

# WOMAN'S INVASION OF MINING.

Denver, Colo.—The invasion of the fields of masculine endeavor by the eternal feminine seems to be destined to continue until there remains no stronghold that man can call solely his own.



Photo Credit: Freeport-McMoRan Morenci Inc., *The Royal Magazine*, Vol. 1 1899:366, Arizona Historical Society, Tucson (Image No. B109434)

## “Nor Must We Forget the Woman Prospector”: WOMEN IN ARIZONA MINING HISTORY

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Women in Mining—Celebrating a Journey of Success*

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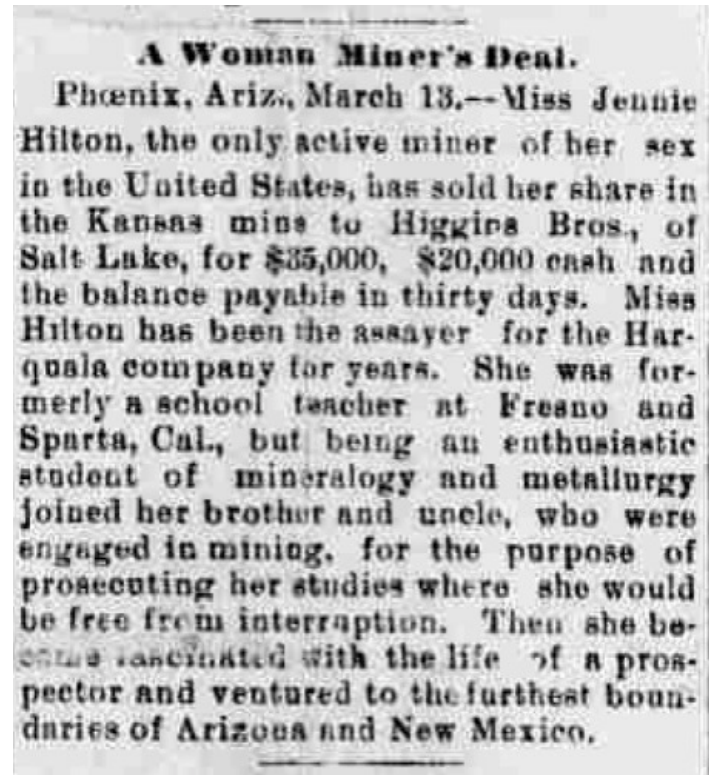
Early in the last century, California's *Sunset Magazine* spoke eloquently of the contributions of women prospectors to the American mining industry: "*Nor must we forget the woman prospector. She scorns high heels and long skirts and all such femininities. Shod with high, stoutly made, thick-soled boots that conceal all the ankle that a short khaki skirt would otherwise disclose, and attired in sombrero and khaki tunic, she tramps over the desert in a most business-like way, and handles a prospector's hammer as skillfully as her Eastern sisters would handle a fan.*"<sup>1</sup> While left unacknowledged in most mining histories, since the nineteenth century women in Arizona and the West have served as independent prospectors and miners, mining entrepreneurs and investors, mill workers, assayers, and mining engineers. Although saddled with official Bureau of Mines proscriptions that specified "no woman may be employed in any mine"<sup>2</sup> and deep-rooted Cornish superstitions that believed that women in a mine would bring bad luck,<sup>3</sup> these pioneer women would—against all odds—lay the groundwork for equality in the stopes, smelters, and boardrooms.

## THE PROSPECTORS

Although women prospectors are known to have been present in the California gold fields in 1849, it would be some decades before Arizona would see a large mining boom and, consequently, witness the arrival of the first female prospectors and entrepreneurs. As early as the 1880s, there are reports of "lady prospectors" in Arizona, and documentary records indicate that a certain Mrs. Holly located the San Juan copper property above Safford about 1886.<sup>4</sup> The San Juan was later acquired during the 1890s by another woman prospector, Mrs. H. L. Holborne, who reportedly "tramped through the hills, located claims, and held them as would any ordinary prospector."<sup>5</sup> The San Juan deposit would never pay off for these pioneer women, but over a hundred years later Freeport-McMoRan developed a large open-pit copper mine over the old San Juan claims.

Around the turn of the last century, attitudes toward women in the workplace slowly began to liberalize, and the number of women prospectors in the West increased greatly, particularly in Nevada, the Yukon, and Arizona.

Indeed, almost a hundred women prospectors are known to have worked on the Western American frontier, but owing to gaps in the documentary record, historians estimate as many as three times that number prospected in the West.<sup>6</sup> Of the many nameless Arizona women prospectors, we only know the details of the few who are described in period sources. Jennie Hilton—called "the only active miner of her sex in the United States" in 1896—owned a valuable mine near the Harquahala Mountains in southwestern Arizona, which she sold for \$35,000, an enormous sum of money in those days.



"A Woman Miner's Deal," *Santa Fe Daily New Mexican* [Santa Fe, NM], March 13, 1896:1

According to newspaper accounts, Hilton was formerly a schoolteacher but became "fascinated with the life of a prospector and ventured to the farthest boundaries of Arizona and New Mexico."<sup>7</sup> Other accounts mention a Mrs. Thomas Newlands of Yavapai County, who was described in 1897 as "possessed of rare business ability" and a person that will surely "succeed in mining pursuits."<sup>8</sup> Other female Arizona prospectors remain anonymous, such as a Hispanic woman in Tombstone who sold a mine in 1904 for \$25,000, leading a local reporter to state, "All this reminds us that you can't always size things up by their looks."<sup>9</sup>



### A Woman Miner.

The familiar object on the streets of Tombstone during the last few days, is a little brown woman with dress about the same color, and a man's hat. She is usually accompanied by two men, her husband and her brother-in-law, and you would take the combination for poor Mexicans, but this little woman's check would be honored for \$10,000 in ten seconds. She has handled three small mining propositions. One she located and sold, another she leased and bonded and sold the option, and another she sold on commission, and must be worth something like \$25,000. All this reminds us that you can't always size things up by their looks.—Prospector.

"A Woman Miner," *Coconino Sun* [Flagstaff, AZ], October 22, 1904:7

Of all the women prospectors who worked in Arizona, Nellie Cashman, the "Angel of Tombstone," and Lillian Malcolm, the "Woman Prospector," have perhaps achieved the most fame. Cashman, who is also well known for her charitable efforts in mining communities, led a prospecting trip to Baja California during the 1880s and later would find success in the Yukon gold fields.<sup>10</sup> Lillian Malcolm, who incongruously began



Nellie Cashman in her later years, from "Interesting Westerners," *Sunset: The Pacific Monthly* 46(5):48 (May 1921)

her career as a New York actress, also traveled to the Yukon in 1898 and began prospecting in search of golden pay dirt. Over the next several decades, the Woman Prospector worked throughout the deserts of Nevada, finding a valuable ledge of copper where few had dared venture before and eventually making her way to Mexico and Arizona.<sup>11</sup> Malcolm, clad in khaki pants and men's boots, would forcefully state,

"There is too much hypocrisy in the sexes... women can endure as much as a man."<sup>12</sup>



Photograph of three women panning gold in Nevada, ca. early 1900s—the woman on the left may be Lillian Malcolm, courtesy of UNLV Library, Special Collections (Image No. snv001045)

## WOMAN FINDS COPPER IN THE FUNERAL RANGE

Lillian K. Malcolm, the only woman mining prospector in Nevada, claims to have discovered in the Funeral Mountains in Death Valley, at a place never before visited by a white prospector, a ledge of copper and gold ores that may be worth millions of dollars, and to have established the existence of a copper belt heretofore unknown.

**Hunts Treasure in Death Valley Fastness.**

**Visits Region Not Before Seen by Prospector.**

**Braves Hunger and Thirst, Led by Her Hopes.**

**Millions May Be the Reward of Her Courage.**

Accompanied only by an Indian half-breed, Lillian K. Malcolm, a woman mining prospector in Nevada, claims to have discovered in the foothills of the weird Funeral Mountains of Death Valley a ledge of rich copper and gold ores on a ridge that towers 300 feet in the air. Once Lillian Malcolm, according to her story, crossed the Chicomot in Alaska, alone, in her search for gold. The railroad had not been built that has since minimized the difficulties of Alaska travel in the Chicomot region. Miss Malcolm declares that the tour of the Funeral Mountains was more hazardous than her lonely journey through the Chicomot years ago.

"No white person has ever visited the spot where I viewed the great copper deposit until I made my way there," she said yesterday. "I have never before seen such ruggedness in the mountains as the Funeral Range presents. To climb up almost perpendicular grades means to slide down others before the objective point can be reached. I have been a prospector ten years and have passed much of my time in the mountains of Alaska, Colorado and other places where there are mines. The Funeral Range is the worst of any I made up my mind that I would search for gold and copper in the foothills of the Funeral Mountains. I was compelled to cross the range to get where I wished to go. I had no fear, but there were minutes when, in climbing, I did not dare to look back, but only kept right on."

"There were many places where a misstep meant sure death. All there was to do was to go ahead. Once started in there was no way to stop without confessing defeat. Finally I found what I was looking for. At first I could hardly believe my eyes. I had reached a point about twenty-five miles from the line of the Clark road and sixteen miles from the line of the 'Burax Smith' road, when the ledge loomed up immensely."

"Then I was happy. I have studied mineralogy, geology and other lines had."

MISS LILLIAN MALCOLM, THE WOMAN PROSPECTOR, WHO CLAIMS TO HAVE DISCOVERED IMMENSE LEDGES OF COPPER ORE IN THE FUNERAL RANGE OF MOUNTAINS IN DEATH VALLEY.

Portrait and illustration of Lillian Malcolm combing the Nevada desert for copper, from "Woman Finds Copper in Funeral Range," *San Francisco Call* [San Francisco, CA], February 10, 1906:1



## THE ENTREPRENEURS

As early as 1880, there was talk in mining circles of an exclusively women-owned mining corporation known as the *Women's Mining Company* and associated "permanent bureau of information" for female mining investors in New York City to be known as the *Women's Bullion Club*.<sup>13</sup>

**THE WOMEN'S BULLION CLUB.**

**A New Organization that Bids Fair to Succeed.**

The Women's Bullion Club, but recently organized in this city, furnishes additional evidence of the great interest that is being manifested by all classes in mines and mining enterprises. The headquarters of the new club is at No. 14 East Fourteenth street- the rooms of the Ladies' Mining Agency—which are spacious and elegantly fitted up. The article of incorporation explains that the object of the formation of the club is to interest and educate women in the practical work of mining, and thereby to open for them a broader and more remunerative field of legitimate industry. To accomplish this work the club propose to open a reading room, where most of the current literature of the day shall be accessible to its members, and to institute lectures and discussions on subjects bearing directly upon the mineral interests of the country; also to furnish facilities for learning all the practical details of carrying forward mining enterprises according to the most approved methods and latest developments of scientific research; to bring within the reach of women favorable opportunities for negotiations in mining stock or properties on a basis of intelligent operations rather than as now, blindly dependent upon the representations of others. Finally, to keep always on record.

"The Women's Bullion Club," *The Weekly Miner* [Butte, MT], April 6, 1880:8

The stated objective of the bureau was to "interest and educate women in the practical work of mining and thereby open for them a broader and more remunerative field of legitimate industry."<sup>14</sup> Indeed, the *Women's Bullion Club* and another New York bureau known as the *Ladies Mining Association* would for several years give lectures and advice to female entrepreneurs regarding the wealth that could be made from base and precious metals mines in the Western Territories.<sup>15</sup> Some years

later, businesswoman Anna E. Durkee—who famously stated, "I can't see why a woman cannot run a gold mine just as well as a man"<sup>16</sup>—would use her business and mining acumen to become one of the foremost women mine owners in the world.

Durkee, born in 1869, would first try her luck as a schoolteacher and later as an insurance agent before making a fortune in mining in Alaska and Arizona.<sup>17</sup> Her first move as a burgeoning mining magnate was the formation in 1906 of the Alaska Garnet Mining and Manufacturing Company, capitalized at \$1,000,000 with a board of directors made up entirely of women.<sup>18</sup> Durkee



Officials of the Alaska Garnet Mining and Manufacturing Co., from "An Alaskan Treasure," *California's Magazine—Edition De Luxe*: Volume II. San Francisco: California's Magazine Company, 1916, p. 180

and her female partners soon found success in marketing garnet waste material for use in the separation of metals in foundries, and in 1914 shipped some 12 tons of garnet, all without the assistance of any male stockholders.<sup>19</sup> Speaking in 1916 of the company's success, a California magazine stated, "True, a few men stockholders have been allowed to edge into the organization, but, to quote one of the officers, 'they have been well trained and know how to keep their places'."<sup>20</sup>

Arizona and its mineral riches would soon come to the attention of Durkee, and following a tip regarding a

mining property near Chloride she purchased a number of gold claims and organized the Dardanelles Mining Company in 1916<sup>21</sup>. By the early 1920s, the Dardanelles

## DARDANELLES SHIPS CARLOAD OF ORE

The Dardanelles Mining company last week shipped another car of ore to the smelter. These cars, of which there have been four or five shipped, net better than \$1200. The mine is in fine shape and with further development, which will be carried on through another shaft, we believe it will be one of the most important properties in that part of the Wallapai mining district. The new shaft is to be three compartment and machinery capable of going to the 1000 level will be installed. Supt. Eaton has been lining up the ore bodies and future work will carry development into the surrounding territory.

"Dardanelles Ships Carload of Ore," *Mohave County Miner*  
[Kingman, AZ], February 4, 1921:4



"Shaft and Dump, Dardanelles Mining Co., near Chloride, Ariz.," from  
"Dardanelles Mine Chloride, Ariz., Opened Rapidly," *Engineering and Mining Journal* III (24):999-1000 (June 11, 1921)

operation had begun to realize success under the direction of Durkee, and each carload of ore shipped to the Hayden smelter was reported to yield \$8,000 each in gold and silver.<sup>22</sup> While the Dardanelles Mining Company would cease operations during the Great Depression, mining entrepreneur Anna Durkee eventually held controlling interests in some 20 mining properties in Arizona.<sup>23</sup>

## THE MINING EXPERTS

An 1881 article entitled "A Prospector in Petticoats" describes Alice Berge Clarke as an "assayer and mining correspondent" who recently passed through a course of study at Professor Murdock's school of assaying and chemistry in Chicago<sup>24</sup>. Clarke, along with numerous

### A Prospector in Petticoats.

Woman's sphere is daily enlarging, and their invasions in the field of labor threaten fresh incursions into the kingdom formerly held sacred to man. The latest development in this line was brought to the attention of a *Globe-Democrat* reporter, yesterday, at the St. Louis Mining and Stock Exchange, when he was introduced to Mrs. Alice Berge Clarke, a lady prospector, assayer and mining correspondent. Mrs. Clarke, by the death of her husband, came into the possession of several mining claims. In order to superintend their development she passed through a course of study in Prof. Murdock's school of assaying and chemistry in Chicago. She is a skillful prospector, and in handling

"A Prospector in Petticoats," *Bossier Banner* [Bossier Parish, LA],  
April 28, 1881:4

other women—including Jennie Hilton in Arizona—attended mining schools during the late 1800s and early 1900s and found success as professional assayers and mining experts. Indeed, a few years after the University of Arizona opened its doors in 1891, Clara Fish Roberts would be the first woman to graduate with a degree in mining from the school.<sup>25</sup> Over the next few decades, a number of other women studied mining at the University of Arizona, including Blanche Elise Lightowler who, in 1944, was the first female graduate of the School





Blanche Elise Lightowler, the first female graduate of the UA School of Mines (1944), working at an assay furnace, courtesy of Rob Peckham

of Mines.<sup>26</sup> Like earlier generations of women mining professionals, Lightowler still endured discrimination. Once during a school trip to a mine she felt compelled to dress like a man and hide her hair in a hat so that the superstitious miners would not realize that a woman was in the mine.<sup>27</sup> Since that time, hundreds of women have graduated from the School of Mines and pursued successful careers in the mining industry.

## TOWARDS GENDER EQUALITY

With wartime industrial expansion and the draft, sexual segregation of the workplace collapsed for a few short years in Arizona during World War II.<sup>28</sup> With the men off fighting in Europe and the Pacific and the production of strategic minerals such as copper imperative to the war effort, the Bureau of Mines' prohibitions regarding women in the mining workplace were relaxed. Dozens of women went to work in the mines and the loud, dusty Phelps Dodge mill at Morenci during World War II, where they helped produce the red metal for the war effort. By 1943, some 25 percent of the concentrator workforce was female. With the war's end, however, most were replaced by returning soldiers. Nevertheless, some women refused to leave and stayed on at Phelps Dodge for decades.<sup>29</sup>

The journey to gender equality was not complete, however, and the old barriers and superstitions regarding women in the mines resumed in the post-war era. Indeed, it would not be until the 1970s that government

and union mandates gave women the right to enter the male mining workplace.<sup>30</sup> The journey for women in the mining industry has been a long, winding road, and the pioneering Arizona women prospectors, mine owners, assayers, and mill workers of the late nineteenth and early twentieth centuries must be remembered for their contributions to the Copper State. We must not forget the pioneer woman prospector.



The Phelps Dodge reduction works in Morenci during the 1940s, courtesy of Freeport-McMoRan Morenci Inc.



Female workers at the Phelps Dodge mill in Morenci during WWII, courtesy of Freeport-McMoRan Morenci Inc.



Female mill workers leaving the change house at Morenci during WWII, from Carlos A. Schwantes, *Vision and Enterprise*, p. 218



- <sup>1</sup> Hedrick, Harry. The Newest Manhattan. *Sunset Magazine* XVII (5):258-262 (September), p. 261.
- <sup>2</sup> Ingalls, W. R. et al. *Rules and Regulations for Metal Mines*. Bureau of Mines Bulletin No. 75. Washington: U.S. Department of the Interior, Bureau of Mines, 1915.
- <sup>3</sup> Rowse, A. L. *The Cousin Jacks: The Cornish in America*. New York: Charles Scribner's Sons, 1969, p. 344.
- <sup>4</sup> "Mine Start a Safford Boom," *Arizona Republican* [Phoenix, AZ], June 7, 1914:11.
- <sup>5</sup> "The Lone Star District," *Graham Guardian* [Safford, AZ], Souvenir Edition, May 1883:13.
- <sup>6</sup> Zanjani, Sally. *A Mine of Her Own: Women Prospectors in the American West, 1850-1950*. Lincoln: University of Nebraska Press, 1997, p. 11.
- <sup>7</sup> "A Woman Miner's Deal," *Santa Fe Daily New Mexican* [Santa Fe, NM], March 13, 1896:1.
- <sup>8</sup> [No title], *Mohave County Miner* [Mineral Park, AZ], November 27, 1897:3.
- <sup>9</sup> "A Woman Miner," *Coconino Sun* [Flagstaff, AZ], October 22, 1904:7.
- <sup>10</sup> Chaput, Don. *I'm Mighty Apt to Make a Million or Two: Nellie Cashman and the North American Mining Frontier*. Tucson: Westernlore Press, 1995.
- <sup>11</sup> Enss, Chris. *A Beautiful Mine: Women Prospectors of the Old West*. Guilford: TwoDot, 2008, pp. 73-81. Zanjani, *A Mine of Her Own*.
- <sup>12</sup> Enss, *A Beautiful Mine*, p. 78.
- <sup>13</sup> "Lady Miners," *Arizona Citizen* [Tucson, AZ], February 14, 1880:1.
- <sup>14</sup> "The Women's Bullion Club," *The Weekly Miner* [Butte, MT], April 6, 1880:8.
- <sup>15</sup> "Mines as Sources of Wealth," *Scientific American Supplement*, May 8, 1880:3613-3614. "The Women's Bullion Club," *The Weekly Miner* [Butte, MT], April 6, 1880:8.
- <sup>16</sup> Brown, Wynne. *More than Petticoats: Remarkable Arizona Women: Second Edition*. Guilford: Globe Pequot Press, 2012, p. 41.
- <sup>17</sup> Brown, *More than Petticoats*.
- <sup>18</sup> Brown, *More than Petticoats*. "An Alaskan Treasure," *California's Magazine—Edition De Luxe: Volume II*. San Francisco: California's Magazine Company, 1916, pp. 179-183.
- <sup>19</sup> Brown, *More than Petticoats*, p. 40.
- <sup>20</sup> "An Alaskan Treasure," *California's Magazine—Edition De Luxe*, p. 179.
- <sup>21</sup> Brown, *More than Petticoats*.
- <sup>22</sup> Brown, *More than Petticoats*, p. 43.
- <sup>23</sup> Brown, *More than Petticoats*, p. 43.
- <sup>24</sup> "A Prospector in Petticoats," *Bossier Banner* [Bossier Parish, LA], April 28, 1881:4.
- <sup>25</sup> Domitrovic, Anna. A Woman's Place, in *History of Mining in Arizona, Volume III*, edited by J. M. Cantly and M. N. Greeley. Tucson: Mining Club of the Southwest Foundation, 1991, pp. 207-229. University of Arizona. *Alumnal Record: University of Arizona*. Tucson: University of Arizona, 1916, p. 29.
- <sup>26</sup> Personal communication between Rob Peckham and Mary Poulton, October 3, 2013.
- <sup>27</sup> Personal communication between Rob Peckham and Mary Poulton, October 3, 2013.
- <sup>28</sup> Sheridan, Thomas E. *Arizona: A History, Revised Edition*. Tucson: University of Arizona Press, 2012, p. 300.
- <sup>29</sup> Don Lunt, personal communication, October 15, 2016. Schwantes, Carlos A. *Vision and Enterprise: Exploring the History of Phelps Dodge Corporation*. Tucson: University of Arizona Press, 2000, p. 218.
- <sup>30</sup> Mercier, Laurie. Bordering on Equality: Women Miners in North America, in *Gendering the Field: Towards Sustainable Livelihoods for Mining Communities*, edited by Kuntala Lahiri-Dutt. Canberra: ANU E Press, 2011, pp. 33-47.

Photo Credit: Nevada Historical Society, Reno (Image No. nye01073), Connie Fraser Kiely via Al Ring.

# WOMAN RUNS COBALT MINE.

## A NERVY WOMAN DARES DEATH VALLEY

Helen Quigley Seeks Treasure Where Few Care to Go.

San Bernardino, Cal., June 26.—With her hair bleached white by desert heat and alkali and almost reduced to a wreck by suffering through lack of food and water, the most daring and courageous woman prospector developed by the present mining excitement has reached San Bernardino. She is Mrs. Helen C. Quigley and comes from Utah. Nearly three months ago she left Bullfrog, and has since been seeking treasure where few men have dared to go, making a hazardous trip from the head of Death Valley. Local mining men who heard of the adventures



## Lady Prospector In the Field

Attracted by the stories of untold mines of richness throughout the state, Mrs. Malcolm, known as the "Woman Prospector," left last week on a prospecting trip.

Mrs. Malcolm is perhaps the only woman prospector in the state, and she takes her prospecting trips alone, yet is never afraid or terrified by reports of dangers or perils. She has a regular camping and prospecting outfit with burros and does her work just like a man would.

She has already made some good strikes in her work and expects to make a profitable trip this time. The region where she expects to go is having a revival of mining just at present and the country south, in Cochise county, seems to be about the most

