

# Good Luck, Perseverance, and the Tombstone Bonanza

By Gerald R Noonan PhD

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Ed Schieffelin's recollections illustrate the good luck and perseverance that resulted in the Tombstone Bonanza (Underhill, 1979). In the spring of 1877 two men were assessing the old Bronco [Brunckow] mine, about eight or nine miles from where Tombstone is now situated. They noticed that he had a good rifle and plenty of ammunition and made the fateful decision to hire him to stand guard while they worked. While Schieffelin was standing guard, he noticed with his binoculars that the Tombstone hills looked like a good place to prospect. After he finished his two-week tour as guard, Schieffelin searched in and around those hills. He found some good ores but nothing that indicated the presence of large amounts of precious metals until the following spring of 1878. However, he did find enough ore in 1877 to convince him to continue prospecting.

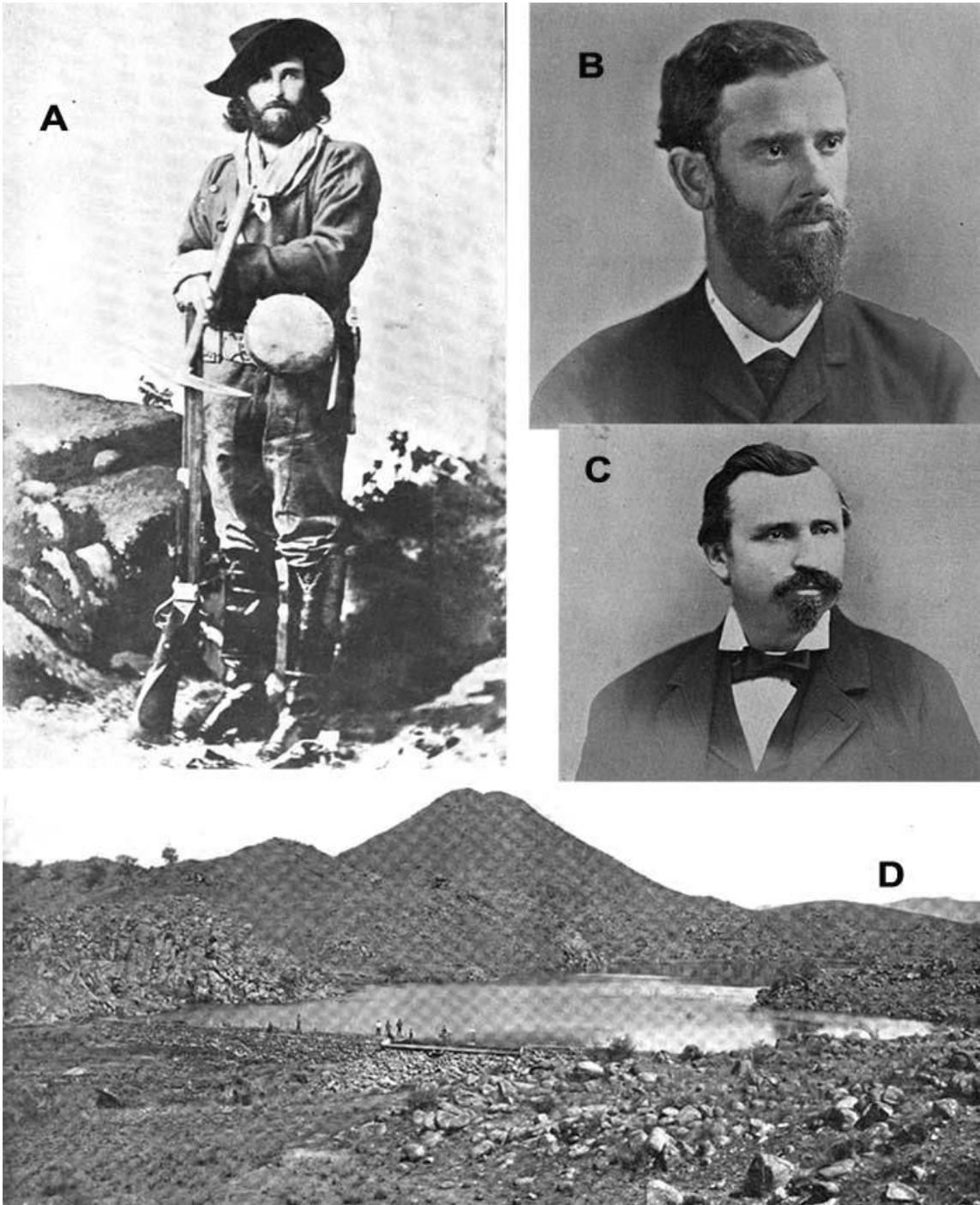
Schieffelin related an 1877 incident in Tucson that showed his determination to persevere. He went into the Tully & Ochoa store to purchase supplies. When he asked about the prices of flour and other necessities, the proprietors asked what he was doing. He replied, "Prospecting in the San Pedro country." The proprietors said prospecting was foolish and that he wouldn't get any supplies unless he had the money to pay for them. That reception represented the general feeling of many people in Tucson about prospecting. Despite the disheartening comments, Schieffelin went to a different store, purchased bacon and flour, and persevered.

The fall of 1877 found him reduced to the "last extremity", out of provisions, almost without clothing, and with only 30 cents in money – \$6.89 in 2013 dollars as regards purchasing power (MW, 2014). Schieffelin survived by hunting deer. He took additional samples and then headed northward to find his brother Albert who was working at the Signal Mine in southern Mohave County.

His brother and several other miners felt Schieffelin's samples were mostly very poor. Despite this, Albert took several samples to Richard Gird, an assayer at the mine. Gird tested the ore and found it valuable. Albert was reluctant to leave his job which he regarded as good because it paid four dollars a day for an eight-hour shift – \$91.80 in 2013 dollars as regards purchasing power (MW, 2014). However, Gird and the Schieffelin brothers agreed to go into partnership and left for the Tombstone area on February 14, 1878 just as the mine's noon whistle was blowing. Albert and Gird wanted to eat lunch but Ed Schieffelin replied that he had been waiting long enough and that they should go "at once." During several months of prospecting the men found several potential mine sites and filed claims for them.

Soldiers had several times told Ed Schieffelin that all he would find in the area would be "your tombstone." Schieffelin recalled the latter word and named his first discovery the Tombstone Mine. He didn't forget the word and used it again when he and others organized the Tombstone Mining District on April 5, 1878. (Recording a mining district gave miners the ability to pass rules regulating behavior in the district.)

For the Schieffelins and Gird to develop their claims and process the resulting ore, they needed a large infusion of cash. Fortunately they had met two men in Tucson who helped secure financing (Monahan, 2007, p. 3-4; Underhill, 1979, p. 63). The first was Governor Safford who advised them to talk with John S. Vosburg, a local businessman. Vosburg paid for \$300 worth of goods—\$7,230 in 2013 dollars as regards purchasing power (MW, 2014). He later spoke with the governor who in turn convinced the Corbin brothers of the Corbin House Hardware Store in Connecticut to visit the Tombstone area. In return



**A.** Ed Schieffelin about 1881 from p. 219, 236 abs. in Hall, 1907. **B.** Albert Schieffelin. **C.** Richard Gird. **D.** Gird Dam (B & C from p. 40 & 42 in Gird, 1907. D from p. 764, 791 abs. in Tonge, 1897.)

for a  $\frac{1}{4}$  interest in 10 claims in Tombstone, Vosburg promised on September 27, 1878 to assemble a ten-stamp mill by the San Pedro River, construct a dam and ditch to power it,

and build a road from the mine to the mill. On October 1, 1878 E. A. Corbin gave Vosburg an \$80,000 credit for construction in return for a ½ share (of Vosburg's ¼ interest) in the 10 mines, a ½ share (of a ½ interest) in the Tombstone townsite, and a ½ share (of a ½ interest) in the mill and water rights of the Lucky Cuss mine. Subsequently, on October 26, 1878, the Schieffelins, Gird, Vosburg, and Safford incorporated the Tombstone Gold and Silver Mill and Mining Company, commonly called the Tombstone Mill and Mining Company).

Vosburg worked energetically to fill his part of the bargain (Rose, 2012, p. 13-15). He arranged for the Mormons of St. David to build the required dam on the San Pedro River. They used oxen to bring rocks to the dam site, laid smaller rocks and stones on the upper face, rammed grass and hay in between the rocks, and put gravel and earth on top. Workers constructed approximate 1½ miles of ditch and flume to carry the water to the penstock at the mill site. Vosburg supervised the leveling of the mill site, the building of a retaining wall there, and the construction of a road from the mill site up into the Huachuca Mountains where a sawmill would be located on the northern slope of Carr Canyon.

Gird left for San Francisco on October 30, 1878 to arrange for the building and transportation of the sawmill and the ten-stamp ore processing mill (AS, 1878; Underhill, 1979, p. 64). The Fulton Iron Works built the ten-stamp mill and would later build the Corbin, Contention, Sunset, and Grand Central Mills (FIW, 1881). Gird returned from San Francisco in early January 1879, and by January 11 the sawmill was in operation, and the ten-stamp mill was on the road from Yuma (AC, 1879a).

The expected success of the Tombstone mines resulted in the formation on January 21, 1879 of the Corbin Mill and Mining Company (AC, 1879b; Underhill, 1979, p. 65). It was to run the Lucky Cuss Group composed of the Lucky Cuss, Owl's Nest, Owl's Last Hoot, East Side, and Tribute claims. Its fifteen-stamp mill, commonly called the Corbin Mill, would be by the San Pedro River near the ten-stamp mill. The owners included the Schieffelins, Safford, Gird, Vosburg, and Albert A. Corbin. The latter was to leave the next week for San Francisco to order the new mill. A portion of the ten-stamp mill had passed through Tucson the previous week and would soon be at the mill site. (Common terms for plants that converted ore into bullion were "stamp mills," "reduction plants," "reduction works" or just "mills.")

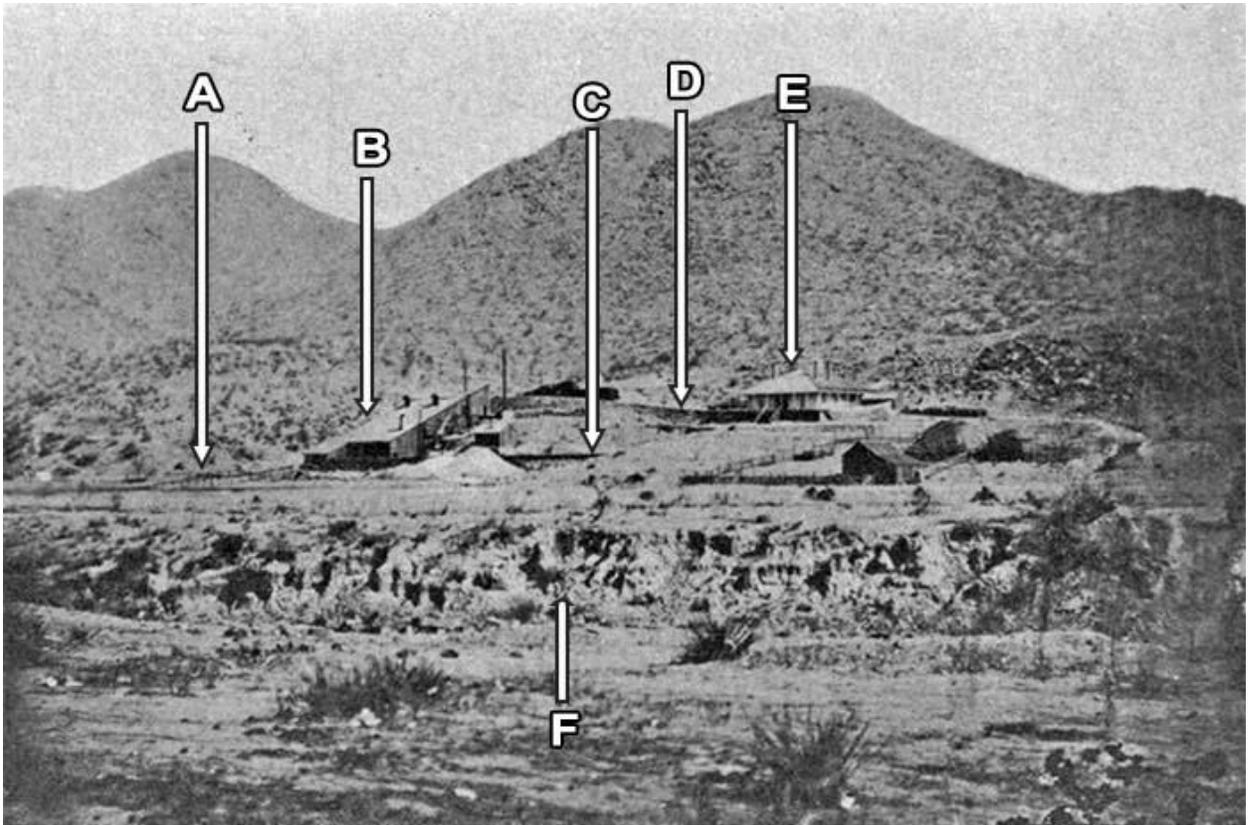
"Turn on the water," ordered Vosburg!

People were expectantly waiting at the newly built ten-stamp mill on June 1, 1879 (AC, 1879d; Brown, 1881, p. 51; Monahan, 2007, p. 6). Water splashed from the iron penstock down a 40-foot fall onto a turbine wheel whose revolutions powered the mill machinery. After leaving the wheel, the water ran through a 470-foot tunnel and returned to the river. The water came from a 1250 foot-long flume that connected to the long ditch that ran upstream to the dam. During the next five following anxious days, the mill processed the ore and converted it into bullion. The mill ran fine but made a lot of noise. Vosburg regarded the noise as "lovely music." The noise was the sound of money!

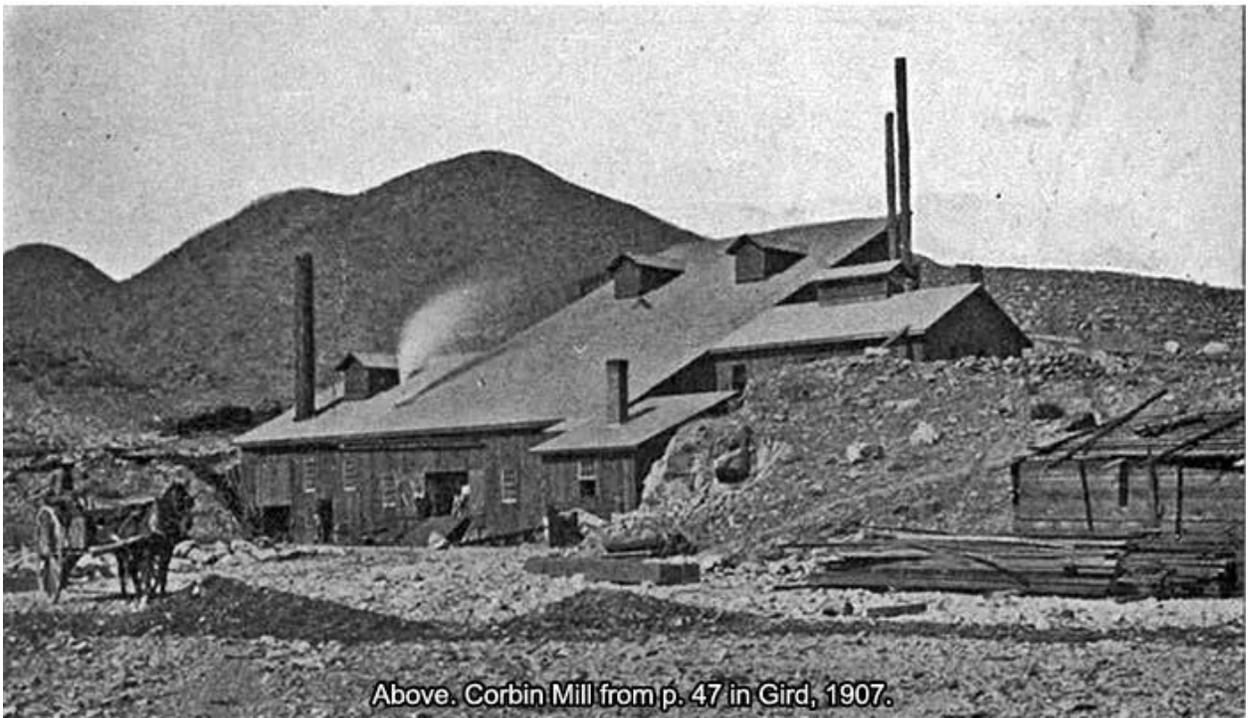
On June 17, 1879 Ed Schieffelin and Judge T. J. Bidwell drove a blue wagon up to a Tucson bank (AC, 1879e; Underhill, 1979, p. 64). Inside the wagon were eight bars of bullion with a total value of \$18,744.58 —\$452,000.00 in 2013 dollars as regards purchasing power; MW, 2014). A second shipment of bullion valued at \$18,395.28 arrived at the bank on June 25. The Tombstone Bonanza had begun!

Assembly of the Corbin Mill began before completion of the ten-stamp mill. By April 18, 1879 workers were preparing the site for the mill. The mill itself had arrived at the end of the railroad in Yuma and was enroute to Millville (AC, 1879c). On January 16, 1880 the Corbin Mill began operation (AC, 1880).

The ten-stamp mill operated via a "dry crushing" process. In October 1879 workers shut it down for approximately 2 weeks to convert it into a more efficient "wet crushing" process. In its initial 4 ½ months run it had produced \$176,314.38 (\$4,250,000.00 in 2013 dollars as regards purchasing power



Above. Tombstone Mine & Milling Co. ten-stamp mill & Gird house & office. **A.** Pipes that possibly carried ground pulp to tailings pond. **B.** Ten-stamp mill. **C.** Flume that carried water. **D.** Retaining wall. **E.** Gird House & mill offices. **F.** Arroyo containing San Pedro River. From from p. 48 in Gird, 1907.



Above. Corbin Mill from p. 47 in Gird, 1907.

(MW, 2014) in bullion, mostly silver. During the shutdown, workers replaced elevators, conveyors, and other dry crushing items with piping and tanks for the wet crushing process (AC, 1879f).

By the reopening date of the ten-stamp mill, Gird had seen to the construction of a building nearby that housed a mill office and an elegantly furnished home for himself and his new bride. The mill office had all known conveniences of the day including a large ornamental vault door and black walnut furniture. The well-furnished bedrooms were carpeted, well lighted, and each had a fireplace.

W. Lawrence Austin, manager of the mills at Millville, provided information about the mills (Austin, 1883, p. 102-106) and noted that the processes of both mills were very similar. Workers had upgraded the original mill by adding five stamps and installing a steam engine to supply power in addition to that furnished by the original water turbine. A steam engine powered the Corbin mill and burned approximately 7 cords of mixed wood per day, at a cost of nine dollars per cord. Its fuelwood was black oak, white oak, willow, and pine. Its boilers also supplied steam to a stream pump that pumped the water up a vertical height of 100 feet. The mill used the water both for the steam engine and for wetting the ore.

For three dollars per ton contractors brought ore down in wagons from the mines 10 miles away. The wagons were connected in pairs and together carried approximately 14 tons of ore. Their bottoms were planks, 6" x 2", laid crosswise with their ends resting on the framework of the wagon-bed. Workers could unload a pair of wagons within approximately 20 minutes by removing the planks and allowing the ore to drop out.

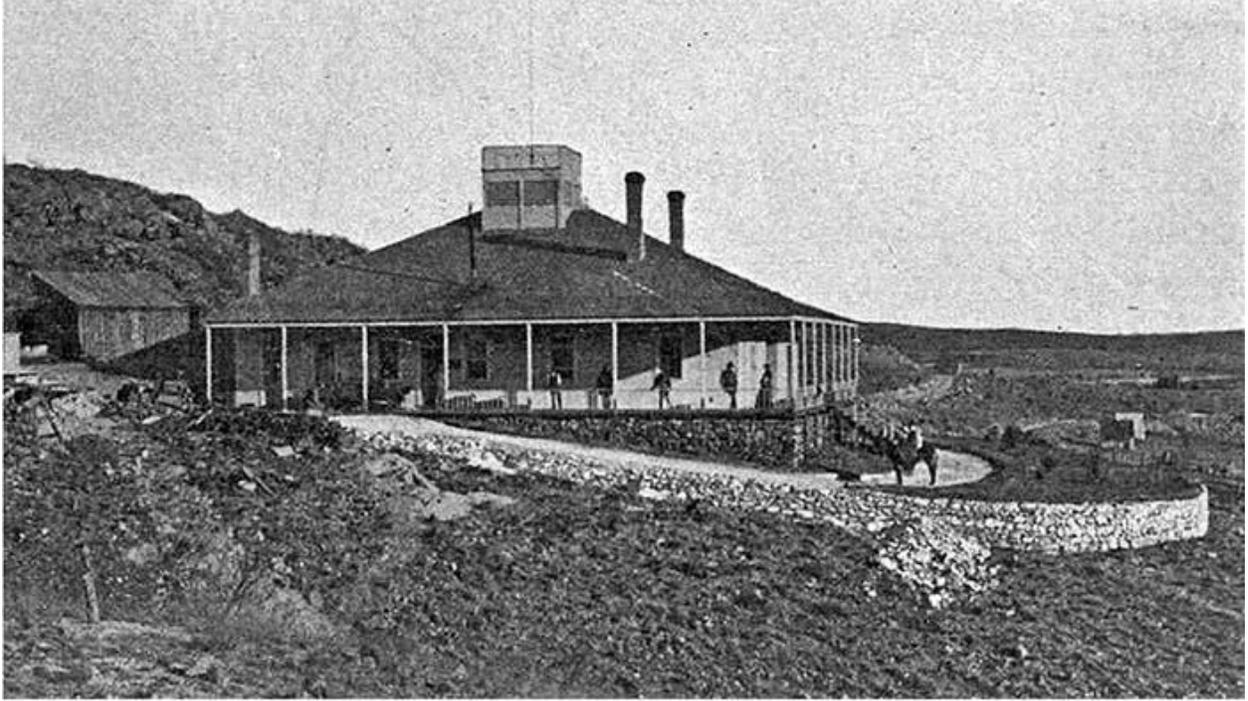
The workers then wheeled the ore in "barows" to a crusher that broke down larger pieces to a size that could be readily further processed. Ore that was not sufficiently fine passed to an area where 20 stamps further crushed it. The portion of each stamp that contacted the ore was called a "shoe." Each shoe initially weighed 120 pounds and had an average life of about a month, with a worn out shoe weighting only approximately 35 pounds. A freshly shod stamp weighed about 750 pounds and dropped 6½ inches 100 times a minute onto the ore. Water added to the crushed ore made a "pulp" that was discharged into circular tanks that each had a heavy agitator that further ground the pulp and mixed it with mercury. Over a period of approximately 4 hours the silver and gold in the ore amalgamated with the mercury. The amalgam was then heated in a distillation retort, with the mercury distilled and stored for future use and the precious metals left behind for smelting into bullion.

The total milling cost was approximately \$4.90 per ton of ore. The amount of mercury lost per ton of milled ore varied according to the grade and character of the ore, but averaged approximately 1.3 pounds. The milling process consumed approximately 0.11 cords of wood and 1200 gallons of water per ton of ore.

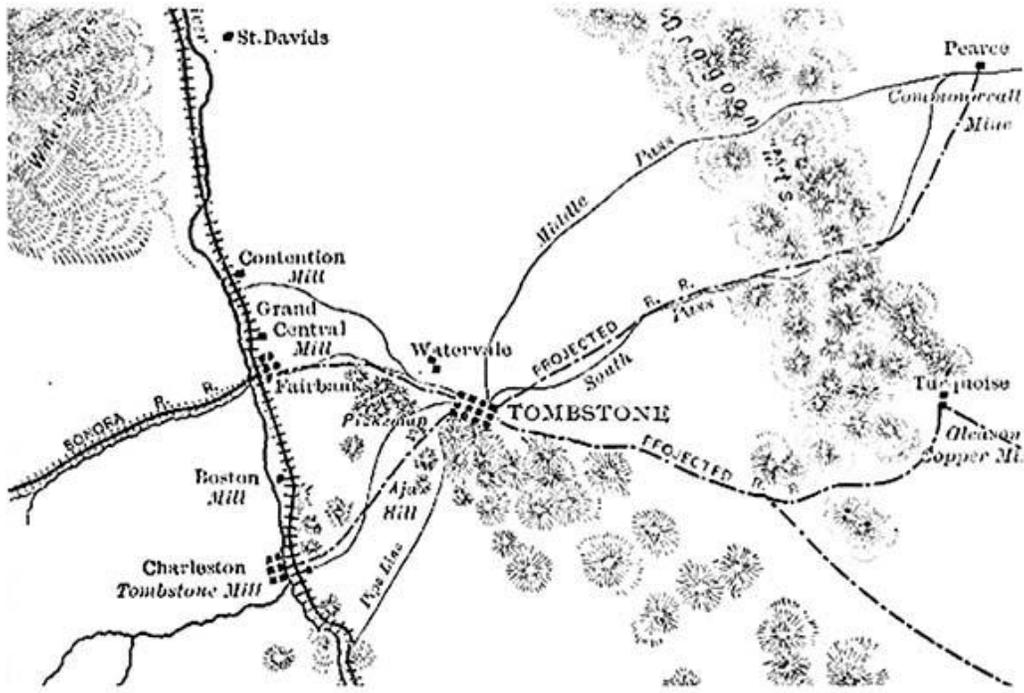
Working in a stamp mill could be hazardous. Sam Aaron, who worked in one of the mills at Millville, recalled in his memoirs (Marcus, 1958, p. 105-106) that he refused to work near the amalgamation process because of the known harmful effects to workers there. He also noted that workers in the smelter area suffered from lead and arsenic poisoning, resulting in considerable worker turnover. The mills also polluted the river. A traveler noted in May 1883 that material that ran down from the mills turned the river a deep vermillion and made the water unsuitable for drinking and possibly for irrigating (AWC, 1883)

The Schieffelins sold their half interest (both ¼ interests combined) in the Tombstone Mill and Mining Company and the Corbin Mill and Mining Company in March, 1880 for the total sum of \$600,000—\$14,100,000 in 2013 dollars as regards purchasing power (MW, 2014; Underhill, 1979, p. 66). Ed Schieffelin's thirty cents had made him and his brother a fortune. Richard Gird sold his 1/8 interest in the Tombstone Mill and Mining Company about a year later for the same sum around the first of March 1881.

Silver mining boomed in the Tombstone area for several years. Prospectors flocked to Tombstone, and by August 1879 hundreds of claims had been located in the Tombstone Mining District, with a



Above. Gird Home & Tombstone Mill and Mining Office, 1879. From Gird, 1907, p. 46.



Above. Tombstone & its mills. From Church, 1093, p. 5, 71 abs.

surprising portion of them having rich and extensive cropping (AS, 1879). In 1880 mining companies erected eight steam hoisting works on seven different mining properties and four additional stamp mills (MSP,

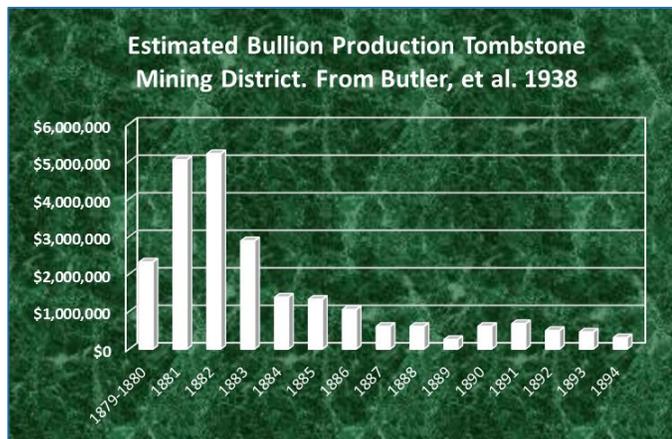
1881a). By October 1881 the Tombstone Mill and Mining Company was handling 23,000 tons of ore each month (MSP, 1881b). The ore was hoisted up mineshafts by steam power and moved along tramways to ore bins. The elevated tramways and ore bins allowed teamsters to drive ore wagons beneath the bins. Miners then opened a trapdoor to allow the ore to fall into the wagon-bed beneath. By September 1881 mining companies had (MSP, 1881a) seven different mills with a total of 125 stamps, with 30 at Grand Central, 25 at Western (Contention mine), 20 at Boston and Arizona, 20 at the Corbin Mill, 15 at the Gird Mill in Millville, 10 at Head Center, and 5 at Hopkins. See Disturnell (1881) for a detailed description of mines and stamp mills.

Mining sparked a population boom in the Upper San Pedro river Valley (Fulton, 1966, p. 11; Rodgers, 1965, p. 45-63; Rose, 2012, p. 8-11; TWE, 1882). People created six towns along the banks of the San Pedro River— Contention, Grand Central, Fairbank, Emory City, Charleston, and Millville — and Tombstone, the mining center situated a few miles east of the river. All of the mill sites were on the eastern side of the San Pedro River so that the heavy ore wagons would not have to cross the river. The federal government Appointed Richard Gird postmaster at Tombstone on December 9, 1878 (SDU, 1878). People built the first house in Tombstone in April 1879. That same year Contention, Tombstone, and Charleston requested appointments of justices of the peace and constables. The Tombstone request cited an approximate population of 2000 people in its vicinity. Also in 1879, Tombstone requested incorporation as a village or town and reported that a census showed 470 people in it. By November 1879, the Arizona Weekly Star estimated the population of Tombstone as between 1000 and 1500 and that of Charleston as 600 to 800. An article in the *Los Angeles Herald* reported that as of October 1879 the population of Tombstone had increased in approximately a month from about 300 people to more than 1500, that lots in town cost from \$400 to \$2000, and that there were two stage lines operating between Tucson and Tombstone (LAH, 1879). As of July 1880 houses 40 x 80' in size rented for \$500 a month (SDU, 1880).

The 1882 census recorded 9640 people as living in Cochise County. Nearly half or 5300 were in Tombstone. Populations for other areas along or near the San Pedro River were 820 in Benson, 452 in Contention, 423 in Charleston, 410 in Bisbee and vicinity, 208 in Tres Alamos and the lower San Pedro River, 82 in the Huachuca Mountains, 80 at Boston Mill, 31 at Ochoaville, and nine in Hereford. In his 1883 annual report the acting governor of Arizona stated (Tritle, 1883, p. 18, 45 abs.) that Tombstone had a population of 7000).

The exact worth of the bullion produced by the Tombstone Mining District before 1908 is unknown. However, Butler et al. (1938, p. 49) used unpublished figures such as old company reports, to derive the estimated approximate value of bullion production shown in the graph. The bullion value peaked in 1882 at \$5,202,876 and declined thereafter. The 1882 figure when adjusted with the Consumer Price Index (MW, 2014) indicates a purchasing value in \$2013 of 122 million. Adjustment of the 1882 figure to reflect the relative share of Gross Domestic Product yields a sum slightly more than \$7 billion because the 1882 economy was much smaller than that of 2013. The Tombstone Mining District for a few years was indeed a bonanza that provided fortunes for several people and a livelihood for many others.

A mix of factors ended the Tombstone Bonanza. First, silver prices declined during the latter part of the 19<sup>th</sup> century (Kitco, 2014). The London average price per ounce in US dollars was \$1.21 in 1877,





Above. Contention Hoisting Works & Ore Dump, ca. 1880, Tombstone in background. **A.** Miner returning ore cart to mine. **B.** Ore Bins which when opened allowed ore to fall into wagons positioned beneath. From Tonge, T. 1897., p. 760, 787 abs.



Above. Ore wagon team in Tombstone. From Blake, 1902., p. 30 abs.

\$0.97 in 1887, \$0.59 in 1897, and \$0.55 in 1907. Silver thus lost approximately half of its market value from the time Ed Schieffelin prospected in the Tombstone area to the early 20<sup>th</sup> century.

Miners discovered water at a depth of 520 feet in the Sulphuret mine in 1881 (Blake, 1902, p. 17-21; Devere, 1978, p. 315; Monahan, 2007, p. 27-63). People initially thought the underground water would allow mining companies to move their mills to the Tombstone area and save the cost of hauling ore down to the mills along the San Pedro River. By early 1883 most mines had been dug down to the level of the water, and it was necessary to install pumps if mining was to be done at lower depths. The Grand Central Company put in steam pumps capable of raising 500,000 gallons of water a day. However, these pumps produced no lowering of the water level. The Contention Company then spent approximately \$150,000 on Cornish pumps capable of raising 1 million gallons per day. The water level still did not fall. The Grand Central Company then spent approximately \$200,000 installing Cornish pumps that could move 1.5 million gallons per day. The new combination of pumps lowered the water to a depth 100 feet below the initial water level. There were no technical problems preventing further pumping of water and mining at increasing depths. However, on May 26, 1886 a fire destroyed the Grand Central Company hoisting works and pumps.

The lower silver prices significantly reduced the incentives for spending more money on pumps. The mining companies squabbled among themselves, and the Contention management stopped its pumps and allowed the water level to rise. Finally, because of the carelessness of a watchman, the Contention plant took fire. Its complete destruction stopped the possibility of mining at lower depths.

Mining companies thus faced significantly higher costs of obtaining ore and much lower prices for silver. They were unable to agree on how to share the costs of pumping water.

By 1897 the population of Tombstone was less than 1000 (Tonge, 1897, p. 762). Approximately 100 men engaged in small mining activities by taking leases on mines or portions of mines and paying a royalty for the value of the ore. By 1915 people had removed most of the houses from Tombstone (Bissell, and Bissell, 1915, p. 500-502, 509-511 abs.). Settlers in the San Pedro River Valley had found it more economical to buy homes in Tombstone for \$50 or \$75 each and then take them piecemeal down into the valley rather than to build dwellings. There would be attempts at various times to start pumping the water and revive the mining, but the bonanza years never returned.



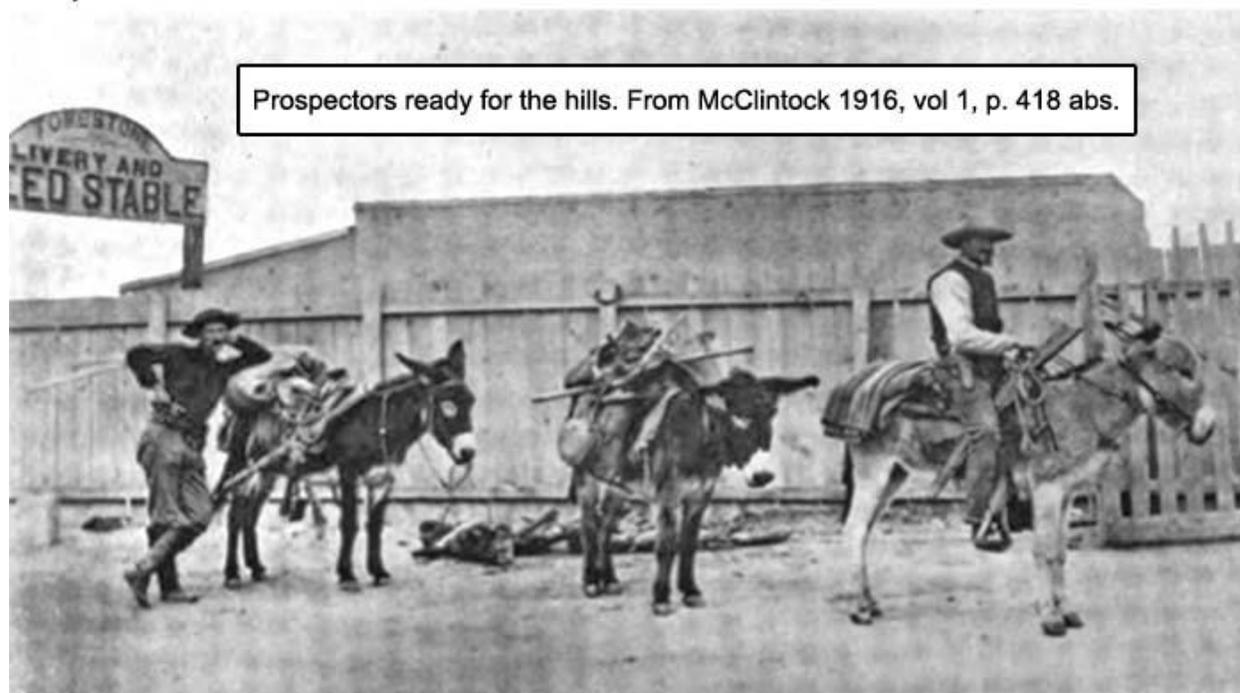
Above. Contention Mill, with ore wagon team on ramp above mill. From Tonge, 1897, p. 762, 789 abs.



Grand Central Mining and Milling Company's mine surface plant, with Tombstone in background, ca. 1884. From McCord, 1897, unnumbered p., 931 abs.



Above. Courtesy of USC Digital Library, <http://digitallibrary.usc.edu/cdm/singleitem/collection/p15799coll65/id/11182/rec/1>. The Tombstone Mill and Mining Company used approximately 300 cords of wood /month, all from the Huachuca Mountains (DA, 1885). Teamsters brought most of the lumber down in ox drawn wagons, similar to the one here that was photographed somewhere in Arizona in approximately 1890. Other mining companies got their lumber mostly from other mountains.



Prospectors ready for the hills. From McClintock 1916, vol 1, p. 418 abs.

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