry M., 72
H.R. 3321: 161
Huffman, Wendell W., 115, 116
Hulse, James: on judicial authority, 122
human rights, 137
Humboldt River, 23
Humphrey, Hubert, 142
Hurley, Catherine, 111
Hurley, Denis: as bailiff, 121-23; **101**, economic state of, 118, 134 n.51; family of, 110-11; homeownership by, 117; immigration of, 102, 103, 107-8, 109, 110, 131 n.18; letters of, 100-36; 127; politics and, 123-25, 125-26, 128-29; Prohibition and, 124; as teacher, 105-7
Hurley, John, 102, 105, 111
Hurley, Kate (sister), 102, 111
Hurley, Kate Scannell (sister-in-law), 111; photo of, 112
Hurley, Margaret Burke, 117, 118
Hurley, Mary, 102, 111
Hurley, Michael, 102, 107, 110, 114; mining and, 113
Hurley, Timothy (brother), 102, 111, **112**, 119
Hurley, Timothy (father), 102, 106, 130 n.5
Hurley gravesite, **128**
Hurley home, **103**
Hutchinson Lodge, 10, 13, 15

immigrants, 145; Armenian, 165, 166; Euro-American, 96; Irish, 102, 110, 128, 129, 133 n.30; Romanian, 165, 166. *See also* Basque immigrants
immigration, restrictions on, 164, 165, 166, 167
Immigration Act (1917), 165, 166
Immigration Act (1924), 168
Immigration Act (1965), 168
Immigration and Naturalization Service, 165
immigration quota numbers, 167 (table), 168
Independence Day, 75, 178
Indian Reorganization Act (1934), 84
Indian Springs, Nev., 91
industrialism, 8, 145
influenza epidemic, 76, 77
Innocents Abroad (Twain), 34
Interstate Highway Act (1956), 50, 56
Interstate 15: 43, 50, 53, 54, 55, 58 n.41
Irish, 102-5
Irish Civil War, 124
Irish Free State, 124
"Irish Immigrant in the Wild West: The Letters of Denis Hurley of Carson City, Nevada, 1873-1938, An" (Bryan Lamkin), 100-36
irrigation projects, 153

Jacobs, Henry, 23, 27
James, Frances, 66, 67
James, Henry, 66
James, Ronald M., 145
Jarbidge Shovel Brigade, 141
Jet: The Weekly Negro News Magazine, 58 n.42
Jim Crow, 54, 58 n.42
Johnson, Andrew, 179
Johnson, Lyndon, 54, 142
Johnson-Reed Act (1924), quota numbers and, 168
Johnson's Island, 190 n.38
Jones, Cliff, 44
Judd, Dennis R.: review of *Cities, Sagebrush, and Solitude: Urbanization and Cultural Conflict in the Great Basin,* 194-96
Junior Blue Cross, 73
Junior Red Cross, 70

Kaplan, Sidney, 36 n.29
Kayle, Frank, 63
Keane, Bishop, 135 n.57
Keddie, William A., 165
Kefauver, Estes, 48, 140
Kelley, Edward D., 151
Kelly, Michael, 35 n.9
Kendall, Mrs. Zeb, 63
Kennedy, A. H., 41, 52
Kent, Eugeni, 190 n.34
Kentucky State Constitution, 190 n.38
Kiely, Father, 119
Kilkerranmore, 111
Kimshew Township, 22, 26
Kind's Furniture Store, 62
Kirchen, Ann, 63
Kirchen, John G., 63, 68
Kiwanis, 55
Klinger's Variety Store, 67
Knack, Martha: work of, 95-96
Knights of Columbus, 119
Koch brothers, 144

La Historia de los Vascongados en el Oeste de Los Estados Unidos (Silen), 171 n.45
labor, 85, 97; agricultural, 149; Mexican, 166; pay for, 163; realities, 130 n.2; wage, 95, 96

lace making, 91
Ladies Liberty Loan Committee, 62, 68, 76, 79
Ladies of Carson City, 32, 33
Lady in Boomtown: Miners and Manners on the Nevada Frontier, 60
Laird, James L., 24, 33
Lake Mead, 40
Lake Placid, 8
Lake Tahoe, 129
Lake Tahoe's Rustic Architecture (Peter B. Mires), review of, 191-93
Lamkin, Bryan: article by, 100-36
Land League, 124, 136 n.71
Land Revision Act (1891), 150
land-use disputes, 149
Lane, Franklin, 61
Lange, Robert, 145
Langwith, J. A., 160
Las Vegas, Nev.: annexation by, 46, 51; boycott of, 54; growth of, 41, 42, 44, 49, 140, 141; master plan for, 42, 49, 50, 53; modernization of, 37-58; Paiutes in, 84, 86, 87, 91, 93, 95, 96, 97; population growth for, 41, 42, 44, 49, 50, 52, 56; segregation in, 54, 58 n.42
Las Vegas Convention Center, 46
Las Vegas Culinary Union, 144-45
Las Vegas Downs, 46
Las Vegas Paiute Tribal Archives, 84
Las Vegas Review-Journal, 40, 48, 55
Las Vegas Sands, 144
Las Vegas Sun, 43, 50, 142; Baker and, 40, 48
Las Vegas Taxpayers' Association, 52
Las Vegas Valley Water District, 40, 55
Last Indian Uprising, Basques and, 170 n.16
Lawrence, Mrs. C. T., 68
Laxalt, Paul, 142, 143, 144
Layman, Joseph D., 72
League to Enforce Peace, 60
Leisure Hour Club, 60
Lemhi Fort Hall, 84
"Lend-a-Hand-to-Wilson Leagues," 61
Leupp, Francis, 84, 86
Lever Food and Fuel Act, 62
Lewis, David Levering, 145
Liberty Loan, 62, 68, 73, 76
"Liberty Loan Mother Goose Rhymes," text of, 74
Lincoln, Abraham, 26, 33, 125, 145, 180, 188, 189 n.10, 190 n.30; assassination of, 173, 189 n.15; "Cooper Union" speech and, 173, 174; election of, 181, 182; McClellan and, 185; Nevada statehood and, 177, 178-79; pass by, 190 n.38; State of Nevada and, 182, 183; support for, 176
Lincoln (movie), 190 n.38
Lindsay, Anna G., 75
Lindsay, Mrs. Thomas, 67, 72
Lindsay, Tom, 75
Littlejohn, DeWitt, 176
Live Wire Fund, 43
livestock industry, 153, 155, 156, 160, 162
Lodge Committee, 10
Lone Mountain Cemetery, **128**
Lord, Holbrook & Company, 26
Los Angeles Times, 143
Lotchin, Robert, 141
Lovejoy, John K., 29
"Lovelock Baby, The," 60
Loyalty Day parade, 61
lumber industry, 7

Mack, Effie Mona, 24
Mackay, John W., 110
Male National School, 106
Malon, George "Molly," 51
Maloney, Father, 117
Manifest Destiny, 137
Manogue, Bishop, 119
Mapes Hotel, 43
Mare Island Navy Yard, 72
Marette, Dorothy, 64
Marion County, Nev., 19, 22
Marion Guard, 19, 35 n.5
Marion Rangers, 35 n.5
Mark Twain of the Enterprise (Smith), 36 n.21
"Mark Twain, Ruel Gridley, and The U.S. Sanitary Commission: Raising Funds to Aid Civil War Soldiers" (Robert E. Stewart), 18-36
Maryland Irish Secessionists, 176
Maryland Parkway, 49
Masonic Building, 75
master plan, 42, 49, 50, 53
Masto, Catherine Cortez, 144
Mayberry, Mrs. James, 72
McAfee, Guy, 48
McCarran, Patrick, 140, 166; Baker and, 48; **139**, death of, 139; growth and, 141
McCarran Airport, 47, 49, 55
McClatchy, 143
McClellan, George, 179, 180, 185
McCoun, Albert Sidney, 175
McCulloch, Frank, 143
McDermitt, Nev., 148
McDonald, Joe, 140
McGregor, Elizabeth, 66
McNamara Mining Company, 68
McPherson, Edward, 182
Mergen, Bernard, 8

Meritt, Assistant Commissioner, 96
Metropolitan Police Commission, 174, 175
Metropolitan Police Force, 174
Mexican War, 23, 27
Mexicans, 121, 166
Michel, Polly: article by, 83-99
Mighels, Ella Sterling, 181
Mike, Daisy, 87
Miller, Kerby, 130 n.2
Millers, Nev., 72, 74
Miners' League, 178
Miners' Union Band, 66
mining, 95, 109, 122; corporate, 113; dependence on, 145; fights over, 146 n.8
mining camps, 95, 176
mining industry, 110, 161
Mint, 43
Mirabelli, Phil, 41
Mires, Peter B.: review of his *Lake Tahoe's Rustic Architecture,* 191-93
miscegenation, 32
Miscegenation Society, 32
Miscegenation: The Theory of Blending of the Races, Applied to the American White Man and Negro, 33
Mississippi River, 18, 19, 108
Missouri River, 108
Mitchell, Helen, 73
Mizpah Hotel, 66, 67, 68
Moapa, article about, 83-97
Moapa Agency, 84
Moapa Reservation, 87, **89**, 90, 91, 96, 92
Moapa River, 90
mobsters, 48, 140, 142
modernization, article about, 37-58
Moehring, Eugene: article by, 37-58; review of his *Reno, Las Vegas, and the Strip: A Tale of Three Cities,* 194-96
Monitorial Exams, 106
Moore, "Flippy," 73
Moore, Grace R., 72
Moore, Mrs. Sydney, 60
Moreno, Richard: on Carson City, 110
Mormon Station, 109
Mott, Gordon N., 183, 190 n.30, 190 n.32
Moulin Rouge Hotel, 53
Mt. Charleston, 86
Muddy River, 86, 87, 93
Muir, John, 6, 7, 169 n.3
Murtaugh, Superintendent, 87, 88, 89, 90, 97
Musser, John J., 109
Mustang Ranch, 142
Myers, Herbert, 86
NAACP, 54
NARA, 189 n.24, 190 n.34
Nash, Roderick, 8
Nation, The, 144
National Forests, 149, 150, 151, 152, 168; enlargement of, 153, 155-57
National Ski Patrol, 11
National Surgical Dressing Committee, 70
National Union Party, 177
National Wool Growers Association (NWGA), 162, 163
National Wool Growers, 162, 163
Native Americans, 85, 138
nativism, 152
Navarre, 168, 170 n.5
Nebraska Territory, 175
Nellis Air Force Base, 39, 40, 55
Nelson, Nev., 86
Net, The (magazine), 74
Neth, Mrs. Arthur, 63, 66, 67
Nevada Constitution, 179, 181, 183
Nevada Constitutional Convention, 179
Nevada Enabling Act, 177
Nevada Gaming Commission, 143
Nevada National Forest, 157
Nevada Railroad Museum, 116
Nevada State Assembly, 39
Nevada State Journal, 117, 140
Nevada State Legislature, 60, 155, 188
Nevada State Museum, 117
Nevada State Railroad Museum, 115
Nevada statehood, 177, 178-79, 189 n.1
Nevada Supreme Court, 122
Nevada Tax Commission, 47
Nevada Territorial Legislature, 24, 179
Nevada Territory, 18, 24, 29, 31, 32, 174, 178, 180, 183
Nevada Test Site, 141
Nevada Theater, 117
New Deal, 50, 55
New York (magazine), 144
New York Assembly, 176
New York City, 41, 108
New York City Police Commission, 174, 175
New York Irish Unionists, 176
New York Public Library, 35 n.3
New York Sixty-Ninth Infantry, 176
New York Times, 177
New York Tribune, 34, 173
New York World, 33
Nickel, Douglas R., 7
Nicolay, John G., 175, 181
Norcross, Frank Herbert, 122, 123
Norden *Newsletter,* 13

Norden store, 5, 10, 14
North Las Vegas, Nev., 39, 44, 56
Norton, Liss, 21
"Notes and Documents: Nevada and the Thirteenth Amendment" (Robert E. Stewart), 173-90
Notti, Robert, 52, 58 n.36
nuclear waste repositories, 141
NWGA. *See* National Wool Growers Association
Nye, Arabella Dupree Hays, 175, 177, 189 n.8
Nye, James (father), 175
Nye, James Warren, 32, 178, 179, 189 n.7; confirmation of, 175-76, 189 n.8; described, 175-76; election of, 188; Lincoln and, 174; Seward and, 174, 180-81
Nye, John, 175, 189 n.8
Nye, Mary, 174
Nye, Thankful Crocker, 175
Nye, Thomas C. (Tom), 175, 189 n.8
Nye and Ormsby County Bank, 118
Nye County, Nev., 74, 77, 187; flu in, 76
Nye County Board of Health, 77
Nye County Commissioners, 76
Nye County Council of Defense, 75
Nye County Home Service, 175

Obama, Barack, 144
O'Brien, William S., 110
Odd Fellows Hall, 67
Official Register of the United States, 123
Old Piute, 29
Old Spanish Trail, 138
open range: campaign against, 152-53; problems with, 149-52
Ormsby, William, 109
Ormsby County, Nev., 126, 36 n.28
Ormsby County Sanitary Commission, 33
Ormsby House, 143
Oroville *Butte Record,* 22
O'Sullivan, Mary Ann: marriage of, 111
Ott, John, 7
Overland Mail Company Stage, 23, 183
Overton, Nev., 87, 88, 92

packer, term, 116
Pahrump, Nev., 86, 91
Pahrump Valley, 91
Paiutes: agriculture and, 88; article about, 83-97; labor of, 83, **85**, 93, 95, 96, 92, 95; report on, 89
Pamela, 29-30, 31
Panic of 1893: 116
Paradise Road, 44, 46, 47
Parker, Arthur C., 94
Parnell, Charles Stewart, 124
Patio Hotel, 43
"Patriotic Night," 61
"Patriotic Sacrifice" (cartoon), 71 (fig.)
patriotism, 8, 65, 75, 141, 158
Paul, Almarin B., 30, 31
Pearre, Geo. A., 184
Peck, Addison S., 182
Peed, George, 75
Pendleton, George, 185
Phillips, W. C., 35 n.16
Pierrepont, Edwards, 189 n.7
Pierson, 176
Pilgrims of the Vertical: Yosemite Rock Climbers and Nature at Risk (Edward Taylor), 7-8
Pinchot, Gifford: Conservation Movement and, 151
Pioche, Paiutes in, 86
Pioneer Stage, 32
Pittman, Key: **139**, Basque community and, 148, 152-53, 157, 159, 160, 162, 163; Forest Service and, 156; immigration restrictions and, 166; labor shortage and, 165; National Forests and, 155, 157; 154; range issues and, 168; sheep industry and, 148-72; tariff bills and, 160-61; woolgrowers and, 162
Pittman Silver Act (1923), 78
Placer County, Calif., 175
Placerville, 26, 36 n.21
Plum, Nathaniel, 22, 23
politics, 5, 15, 39, 123-25, 125-26, 128-29, 136 n.70, 142-43
Polk, James K.: cavalry call by, 19
Pony Canyon, 23, 26
Pony Express, 23, 175
Pony Mine, 23
population growth, 41, 42, 44, 49, 50, 52, 56, 141
Post Office Department, 74
Powell, Margie, 8
Presbyterian Church, 75
preservation issues, 6, 10, 13, 14-15, 60
Proclamation of Neutrality, 60
Proctor, Francis "Frank" M., 109, 187
Progressive Movement, 125
Progressives, Conservation Movement and, 150
prohibition, 123, 124, 125
Prohibition Act, 123
prostitution, 140
public domain, 5, 149, 151, 152, 161; reorganization of, 150
public works, 41, 50, 53, 56
Puritans, 137, 140
Putney, Clifford, 8
Pyramid Lake, 150
Pyrenees Mountains, 162, 168
Pythian Sisters, 61, 73

Quinn Canyon Livestock Association, 156

railroad shops, **114**, 115
railroads, 7, 115, 121; travels on, 108-9
Ralls, John, 21, 22
Ranch Homestead Act (1916), 168
Rancho Arroyo Chico land grant, 25
range issues, 149, 150, 168
Ratcliff, Walter, 9
Ray, Ryder, 67
Raycraft, James A., 125
Reagan, Ronald, 142, 143
Rebeccas, 61, 73
recreation, 6, 12, 13-14
Recreation Board, 47
Red Cross Auxiliary, 62
Reed, James A., 159, 160
Reese River, 23, 25, 34, 35 n.16, 176
Reese River Reveille, 23, 24, 33
Reid, Harry, 138, 144
Reid, John T., 60
religion, 118-19, 121, 158
Reno, Nev., 37, 43, 78, 114, 115, 116, 117, 118, 119, 121, 157, 158; growth of, 140, 141
Reno (locomotive), 116
Reno Evening Gazette, 61, 78, 117, 157, 158, 164; on Basque sheepherders, 163
Reno, Las Vegas, and the Strip: A Tale of Three Cities (Eugene Moehring), review of, 194-96
Reno Weekly Gazette and Stockman, 150
Republican National Convention, 174
Republican Party, 125
Republicans, 183, 186
"Resistance to the 'Hoofed Locusts': Key Pittman, Basque Immigrants, and the Sheep Industry of Nevada, 1910-1920" (Iker Saitua), 148-72
resorts, 54, 56; building, 7, 44-45, 50; mob and, 48
resources, 11; natural, 6, 150; timber, 150
Restriction Period, 164-68
Revert, Mrs. Paul, 63, 72
Revised Laws of Nevada, 122
Richards, C. J., 77
Richards Mercantile Building, 63, 65, 66
Rio Grande, 21
Rippingham, Gertrude, 61
Riviera Hotel, 43, 45
Roberts, Kimberly J.: article by, 4-17
Robinson, Al, 21
Roosevelt, Franklin D., 125, 139
Roosevelt, Theodore: Conservation Movement and, 151
Rose Polytechnic Institute, 39
Rosscarbery, 111
Rotten Borough, 125
Roughing It (Mark Twain), 19, 34, 35 n.2, 35 n.4, 36 n.21
Round Mountain, 72, 74
Rounthwaite, George, 41, 52
Rowley, William, 151
Russ House, 183
Russell, Charles, 47, 55
Russell, John, 39, 48, 52
Rye Patch, 74

S No. 16. *See* Senate Joint Resolution 16
Sabal Estate and Sheep Company, 155
Sacramento Bee, 143
Sacramento Daily Union, 26, 185
Sagebrush Rebellion, 141
Sahara, 100
St. Clair, James A., 187
St. Louis Fair, 30
St. Mary's Catholic Church, 119
St. Patrick's Church, 61
St. Patrick's Day, 107, 124, 125
St. Teresa's Catholic Church, 119, **120**
St. Thomas, Nev., 86, 87, 88, 91
St. Thomas Aquinas Cathedral, 158
Saitua, Iker: article by, 148-72
Salt River project, 86
Salvation Army, 76
San Francisco, Calif., 8, 31, 33, 36 n.24, 50, 68, 75, 78, 79, 110, 117, 121, 175, 183
San Francisco Diocese, 119
Sanchez, Col., 21
Sanchez, Nellie, 87
Sandalls, L. B., 90, 90-91, 92, 93, 96
Sandoval, Brian, 144
Sanitary Commission, 32, 33, 34
Sanitary Fair, 32
Sanitary Fancy Dress Ball, 32
Sanitary Fund, 27, 29, 30, 31, 32; illustration about, 20 (fig.)
"Sanitary Sack of Flour," 18, 19, 24
Sanitation District, 45, 46
Santa Cruz de Rosales, 22
Santa Fe Battalion, 21
Santa Fe *Republican,* 21
Santa Rosa de Rosales, 21
Saratoga Sports Book, 48
Sawyer, Grant, 47, 55, 142-43
Schrepfer, Susan R., 6
Searchlight, Nev., 86
Sears, Millicent, 72
Second Liberty Loan, 68
Second Regiment of Missouri Volunteers, 19
Secretary of Agriculture, 151, 156
Secretary of Interior, 151
Secretary of Labor, 16, 166
segregation, 54, 58 n.42

Selective Services, 123
Senate Joint Resolution 16 (S No. 16), 183, 184, 185, 187
Senate Lobby Investigation Committee, 159
senators, election of, 188
Sennett, Beth, 96
Serbian Red Cross, 60
Seventeenth New York Militia, 174
sewage plants, 45, 55-56
Seward, William H., 173, 175, 178-79; Lincoln and, 174; Nye and, 180-81; Thirteenth Amendment and, 190
sewers, 41, 45, 46, 50
sexism, 144
Sheehan, Jerry, 163
sheep industry: Basques and, 148-72; campaign against, 152-53; demeaning, 161-62
sheepherders, 149, 159, 160, 161, 163, 165, 168; campaign against, 152-53; murder of, 150; pay for, 166; range conflicts and, 150; tramp, 156, 157
"Sheldon Adelson Is Ready to Buy the Presidency" (*New York*), 144
Shepperson, Wilbur, 145
Sherman Anti-Trust Act, 152-53
Sherwin, Mrs. J. W., 62, 63
shortages, 40; fuel, 59, 70; labor, 165, 166
Shoshones, 84
Siberia (steamship), 107
Sierra Club: article about, 4-16; civic responsibility and, 11; Donner Summit and, 4, 9-10, 11; educational efforts by, 14; Forest Service and, 8; political engagement by, 15; preservation and, 6, 13; recreation and, 13; ski lodge and, 6, 12
Sierra Club *Bulletin,* 11
Sierra Nevada, 25; as recreational zone, 6
Signal Hill Warming Hut, 10
Silen, Sol, 164, 171-72 n.45, 172 n.45
silver, 25, 59, 78, 111, 146 n.8
Silver Age, Twain and, 24
Silver City, Nev., 29, 31
Silver Party, 125, 152
Silver State, 160
Simmons, Mrs. Jesse, 63
Singer Agency, 68
"Sisters All: Tonopah's Women Go to War, 1914-1918" (Phillip I. Earl), 59-82
Sixty Minutes, 143
ski areas, 9-10, 11, 12
ski lodges, 6, 9
skiing, 5, 9, 12, 13-14, 15
slavery, 173, 184, 185; prohibiting, 174, 186
Smith, Henry Nash, 36 n.21
Smith, Jack, 61
Smith, Jules, 67
Smith, Katherine, 68, 70
Smith, Mrs. R., 75
Smoot, Joe, 46
Snow Sports Committee (Sierra Club), 9
Snyder, James, 169 n.3
social life, 14, 158, 164
Soda Springs, Calif., 8, 9
Sollender Building, 66
Soroptimist Club, 49
Southern Nevada Telephone Company, 52
Southern Pacific Railroad, 116
Southern Paiutes, criticism of, 138
Space and Place: The Perspective of Experience (Yi-Fu Tuan), 5
Spanish Flu, 76, 77
Sparks-Harrell Cattle Company, 170 n.9
Sperry Co., 36 n.18
Spielberg, Steven, 190 n.38
Spring Mountains, 86
Squaw Valley, 10
Standard Metropolitan Statistical Area (SMSA), 41
Stanton, Edwin, 189 n.14
Starr, John F., 189 n.15
State Department, 179
State Gaming Control Board, 47
statehood-enabling acts, 177
Stevenson, Robert Louis: on emigrant trains, 108-9
Stewart, Helen: Paiutes and, 91
Stewart, Mrs. J. Wesley, 68
Stewart, Robert E., article by, 18-36, 173-90
Stewart, William M.: election of, 188
Stille, Charles J., 35 n.3
Stitt, Charles J., 65
Stock Raising Homestead Act (1916), 153
stock-raising labor, daily wage/hours of, 167 (table)
Storey County Sanitary Commission, 30
streets: improving, 53; paving, 40-41
Strip, 47, 50, 52, 54, 57 n.17; annexation of, 46; fire service for, 45; population of, 51
Stuggy, Emil, 70
Success Depends on the Animals (Diana L. Ahmad), review of, 197-98
Sullivan, Ed, 58 n.45
Sullivan, Maurice J., 77
Sundance, 43
Sunday School movement, 24
superintendents, pay for, 163
Swasey, Mrs., 61
"Sweethearts" (play), 66
Syrian and Armenia Relief, 77

Taft, Robert, 48
Talcott, William, 23
Tammany Society, 185

tank, **69**
Tappaan, Clair S., 9, 13
Tariff Board, 163
tariffs, 152, 159, 160-61
Tawnies, 102, 111, 130 n.1
Tawnies Upper, 102, **103**, 104
taxes, 43, 134 n.49; gambling, 144; property, 49, 53
Taylor, Edward, 7-8
Teamsters, 142
Teamsters Central States Pension Fund, 143
telephone utilities, 52, 58 n.37
Territorial Enterprise, 19, 29, 32, 33, 179; Twain and, 24, 35 n.4
"'They Live by Daily Wage': Labor and Work of the Paiutes of Moapa and Las Vegas, 1911-1924" (Polly C. Michel), 83-99
Third Regiment of Missouri Mounted Volunteers, 21
Thirteenth Amendment, 189 n.1, 189 n.18; Nevada and, 173-88; ratification of, 190 n.38
Thirty-eighth Congress, 183, 190 n.30
Thunderbird Hotel, 44-45, 46
"Thy Portion of the Wall: A Fable by Odessa Davenport" (Odessa Davenport), 74
Timbisha, 96
Time, 145
Time-Life, 143
Titanium Metals, 52
Tocqueville, Alexis de, 137, 138
Toiyabe Mountain, 23
Tonopah, Nev.: **69**, flu in, 76; relief fund by, 60; social life in, 78; World War I and, 59-79
Tonopah & Goldfield Railroad, 60, 65
Tonopah Ambulance Regiment, 63, 64, 65, 66, 67, 70, 73, 78, 79
Tonopah Banking Corporation, 68
Tonopah Bonanza, 61, 67, 70, 73, 75, 76
Tonopah Daily Bonanza, 148
Tonopah Extension Mining Company, 66, 68, 74
Tonopah Free Public Library, 59-60
Tonopah High School, 63, 67
Tonopah Mining Company, 63
Tonopah Public Library, 72
Tonopah Red Cross, 74
Tonopah Rifle Club, 73
Tonopah Women's Club, 61, 70
Tonopah Women's Relief Corps, 61
Tormey, Luke, 119
Touring Topics (Auto Club of Southern California), 7
tourism, 37, 40, 47, 54, 141
Tow House, 10
Toyaibe forest, 70
"Travels and Fortunes of the Great Austin Sack of Flour" (Mark Twain), 29
Tregloan, Dorothy, 63
Trias, Gov. Maj., 22
Truckee, Calif., 8
Truckee River, 78
True Gardens of the Gods (Ian Tyrrell), 6
Truman, Harry: on Nevada, 138-39
Trump, Donald, 145
Tubman, Thomas M., 158, 171 n.29
Twain, Livy, 34
Twain, Mark, 36 n.17, 36 n.21; article about, 18-36
Twentieth Century Club, 60
"Two Little Imps" (movie), 67
Tyrrell, Ian, 6

Underwood Tariff Act (1913), 162
unemployment, 123, 165
Union, maintaining, 185
Union clubs, 176
Union Pacific Railroad, 40, 49, 108, 109
Union Plaza Hotel, 43, 53
unionists, 124
unions, 144-45
Unionville, Nev., 181
Unite Here, 144
University of Nevada, 49, 72
U.S. Army Corps of Engineers, 39, 51
U.S. Bureau of Mines Rescue Car team, 62
U.S. Census, 41
U.S. Congress, 122, 140
U.S. Constitution, 173, 174
U.S. District Court, 29
U.S. Dragoons, 21
U.S. Food Administration, 62, 70
U.S. Forest Service, 6, 7, 9, 151, 152, 155; Elko County and, 141; grazing and, 153, 156; regulatory policy of, 153-54; Sierra Club and, 8; stock owners and, 156
U.S. Highway 40: 5, 8
U.S. Highway 95: 43, 50
U.S. House of Representatives, 184
U.S. Public Health Service, 76
U.S. Sanitary Commission, article about, 18-36
U.S. Senate, 143
U.S. Supreme Court, 139, 144
U.S. Treasury, 78
Use Book, 151
Utah Territory, 174

Veterans of Foreign Wars, 55
Virgin River, 87
Virginia & Truckee Railroad, 109, 114-18, 121
Virginia & Truckee Railroad Shops, **114**, 116

Virginia City, Nev., 23, 24, 25, 29, 114, 115, 121, 176, 178; arriving in, 109; mining and, 111
Virginia City Union, 24
Virginia Daily Union, 33
Voorhees, Daniel W., 186

Wade, George, 49
Wade, Thomas B., 27
Waide, Susan, 35 n.3
Wakeman, George, 33
Walker, Edwin, 70
Walker Lake Bulletin, 74
Walsh, Father, 117
War Department, 177, 180, 181
War Library Service, 72
Warde, Austin L., 65
Washington Rangers, 35 n.5
Washington *Star,* 184, 187
water: lines, 45; monopolization of, 149; Paiutes and, 94; restrictions, 87; system, 53
water district, 40, 52
Water District bond issue, 40
Watkins, Major, 21
Westside, 53, 54, 58 n.41
Wheeler, Mrs. S. M. B., 63
Whipple, Reed, 41
White Pine County, Nev., 152
White Pine Division, 157
White Winter, 149
Whitney, Bert, 67
wilderness, 4, 5, 6, 9; access to, 15; destruction of, 14; protecting, 12-13
William H. Otts Production Company, 77
Williams, Gerald W., 7
Williams, Truman (True) W.: illustration by, 20 (fig.)
Wilson, Woodrow, 60, 152
Winchester, Nev., 46
Wind River, 84
Winnemucca, Nev., 160
Winnemucca First National Bank, 163
Winnemucca Valley, 150
"Winter Sports Committee: A Progress Report" (Clark), 11
Winthrop, John, 137
Winthrop, Mabel, 70
Witt, Stephanie L.: review of her *Cities, Sagebrush, and Solitude: Urbanization and Cultural Conflict in the Great Basin,* 194-96
Woman Suffrage Crusade, 60
Women of Woodcraft, 73
Women's Auxiliary of the Moose, 73
Women's Civic Improvement Club, 60
Women's Relief Corps, 62, 73
Wood, Clara Louise, 35 n.3
Wood, Fernando, 185, 186
Woodbridge, Frederick E., 186
Woodliff's drug store, 190 n.26
World War I, 123, 153, 155, 164, 165, 166; Tonopah and, 59-79
World War II, 41, 166
Worthington, Henry Gaither, 27, 183, 184, 186, 188, 190 n.34
Wynn, Steve, 144
Wynn resort, 46

Yablonsky, Joseph, 141-42
Yeaman, George H., 186, 190 n.38
Yi-Fu Tuan, 5
Young, William, 61, 67, 73
Young Men's Institute, 117, 119
Young Men's Serbian Society, 60, 73
Youngs, Samuel, 175
Yuba County, Calif., 183
Yucca Mountain, fight over, 141

Nevada

Historical Society Quarterly

Seeking New Content

The *Nevada Historical Society Quarterly* is actively seeking content for future issues. Content pertaining to Nevada, the Great Basin and the West is the focus of this peer reviewed journal.

We seek content from a range of subjects including but not limited to: Agriculture, Anthropology, Art, Ethnic Studies, Geography, Geology, History, Literature, etc.

Articles: Research articles concerning broad themes, connections, movements, or problems that use primary sources and appeal to a wide-ranging audience are of primary consideration. Manuscripts concerning findings from original dissertation research or thesis are encouraged. We welcome articles that vary in content, research methodology, and interpretation that contribute to understanding some aspect of Nevada, the Great Basin, and the American West. Suggested length is 7,000-12,000 words, not including endnotes.

Notes, Documents, and Essays: Notes and Documents is a place for the reprinting of older documents and records plus contemporary essays heavily based on a single document, memoir or other personal account. These pages are a way for museums and public historians to educate our readership on unique items in collections and/or topics concerning public and popular interests. Photographic essays and short single-subject essays are appropriate for this section. Suggested length is 2,500- 5,000 words, not including endnotes.

Full manuscripts should be sent in electronic form to the Managing Editor. Please include a minimum of 2-3 photographs, illustrations or maps to accompany your article.

For more information about submissions visit our webpage:
http://nvculture.org/historicalsociety/quarterly-publication/

Or contact Michelle S. Roberts, Managing Editor at
mroberts@nevadaculture.org

Nevada Historical Society Membership

Giving to the Nevada Historical Society is the perfect way to embrace Nevada's rich heritage

A year's membership includes:

- Nevada Historical Society Quarterly publications (except at the Student & Senior level memberships)*
- unlimited free admission to all seven museums in the Nevada Division of Museums and History
- e-newsletter, regular email announcements to upcoming and current exhibitions
- free exhibit events and programs, and a 15% discount in all museum stores when you present your valid membership card!

Membership amounts over $20 can be tax deductible and support state level museum operations. Donations can be 100% tax deductible and you specify what your donation supports at NHS. Donors and Members reap more than benefits—you are supporting Nevada's oldest cultural institution!

Membership Categories

___ Yes, I want to become a member of the Nevada Historical Society at the following membership level:

___ Yes, I want to renew my membership at the following level (renewal date_____)

❑ Individual	$35
❑ Family	$60
❑ Institutional	$50
❑ Sustaining	$100
❑ Contributing	$250
❑ Patron	$500
❑ Benefactor	$1,000
❑ Student*	$20
❑ Senior*	$20

**Valid ID required, does not include Quarterly publications*

Donations and Gifts *You choose what your money benefits beyond membership!*

___ Yes, I want to join the new **499** Club with an additional donation of $499, beyond my membership to be used for:
❑ general use ❑ events ❑ collections ❑ conservation

___ Yes, I want add an additional donation to my membership with a gift of $_____ to be used for:
❑ general use ❑ events ❑ collections ❑ conservation

___ No, I do not wish to be a member of the Historical Society.
Please accept my tax deductible gift of $_____ to be used for:
❑ general use ❑ events ❑ collections ❑ conservation

Name (s) _____

Address _____

City _____ State _____ Zip _____

Phone: Home _____ Business _____

Email _____

The Society respects your right to privacy. We will not share your e-mail address with other organizations.

Mail this form and your check to:
Nevada Historical Society, Attn: Membership, 1650 N.Virginia St. Reno, NV 89503

The Nevada Historical Society's El Cano Postcard collection.

Howdy Cowgirl Rodeo Banner, 1939.

Hawthorne Sheepherding Pens, ca. 1908.

The Nevada Historical Society's El Cano Postcard collection.

The Nevada Historical Society's photo collection has nearly 1-million images spanning centuries of Nevada's colorful history. The collection is available to the public and copies may be made for nominal fees, see our website for more details http://nvculture.org/historicalsociety/photography-dept/ or contact Karalea Clough at kclough@nevadaculture.org for questions.