

Chapter Three

Bisbee, Arizona's Dowager Queen of Mining Camps A Look at Her First 50 Years

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Introduction

The Warren Mining District, or Bisbee as it is better known, produced a tremendous amount of metal during its century of operation. Through 1981 a production of nearly 8 billion pounds of copper, 324 million pounds of lead, 355 million pounds of zinc, and 28 million pounds of manganese had been recorded (Keith, et al., 1983). In addition to these important base metals 2,792,000 ounces of gold and 102,215,000 ounces of silver came from these mines (Keith, 1983).

This means that Bisbee has produced more gold, silver, and lead than any other district in Arizona. There are, however, several areas in the state that have exceeded Bisbee's copper production.

The Bisbee of today remains a town of unique charm, a place almost suspended in time. Memories of the early years of this century line her winding streets, anxious to be discovered by the curious. Along the steep limestone hills colorful dumps can be seen, now but a shadow of the great industry that gave the town a reason to be.

My intent here is not to present a framework of endless numbers but rather to add color to those faded early years when this very special camp was young.

Ore is Discovered

The Mule Mountains, that nondescript range of hills hoisting Bisbee, are typical of many in the basin and range province. Rising 3,500 feet above the surrounding broad valley desert plain, they achieve an ultimate elevation of 7,300 feet. These elevations gave the promise of water and game among the tangled oaks and pines.

History has chosen not to remember who the first non-Indian that entered the canyon called Mule Gulch may have been. But he almost certainly was someone seeking either refuge from the desert or mineral wealth.

It has been suggested that the presence of ore in the Mule Mountains was known as early as 1876 (Mc Clinck, 1916), a year before the discovery of nearby Tombstone. For what was to become Bisbee, however, the time was not yet at hand. Confirmed discovery came early in the summer of 1877 when a scouting party from Fort Bowie made their way into the mountains.

Their search for Indians and need of water took this group to a spring among the rust-colored hills. Not sur-

prisingly, the water here was disagreeable.

The following day, John Dunn, a member of the party, went further up the gulch in search of good water. Finding a fine spring near a massive limestone cliff, he began his return trip to the group. Along his way back to camp he discovered a small outcrop of cerussite (lead carbonate). Once back in camp, Dunn reported his find to Lieutenant Rucker, the officer in charge.

Dunn, along with Rucker and one T.D. Byrne, located the first claim in what was to become the Bisbee area. Even though these men were the first to stake a claim, they shared little in the success that was to follow. Given all they had to choose from, they selected badly, twice. First their original claim, the Rucker, was later shown to be largely on barren ground. Secondly and most unfortunately, Dunn chose to grubstake George Warren. He was to locate additional claims in the area, naming Dunn in each. Warren accepted the grubstake, but never honored his agreement.

George Warren

George Warren had, by this time, suffered such that fate was compelled to deal him a good hand, but George being his own worst enemy was unable to play it right.

As a boy, Warren lost his mother quite early and at about 10 years of age joined his father, a government herder in New Mexico. While attending a herd of horses, the Warrens were attacked by Indians. The father was killed while George, though wounded, was taken captive.

He was their prisoner for 18 months when some prospectors traded 15 pounds of sugar to the Indians for him. Warren remained with these men for sometime, learning the "art" himself. (Hart, 1926).

After his agreement with Dunn in the late summer of 1877, Warren and several acquaintances from Tombstone went to the Mule Mountains, located a number of claims and established the Warren Mining District (Hart, 1926). None of the fortune that was to flow from the Copper Queen, one of the world's greatest mines, was to be for George.

Having located the dozen or so claims in the district along with others, Warren had but a one-ninth interest in the Copper Queen. This, according to legend, he lost in a race sometime in 1879. Warren and a George

Atkins had been drinking in Charleston, the milling town for the Tombstone area.

Warren claimed he could run a hundred yards, turn a stake driven into the ground, and run back faster than a man on horse back, a trick he had seen the Apaches perform as a youth. There was just one problem, drink had changed the distance to be run, in his mind. The race was lost and with it his share of the Queen, a loss that may well have been worth several tens of millions of dollars (Duncan, 1911).

After this, things only got worse for George. The remainder of his property was taken into "protective custody" by some unscrupulous associates when he was charged with insanity. Once relieved of his remaining property he was released. The cure obviously occurred only when his money was gone.

Warren then went into Mexico where he sold himself into peonage for money to work his latest discovery. Judge G.H. Berry, hearing of this went to his rescue, paid the indebtedness and returned George to Bisbee. Here, he earned a precarious living with some help from the Copper Queen Mining Company. Most of the time he spent doing odd jobs around saloons for a drink of whiskey.

He died in about 1895. The object of pity and disgust, he was soon forgotten.

The Copper Queen

It has been often said that great mines are made, not found. If this is true, the high grade mass of ore in the Copper Queen did little to slow down the making of this truly great mine. High grade, it seems even then, could cure a host of ills.

It didn't take long for the scattered, small showings of cerussite to be worked out. The interest of the miners quickly turned to the copper stain on the hillside. An open cut four feet wide and ten feet in length was made. Rich ore was cut at its end and one-half ton was removed that assayed 22% copper (Duncan, 1911).

In spite of this good showing these early owners lacked faith in the Copper Queen. James Douglas, whose role in this marvelous mine will be described later, remarked in an address given in 1912:

"The men who opened the cut, acted the fool, as most prospectors do they made a hole and ran through rich ore at the end of the hole, and so they thought it wiser to stop and get what money they could rather than spoil the prospect altogether [by mining through the ore] and get nothing and therefore, the Copper Queen mine was sold for \$20,000" (Douglas, 1912).

His condemnation was not total, however, as he continued:

"I could not have thought well of it at that time, because we professional men thought that [ore in] limestone was invariably a fake and was simply placed there by Providence in order to delude us . . . Somehow or other, I have a certain faith in Providence and feel that it doesn't play jokes . . . I took quite a liking to the Copper Queen."

In spite of his "liking", faith in the value of this extremely remote, unusual deposit remained shallow in the owners' minds. They had but one thought in mind and that was to sell.

So it was that in the spring of 1880 the Queen was optioned to Edward Riley for \$20,000. Riley, a lawyer by profession, had made a number of unsuccessful mining investments just before this and had no money of his own. As Douglas put it "[he] was worn down to where there was hardly any soles to his feet, and he had to borrow some money from Zeckendorf in order to go to San Francisco to see if he could float this mine in the Mule Mountains" (Douglas, 1912).

In San Francisco he succeeded in selling the Copper Queen to Messrs. Martin and Ballard, through the mining firm of Bisbee, Williams & Co. for \$20,000, taking his remuneration in half interest. Bisbee, Williams & Co. were prepared to recommend the purchase, in as much as Mr. Lewis Williams of the firm had already seen the property.

With this change in ownership mining began in earnest. To this point, the ore had been hauled to the West Coast by 24-mule team, then sent to Wales for smelting. To eliminate this terrible expense, a small smelter was erected under the direction of Lewis Williams, while his brother Ben assumed responsibility for the mining.

With good management in place and an ore grade of 23% copper (Douglas, 1909), the mine was an immediate success. The little furnace at the bottom of the hill was yielding almost one pound of copper for every four pounds of ore treated.

Two other mines had also briefly operated during the very early years of Bisbee. The Copper Prince Mining Company had several claims adjacent to the Copper Queen to the north and west. Here the Prince exploited one of the very few outcrops of ore in the district. Over all, the grade and tonnage of this mine were low compared to the Queen, but the operators were aggressive. Using the hated law of the Apex, the Copper Prince followed the ore well into Copper Queen ground. They were finally stopped by a suit. The controversy was settled with the purchase of the Prince property by the Copper Queen.

The other mining effort was by the Neptune Company. While the ground they held was eventually shown to be very rich, the Neptune produced little copper. Much of the capital owned by the company had been spent on a smelter 15 miles away, on roads, and a pretentious house (called the Castle) for its superintendent, Colonel Herrington. With little money left for exploration the company could not meet its obligations. The property was disposed of at a sheriff's sale to interests favorable to the Copper Queen (Douglas, 1909).

James Douglas and Phelps, Dodge and Co.

Dr. James Douglas was a most unlikely figure to bring success and fame to Bisbee. A cultured man and a Canadian by birth, Douglas was educated abroad to be a Presbyterian minister, a role he never filled. His early years were spent in many occupations including working in a Canadian asylum (Langton, 1940). (Joralemon, 1973, suggests working with the insane prepared him for his Arizona experience.)

In any event, Douglas entered the mining business in 1872 by examining the California mine in Gilpin County, Colorado for some of its directors. From this point his life would be tied to mining until its end some 46 years

later. To be sure the career of this most eminent "engineer" was not without its problems. Indeed, for the first decade there were no successes, just varying degrees of failure. The metallurgical plants he was in charge of in Quebec and later Phoenixville, Pennsylvania were total disasters.

Yet it was to this man that the principals of a New York mercantile house, Phelps, Dodge & Co., came for advice. Messrs. Willis James and W.E. Dodge asked Dr. Douglas to investigate several mines in Arizona and advise them as to their value. The mines were the Longfellow near Clifton and the Atlanta claim adjacent to the Copper Queen.

Making the requested examinations, Douglas recommended the purchase of the Atlanta for \$40,000 even though no ore was on the surface or in any of the very shallow workings. He did, however, caution his employers "that the risks were too great to be taken by a purchaser who was not able and prepared to lose all that he had invested" (Douglas, 1909). James and Dodge accepted the risk, a move that they would, for the short term, regret.

Douglas himself was placed in charge of exploration on the Atlanta claim. An anomaly in this rough, primitive camp, he was well educated, cultured, and sensitive to the needs of others. Though often monetarily poor, he was a man of exceptional integrity. When asked about his fee for examining the Atlanta, and given the choice of cash or a share of the mine, he reflected, "the cash was greatly needed, but I told them that as I had advised them to take more than an average risk, I would share it with them. And on that sudden impulse and hasty decision depended my whole subsequent career—successful beyond anything I had ever dreamed of" (Langton, 1940).

For over two years Douglas searched and explored, sinking prospect holes on small bunches of ore wherever they could be found—two years of vexation and disappointment. Having spent \$80,000 on these effects, James and Dodge were thoroughly disheartened—not a single car of ore had been produced.

It was now spring of 1884, the neighboring Copper Queen orebody had suddenly pinched out and only 90 days of ore remained. All efforts at the Copper Queen to find an extension of the ore failed. Douglas still could not believe that only one orebody was here—surely others were nearby. So it was that James and Dodge, with much misgiving, committed a final \$15,000 for a 400-foot shaft on James Douglas' faith. Douglas reflected, "John Prout and I selected the site where the shaft was to be sunk. But long before it reached the 400-foot level, the gloom which hung over both companies had been dissipated, for at 210 feet from the surface the shaft penetrated a very rich orebody, which was almost simultaneously entered by the level being driven east from the foot of the Copper Queen incline. The Atlanta shaft was sunk for 200 feet through ore" (Douglas, 1909).

To preclude litigation over the ownership of these new ores, the Copper Queen and Atlanta companies merged into the Copper Queen Consolidated Mining Company. The terms were more favorable to the owners of the original Queen than they might have been had not Douglas' ill luck still been in place. A drift from the

400-foot level of the Atlanta was run into the hill through the only block of waste in what was to be the great Atlanta orebody. It was one of the largest and most productive masses of ore ever discovered in the region.

This aside, the Copper Queen Consolidated Mining Company (C.Q.C.M.Co.) began buying property to secure its future. Over the next several years even in the face of very low copper prices the C.Q.C.M.Co. invested all they could in the claims of the district, often with some misgivings as some of the properties purchased were well beyond the reach of the known ores. Even at this, though, their faith in the district was not strong enough.

Mule Gulch Becomes Bisbee

During these years, the camp now called Bisbee after DeWitt Bisbee of the firm Bisbee, Williams & Co. in San Francisco, had its problems. The threat of Indian attack was still very real. Often were the times when the mine whistle would sound the warning: Apaches had been sighted! Men would grab their rifles while the women and children sought safety in the Copper Queen mine where supplies of food and water were kept for such emergencies.

While the town itself was never attacked, many of the nearby ranches were. In June of 1885, Billy Daniels, a deputy sheriff of Bisbee, and several other men were ambushed at the mouth of Mule Gulch. Daniels was killed but the others escaped (Duncan, 1911).

The often savage acts by the Indians were no match for the heinous crimes the early citizens of Bisbee suffered at the hands of their own. From its first murder in August 1880 until the formation of a citizens vigilance committee for public safety, the "Forty-five-sixty" in March of 1891, nearly two dozen people were shot down. The "Bisbee Massacre" of December 8, 1883, was the most tragic of these crimes.

In hopes of getting the mine payroll, five masked men robbed the Goldwater and Castaneda store, where the payroll was to be deposited upon arrival. While three men went into the store, the others remained outside guarding the street. Johnny Tappiner, a splendid young man, stepped unawares from the Bon Ton Saloon and was shot. Coming out of Joe May's saloon at the same time, a man named Howard was shot. Tom Smith, a deputy, immediately commanded that the shooting stop. He was shot twice and killed. Mrs. Annie Roberts, an expectant mother, was killed when the outlaws fired through the open doors of her restaurant. Running out of the Azurite Saloon, J.A. Nally was shot and so seriously wounded that he died within a few days (Duncan, 1911).

For all their violent actions, very little reward was to be had; the payroll had not yet arrived. Taking all they could find, \$600 and a gold watch, they fled to the east. The stage with some \$7,000 in payroll money arrived less than an hour later.

A posse was formed and the trail of the outlaws found. Just outside of Mule Gulch, one John Heath, an early volunteer to the group, tried to persuade Deputy Sheriff Billy Daniels that the bandits had turned north. Daniels, unconvinced, led the posse across the Sulphur Springs Valley to the Chiricahua Mountains, while Heath and another man went north.

The outlaws had returned to a prospector's cabin where just a few weeks earlier they had planned the crime. Dividing the loot, they then separated. Daniels, after a discussion with a prospector, was told the names of these desperados and learned that the man who masterminded the whole affair had not returned with them; his name was John Heath. Daniels sent word to arrest Heath and continued on in pursuit of the others.

The outrage that followed the crime united many people in the effort to capture the remaining five. Within a few weeks, their work was finished and all were confined in the Tombstone jail. One was captured in New Mexico; two near Clifton, Arizona; one in Chihuahua, Mexico; and the last in Sonora, Mexico.

All five of the outlaws were tried together, found guilty of first-degree murder, and sentenced to be hung. Heath was tried separately, found guilty of second-degree murder, and sentenced to life imprisonment. This so angered the people of Bisbee that a group went to Tombstone, removed Heath from the custody of the sheriff, and lynched him from a telegraph pole. To the end, Heath swore his innocence. The general acceptance of this action is shown by the coroner's jury verdict that: "We the undersigned, a jury of inquest, find that John Heath came to his death from emphysema of the lungs—a disease common in high altitudes—which might have been caused by stangulation, self-inflicted or otherwise" (Hankin, undated).

Another lynching by the citizens of Bisbee had an unusual and lasting effect. Hung for the killing of a defenseless man in the Can Can Restaurant over the affections of a woman, the body of the murderer was still dangling from a tree at the base of Castle Rock when a New York director of Phelps, Dodge and Company came to see the mine. The director was horrified and convinced that such barbarism could only be the result of unenlightened minds. After returning to New York he sent books and a librarian to Bisbee. Thus Bisbee's library was started, in the hope of encouraging a more cultured, civilized community. Phelps Dodge continued to render this service for 90 years.

Fire, Flood and Pestilence

Bisbee grew quickly once its success and future were assured. The main street was lined with buildings of every manner, housing merchants, restaurants and saloons. The great majority of the structures were frame in construction, each as close to the next as possible often sharing a common wall.

Many of the hillsides had sprouted crops of miners' homes, stair-stepping their way up the steep slopes. Few had yards; space was just too valuable to be so frivolously used. Almost all the homes were made of wood.

The results of this close building were quite predictable if not inevitable. Here, the misfortune of one soon became the misfortune of many. Three times in its early years Bisbee was ravaged by fire and each was more devastating than the last.

In February of 1885 the first of these fires consumed much of the business district and threatened the smelter as well as the Copper Queen mine. Only determined, brave action saved the works and, of course, the jobs of the miners.

The second fire sowed the seeds of destruction in June of 1907. This time the closely packed shanties on Chihuahua Hill were consumed. Wind-fanned, the flames threw off such terrific heat that the fireman were kept at bay. Only when the miners used dynamite to cut fire breaks did the fire yield control. More than 100 houses were lost and 400 people were left homeless.

Lastly, in October 1908, Bisbee's most disastrous fire broke out again, in the business district. Racing along the canyon, every building on Main Street to Castle Rock was consumed. Once again dynamite had checked the path of the fire. A large part of the residential area on Clawson Hill was also swept clean with few houses escaping.

A full three-quarters of Bisbee had gone up in smoke. Hundards of people were homeless, but the process of rebuilding began immediately. As before, those structures lost were replaced by finer, more durable buildings. Brick and masonry work rose from the ashes in buildings much more handsome than the originals.

The steep hills that surround Bisbee were once covered with oak and juniper trees that gave way to Apache pines near the peaks. Once these trees were removed to fuel the fires of home and industry, the stage was set for recurring disasters.

Typically, the late weeks of July and all of August brought rain, rain that fell in torrents giving life to this normally dry land. But with nothing to check the waters the summer rains often brought death to Bisbee.

The narrow canyons were filled with homes and businesses, lining the road that was the only conduit for the rain waters. Down this pathway would come torrents of water, mud, and debris, often sweeping the frail houses from their pinnings. Several times the unfortunate residents of these homes were lost along with structures. Some were never found.

Finally, after a particularly destructive flood in 1908, a drainage channel was built along the canyon bottom. Cutting in some places, filling in others and covering parts with stores as well as homes, the ditch successfully brought this threat to an end.

With the growing population crowding into the narrow canyons came sickness and disease, the insidious offspring of poor sanitation. From 1888 to 1900, hundreds died from typhoid fever. Stricken miners lay on canvas cots in Brewery Gulch and along Main Street, their uneasy but brave partners fanning them to reduce their fever (Cod, 1938).

It was several years before the source of contamination was found to be in the shallow wells that lined the canyons. Fortunately, one well in upper Brewery Gulch was found to be free of contamination. So for more than a dozen years the precious fluid was sold house to house, carried on the backs of burros in canvas bags, and priced at five cents a gallon. Shortly after the turn of the century, water was pumped to the camp from a fine well field about nine miles away at Naco, Arizona, developed by the Copper Queen.

The Queen Builds A New Smelter

During the years immediately following the merger of the two companies, the price of copper began to fall. By early 1886, it was selling for a trifle under eight cents a pound, down from the 13 cents a pound at the time of consolidation.

Production was at 500,000 pounds per month which was all two small 36-inch, water-jacket furnaces could produce. There was little profit to be had at this rate and at times a small loss was incurred. As a result, the company had insufficient monies to improve the facilities. At this time James and Dodge purchased the interest held by the original Copper Queen owner, thereby achieving control of the mines.

Not only did they have the courage to buy those interests, but they advanced the company the needed funds to build a new smelter with a capacity of 1,000,000 pounds per month. It was hoped the increased production would allow a profit. The mines were closed, except for some for dewatering and exploration work, for nearly a year.

By the spring of 1887, the new smelter's four furnaces were complete and blown in during May of that year. In all, the C.Q.C.M. Co. owed James and Dodge about \$300,000 (Douglas, 1909). Were it not for the efforts of a French syndicate's efforts to control the price of copper, it would have taken a number of years to repay this debt. But, three years of sales were negotiated at 14¼, 13¼ and 12¼ cents. The \$300,000 debt evaporated like the dew (Douglas, 1909).

A Railroad is Built

The new plant, while much more efficient, was not the total answer. A need for cheaper transportation was even more pressing. Finished copper had to be transported out and thousands of tons of coke for the smelter as well as a million board feet of timber for the mines needed to be brought in each month. A railroad to service Bisbee was the only answer.

Late in 1887, Douglas called upon a Mr. Nickerson who was then president of the Atchison, Topeka and Santa Fe railroad. His hope was to persuade the Santa Fe to build the line from Deming, New Mexico, via Bisbee to the port at Guaymas, Sonora. Douglas was treated with supreme indifference. The Santa Fe built a line south from Benson to reach the Mexican port.

There remained no option but for the Copper Queen to build a railroad. At first, a narrow gauge road with grades up to 10% crossing the mountains was considered. Wisely, it was rejected for a much longer, standard gauge route that skirted the mountains. By the end of 1888, the Arizona and Southeastern Railroad, as it was called, reached from Fairbank to the mouth of Mule Gulch, some 40 miles.

Later, a second dispute with the Santa Fe over the comment "that it was not running its railroad for the benefit of the Copper Queen" pushed the A.&S.E. to Benson where a connection was made with the Southern Pacific Railroad (Myrick, 1975).

A legislated change in 1901 moved control of the road from the Copper Queen mining company to a holding company, the El Paso and Southwestern Railroad. True to its name, the railroad tied into El Paso, then to the Rock Island Line at Tucumcari, New Mexico, and finally to Tucson for a full 772-mile route (Myrick, 1975).

The El Paso and Southwestern Railroad came to a voluntary end in 1924 with a favorable merger with the Southern Pacific Railroad. The shareholders of the E.P. & S.W. received stocks and securities worth more than

\$60,000,000 (Myrick, 1975).

The Smelter is Expanded

As before, the mines of the C.Q.C.M.Co. continued to expand, following the mineralization down dip. Here changes in the nature of the ore began. The early ores had been totally free of sulfur and were easily rendered in single-step smelting furnaces. Now, increasing amounts of sulfides were found mixed with the oxidized ore; also a number of unoxidized orebodies had been discovered.

As the quality of the black copper bars fell, the need for an improved smelting works became imperative.

In 1892, James Douglas and his son Walter went to Europe to investigate the Mankes-Bessemer smelting process. So impressed with the principle was he that immediately upon his return he had one designed for the Copper Queen Company. By 1894, after a number of modifications, Douglas had perfected a method of smelting sulfides that forever changed the way these difficult ores were handled. To a large degree, this method is still basically the one by which most of the world's copper is smelted.

After the change in techniques, copper production doubled in two years and by 1899 more than 3,000,000 pounds per month were being produced. Unfortunately though, the crowded conditions at the smelter site next to the Czar shaft precluded any expansion.

A New Smelter is Built

A new smelter was a must; the flow of ore from the Copper Queen mines seemed limitless and quite able to support a new facility. The principal owners of the Copper Queen mine had also acquired the mines near Naco, some 70 miles south of the Mexican border. Therefore, the logical place for a new smelter was where it would handle the ore from both mines. A site in the lower end of the Sulphur Springs Valley, right on the Mexican border, was selected. Here was limitless water and space. A townsite was laid out to support the new facility and it was appropriately named Douglas in honor of the man who had so ably led the Copper Queen for 20 years. The new works had a capacity of 10,000,000 pounds per month and cost \$2,500,000 to build (Douglas, 1909). Late in 1903 it was blown in, and the old Bisbee facility was completely scrapped.

Another Mining Group Comes to Bisbee

While Dr. Douglas had always been a proponent of an aggressive acquisition policy in the district, there was one opportunity that was lost, though under peculiar circumstances. The Irish Mag claim, named for a woman of the red-light district in upper Brewery Gulch, lay far to the east of any known ore and was generally considered to be of little value. A group of eight other claims and the Irish Mag were owned by a miner named Daly. Evidently of unsound mind, he had threatened the life of Ben Williams and told Douglas that he had been hired by a group of conspirators to kill him. Shortly afterwards, Daly offered his claims to Douglas for \$10,000, a proposal which Douglas was anxious to accept. Williams, however, thought it would look like they had succumbed to blackmail and threatened to resign if the purchase was

made; so it was declined.

Soon afterwards, in April of 1890, Daly shot and killed W.W. Lowther, a deputy sheriff who was trying to arrest him for assault. The last seen of Daly was when he fled up the side of Sacramento Hill (Douglas, 1913).

As Daly was a fugitive, there was little chance that he would return to claim his property, so a host of claimants suddenly appeared including a "wife" and "son." Daly's common-law Mexican wife, Angela Diaz, had advanced him money to do assessment work; for this reason title was vested by the Supreme Court of the United States to her in 1899. During the long legal battle, she had sold her interest to Martin Costello, a Tombstone saloon keeper, for \$1,800 (Cox, 1938). After the favorable decision, Costello sold the property for \$500,000 to the Lake Superior and Western Development Company.

Long before the legal battle was over for the "Mag's" ownership, the potential value of Daly's claims became well known. Development on the 800 level of the Spray shaft had found fine orebodies near the Irish Mag sideline. Captain Jim Hoatson came to the district looking for a good property to purchase on behalf of the Lake Superior and Western Development Company. Nothing looked as good to him as the barren, hard limestone knob called "Mag Hill."

In the Calumet, Michigan, area, everyone knew Cap'n Jim and respected his knowledge, so before long he had the money to buy the claim and sink the needed shaft. But for all his knowledge, Hoatson failed to realize just how deep the ores really were, and that it would cost much more to mine the Arizona limestones than it did the rocks in Calumet. On the ragged edge of bankruptcy, Cap'n Jim went back for more money, money to sink just a little deeper, where the ores must surely lie. So it was, on the faith of an uneducated miner, that some of the great names in the steel and iron business invested many thousands more. Their confidence in Jim was rewarded. After finding small bunches of ore on the 850 and 950 levels and building a modest smelter, a fabulous orebody was cut on the 1050 level in 1902 by the Northeast drift (C.&A., 1916). Before the story of the Irish Mag was finished, nearly \$10,000,000 in dividends were paid from the 15 acres that made up the claim.

The Calumet and Arizona Mining Company absorbed the Lake Superior and Western Mining Company and set about to develop its vast holdings of favorable ground.

Once the future of the Calumet and Arizona Company had been assured by the riches that flowed from its mines, Tom Cole, its president, began to buy all the ground he possibly could. Douglas, not to be outdone, paid a fortune for property he could have had for a trifle just a few years earlier, had his faith only been stronger. In the ensuing scramble absolutely undeveloped ground went for as much as \$40,000 an acre. Stakes were high in this copper game; even after purchase, hundreds of thousands of dollars had to be spent sinking a shaft of up to 2,000 feet before the value (or lack of) could be determined.

All the efforts of Cole and the C. & A. could all have been for naught save for the wisdom and absolute honesty of James Douglas and the partners of Phelps, Dodge and Company. The law of the apex had been firmly established

in the west by the famous Eureka and Richmond ruling. This law, simply put, means that whoever owns the apex of a continuous vein, lode, or ore formation, has the right to claim ownership of all ores on its dip, even if the vein passes under other claims at depth. There is little doubt that the Copper Queen Company could have claimed for its own all of the ore found by C.&A. and been upheld in court. This would, of course, have been allowed only after bitter litigation at enormous expense. But Douglas said, "We must decide which industry is to prosper here—that of mining or that of lawyers" (Langton, 1940).

So the common boundary law was mutually agreed upon and Bisbee was spared the grief and hatred that so scarred many other districts. Along with the agreement, free access to each other's mines was granted so that the discoveries of one could help the other. Thus began the cooperation between companies and their respective engineers which was heretofore unknown. Those of us in the profession today are still reaping the benefits of the shared technical progress that this spirit has brought to the industry. Perhaps this is the greatest contribution Dr. James Douglas made to mining.

A third, though much smaller, company emerged about this same time. To the south of the Copper Queen lay a small block of claims controlled by a Duluth company. These claims were owned by Lem Shattuck, a long-time resident and proprietor of the Capitol Saloon.

Shattuck lacked the funds necessary to develop this property so, putting up the claims as his contribution, he joined others to form the Shattuck and Arizona Copper Company.

The venture was a risky one. A C.Q.C.M.Co. mine, the Uncle Sam, at the edge of the Shattuck ground had gone down 600 feet and drifted in all directions looking for ore with little success. Undaunted, the mid-western investors committed the necessary money.

Once again luck sided with outside capital. After sinking only a few hundred feet and driving a small amount of drifts, good ore was found. Continued development exposed more and more good orebodies. The success of a small but adventurous group of investors was assured.

A few years later this same group gambled once again. Everyone knew that the Dividend Fault cut off all the ore in the district (this largely is true), so any claim on the wrong side is, then, of little value, right. Not necessarily because the fault dips very steeply and there happened to be a concentration of ore along this massive structure. At the time of their activity this was not known.

The Denn Shaft was begun with full realization of the financial risk, but perhaps without an understanding of what nature had in store. Nearly a thousand feet of post-ore sediments covered the favorable unit, so a deep shaft was obviously necessary.

Bad ground from the massive faulting made sinking slow and expensive. Water was found in amounts that were never expected. Every round had the potential of breaking into a flow that would flood the mine and several did. Good ore was eventually found on the 900-foot level and this mine too became profitable under the name of the Denn and Arizona Mining Company.

By the mid-1920's the two were combined to form the

Shattuck-Denn Mine Company. While this company was never large it had two very rich mines that rewarded their investors.

Bisbee Comes of Age

By the first years of this century, Bisbee had become a substantial town with more than two decades of successful mining to its credit. But it takes more than jobs to make a town. Necessities came slowly to the western mining camps and amenities often not at all.

Early on, the responsibility for providing both those things needed and those wanted fell to the Copper Queen. First, a store was provided to see that the residents of Bisbee were able to buy food and clothing of quality at fair prices. Even though it was a "company store", none of the unfair, almost enslaving practices so commonly a part of other such groups were ever a part of the Copper Queen store or its successor, the Phelps Dodge Mercantile.

To counter the annual epidemics of typhoid, diphtheria, and smallpox, that killed hundreds over the years, the Copper Queen built and staffed Bisbee's first hospital. Just as important, James Douglas worked hard to educate the people of Bisbee about poor sanitation, the principal cause of the epidemics. However, it was after 1900 before the epidemics ended, finally yielding to the combination of understanding and a public water system.

As previously noted, the C.Q. provided a library. They also constructed a church, the Y.W.C.A. (indirectly) and built, as well as operated, a fine hotel.

Through the Bisbee Improvement Company, the Copper Queen brought electricity, natural gas and telephones to the town. Even a good daily newspaper was developed for the community by the Company. While the paper was often criticized as an instrument of the Company, it filled an important void.

Later, the Calumet and Arizona Mining Company carried on the tradition set by the Copper Queen. The C. & A. built and staffed a second hospital, provided the community with a fine Y.M.C.A. and developed a new townsite called Warren.

In spite of its remoteness and the ever-present evidence of corporate power, Bisbee was never truly a company town. The community and its people were not just allowed, but encouraged to govern themselves and seek their own destinies. This most certainly contributed to the good relations the mining companies had with their employees.

Labor Problems

To this point, Bisbee had been singularly free of labor troubles, due principally to the efforts of the mining companies to provide a safe work environment, a pleasant community to live in, and wages comparable to what miners elsewhere were receiving. But in early 1917, just 2½ months after America's entry into World War I, a group known as the "Industrial Workers of the World" called a strike in Bisbee without a vote of the miners. Under threat and intimidation, by the third day about 80 percent of the 4,500 men employed underground were staying off the job (Loyalty League of America, 1917). However, members of the mechanical trades never gave any support to the agitators from the I.W.W., and within

a few weeks half of the men were back at work underground. But the "Wobblies," as they were called, persisted in their efforts to stop the mines with increased amounts of harassment. At this same time, most of the other mines in Arizona and Butte, Montana, had also been closed by this group.

With the vital war requirements of the red metal threatened by the effects of the strikes, it was obvious that nothing short of drastic action would end the work stoppage. Convinced, and rightly so, that a strike in a time of unprecedented national crisis could only be directed and supported by people of treasonable inclinations, a deportation plan was conceived. Secretly, 2,000 men from every profession in the camp gathered before dawn on July 12, 1917, to begin what they truly saw as their patriotic duty. At the same time, the telephone exchange and Western Union were occupied by interests favorable to the "Loyalty League," as the group called itself. The morning edition of the *Bisbee Daily Review*, delivered to all homes in the pre-dawn hours, warned that women and children should stay off the street that day.

From house to house, combing every street and alley, the armed and deputized forces of the "Loyalty League of America" swept the whole camp. Every known striker, agitator, or sympathizer was removed and marched to the Warren ball park. Here a court questioned each man: "Are you working? Do you want to work? Who can vouch for you?" A great many answered the questions appropriately and were released. However, 1,186 men were detained, loaded into cattle cars, and taken to a siding near Columbus, New Mexico. They were left with the warning that, should any return to Bisbee, they would most certainly be killed. The strikers were then abandoned by their guards.

For almost a month, the "Loyalty League" controlled the town until it was completely purged of the anarchistic "Wobblies". The actions of the "Loyalty League" were largely supported by the people of Arizona and the patriotic citizens of America.

There were, of course, those who felt this was an imperialistic act of the absentee mine owners who feared a loss of exaggerated war time profits. This typically vocal group, though very much in the minority, pursued every avenue in their efforts to see justice done, at least their form of justice. It was of no use. Charge after charge went unsupported by the courts. An investigation ordered by President Woodrow Wilson and conducted by Felix Frankfurter found no federal offense, while the Supreme Court of the United States determined that the participants had acted to enforce "the law of necessity."

Even today this event causes debate. One recent author (Byrkt, 1983) has chosen to judge the past in the context of the present—an unfortunate error. Using carefully edited references and poorly disguised innuendos he has found guilty those who were exonerated by the people of the time. It can still be said that what was done was for the best, a truly patriotic act.

The Post World War One Years

To this point almost all of the copper mined in the Warren district had come from the high-grade replacement

orebodies scattered throughout the Paleozoic limestones around Sacramento Hill. Now "Sac Hill" became the focus of activity.

Bulk mining and treatment of low grade ores by flotation had been profitably employed in several places in the West. Sacramento Hill had all the basic characteristics of these other deposits.

Phelps Dodge developed the Sacramento pit with pre-production stripping beginning in 1917. Ore was not produced until 1923 and continued through much of 1929.

The underground mines of the district continued to provide the bulk of copper produced. Phelps Dodge, Calumet and Arizona and Shattuck-Denn remained the dominant forces in the district, but their relative prominence had changed.

For nearly forty years the C.Q.C.M.Co., now the Copper Queen Branch of Phelps Dodge Corp., had mined the same ground and their reserves were nearly depleted. Much of the remaining tonnage was being mined by lessees in the Southwest, Czar and Halbrook mines.

The Calumet and Arizona had vast holdings of undeveloped ground. For them the twenties were golden years. Numerous fine orebodies were found in the Junction, Oliver and Cole mines. The best was yet to come. In the spring of 1929 an exploration shaft, the Campbell, far to the east of any known ore hit what was to be the largest orebody ever hit in the district. The Campbell orebody contained more than one million tons of 8%–10% ore.

As history has shown time and again, ore alone does not make a good mining company. The difficult times brought on by the great depression found the two major companies in very different positions.

Phelps Dodge, though with limited reserves, was in a

very good cash position. This was the result of exceptional management and high operating efficiencies. The Calumet and Arizona on the other hand had been less conservative. Her treasury was depleted from an overly generous dividend policy.

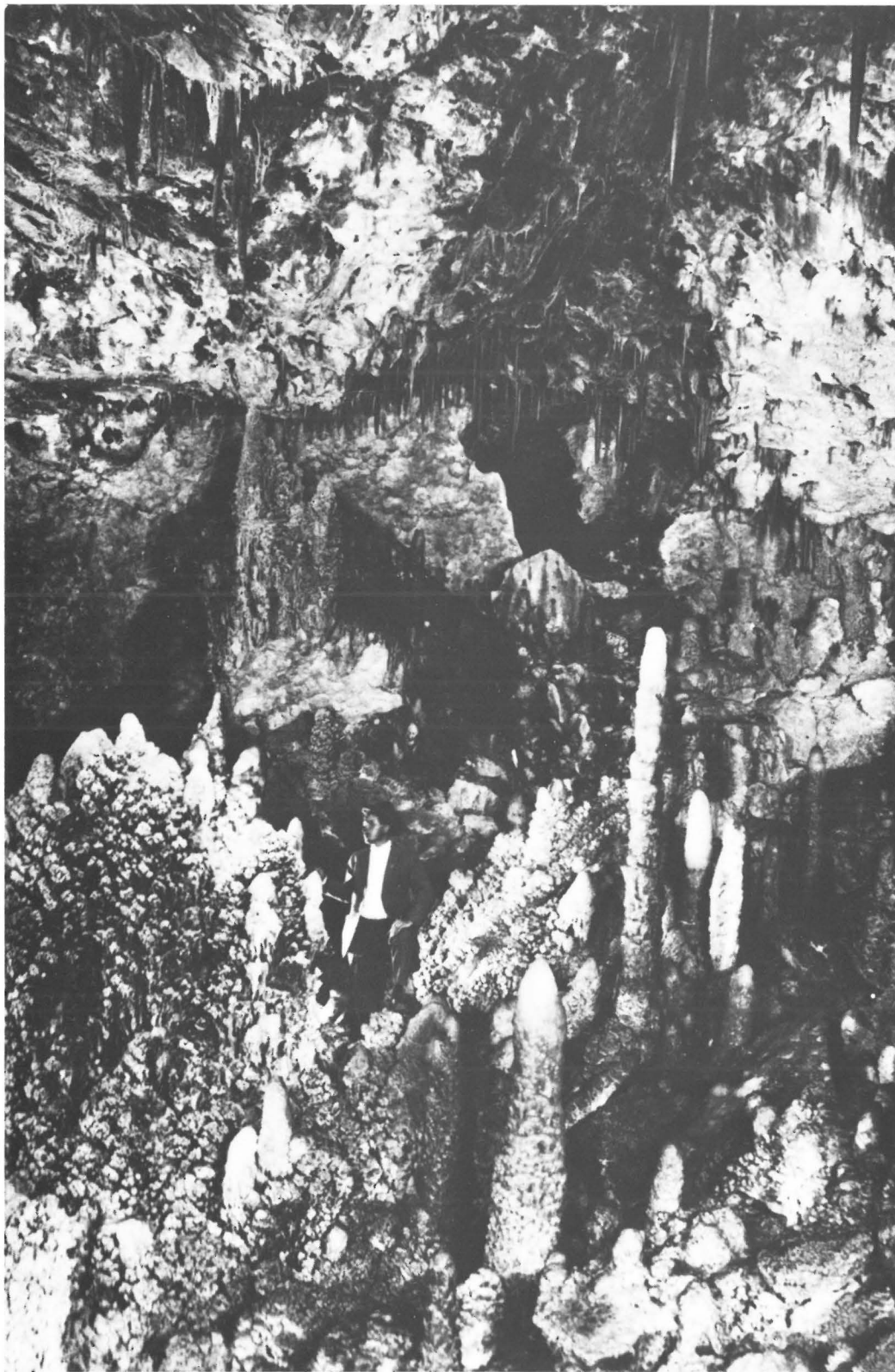
As a result, a merger was affected with Phelps Dodge the survivor. Once again the district was in the hands of those who half a century before had gambled on her and held faith.

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First smelter at Bisbee, c. 1883. *Bisbee Mining and Historical Museum.*



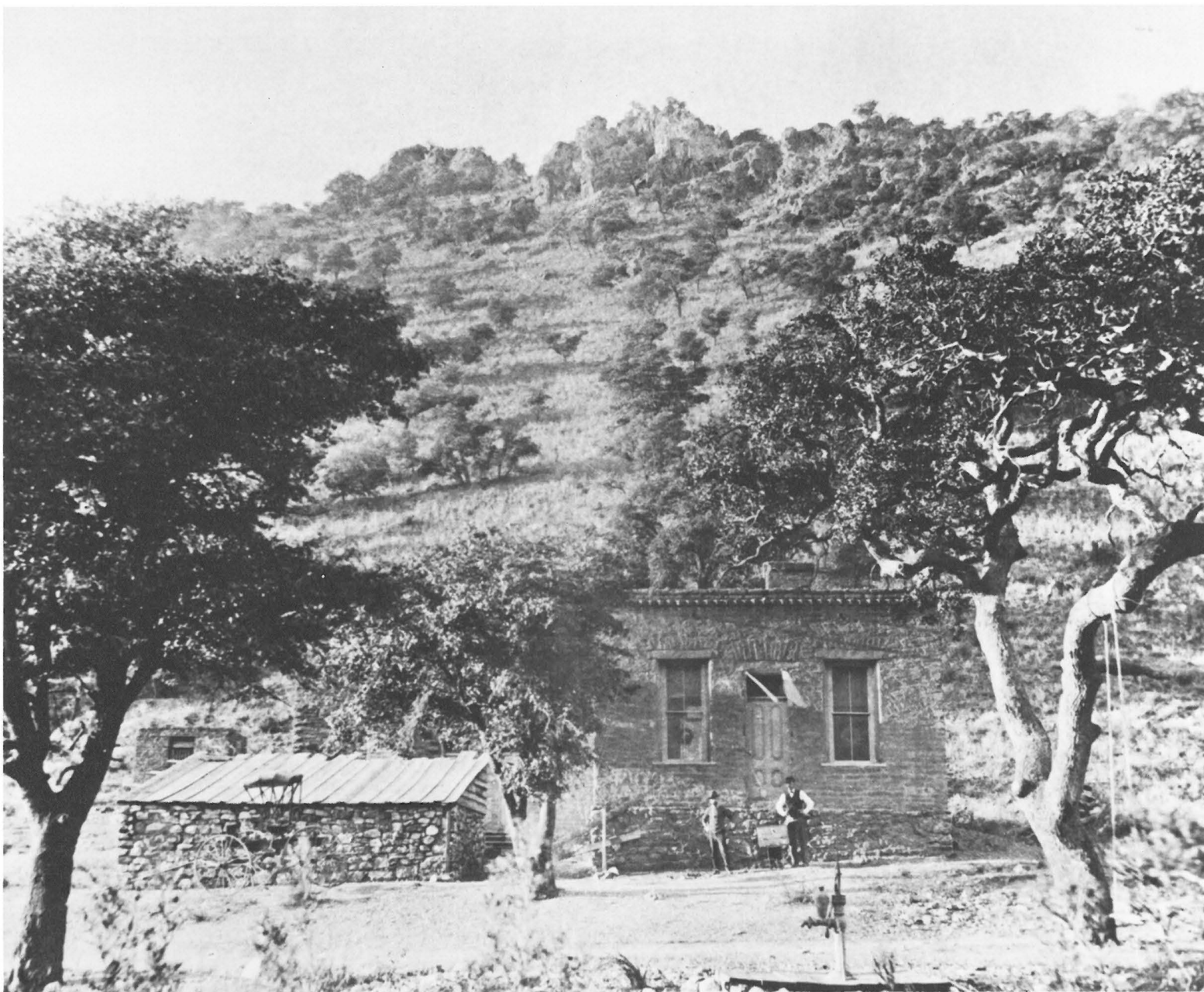
One of many natural caves opened during mining. This one is on the 300-foot level of the Shattuck mine. *Courtesy of Bisbee Mining and Historical Museum.*



Subsidence crack resulting from sulfide oxidation and reopened by mining, Warren district. *Courtesy of Bisbee Mining and Historical Museum.*



The town of Bisbee, 1903. Courtesy of Bisbee Mining and Historical Museum.



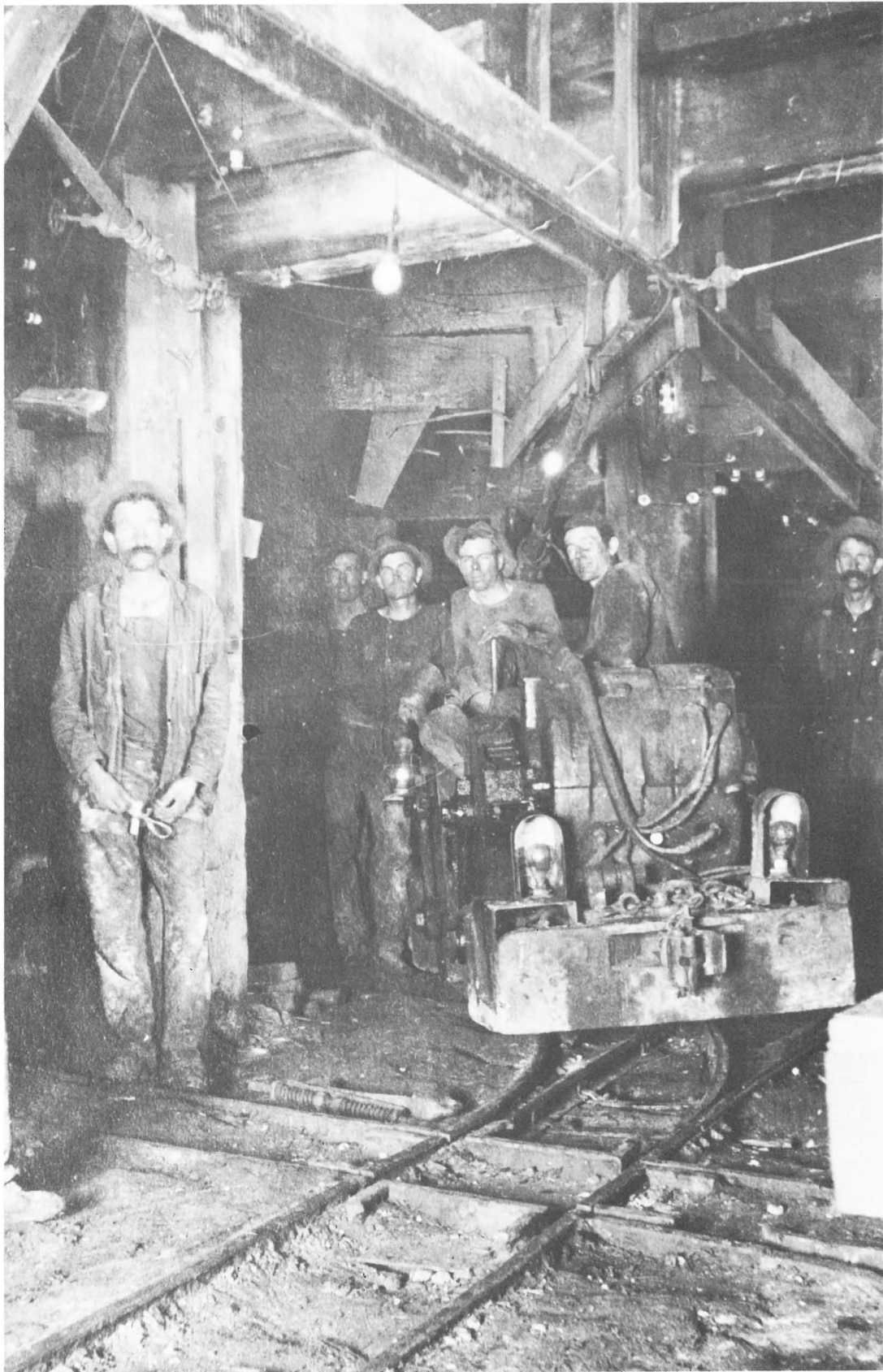
The Castle, home of Colonel Herring, Neptune Company Superintendent, c. 1885. *Courtesy of Graeme Collection.*



Czar Shaft and smelter. Note the smoke flume on the hill. Bisbee, c. 1900. Courtesy of Bisbee Mining and Historical Museum.



Drilling in a stope of oxidized ores, 1908. Courtesy Bisbee Mining and Historical Museum.



Electric trolley for ore haulage, Warren district, 1909. Courtesy of Bisbee Mining and Historical Museum.



Sacramento Hill—left center, Lowell Mine—center, Irish Mag Mine—right center, Spray Mine—far right, Holbrook Mine—lower right, 1902. Courtesy F.L. Ransome, U.S. Geological Survey.



Castle Rock where the fire of 1908 was stopped. Note the dynamited house in the lower right. Courtesy of Bisbee Mining and Historical Museum.



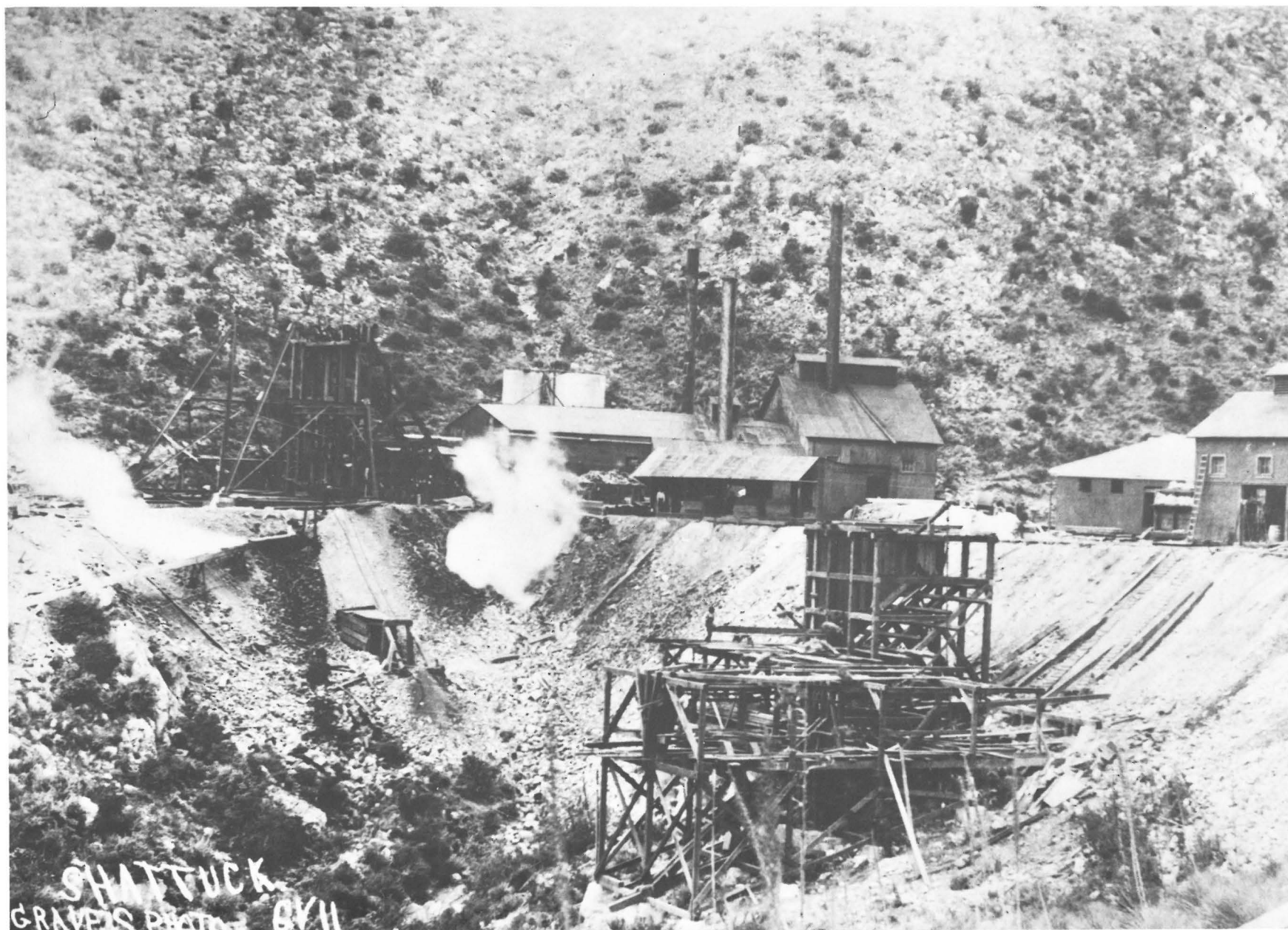
Flood of 1908 on Main St., Bisbee. Courtesy of Bisbee Mining and Historical Museum.



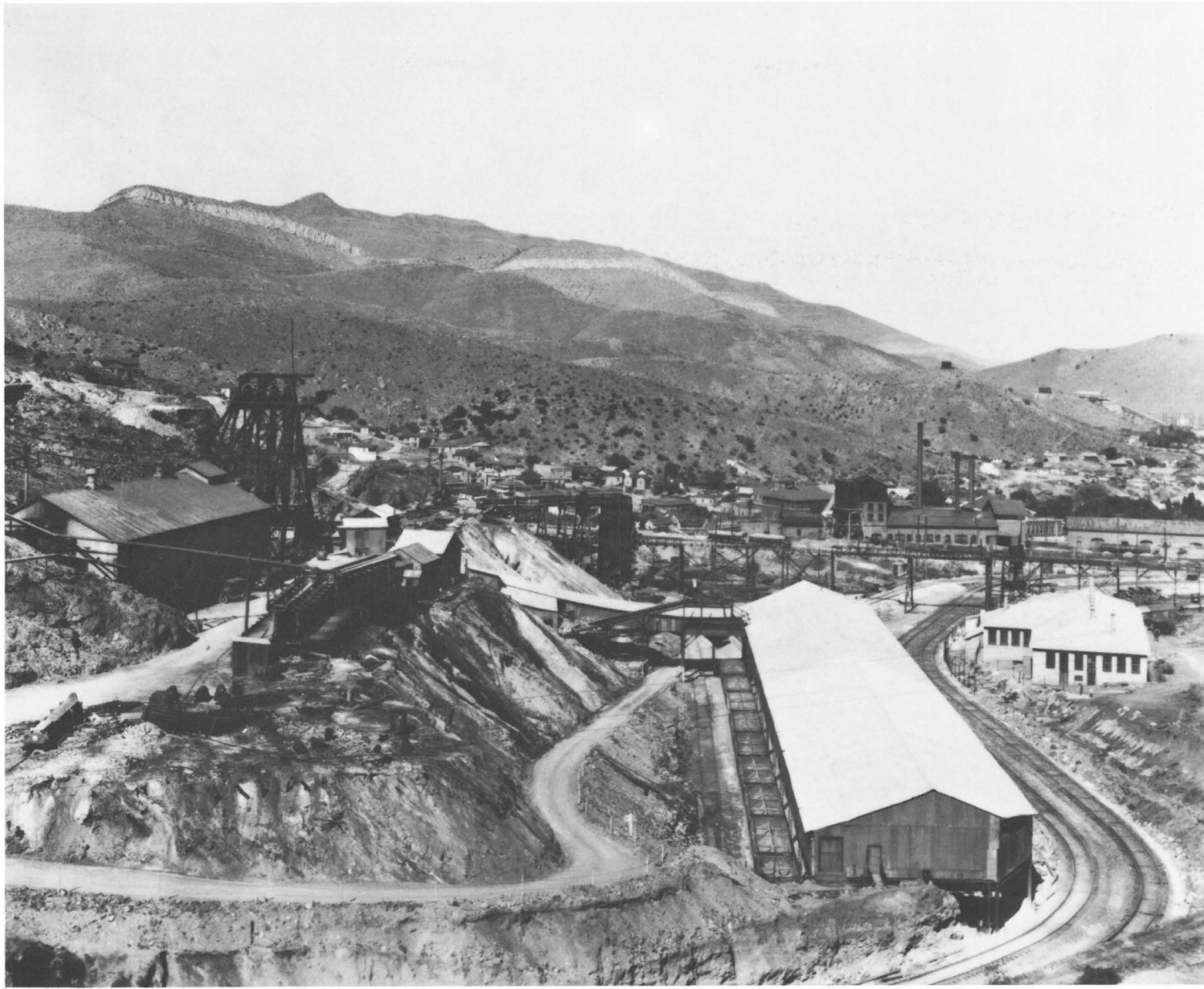
Drilling a round in a square-set stope, Warren district, c. 1910. Courtesy of Bisbee Mining and Historical Museum.



El Paso and Southwestern Depot in Lowell, c. 1910. *Courtesy of Graeme Collection.*



Shattuck Mine. Note the building of a steel headframe to replace the original wood structure—left center. In the foreground, the loading station from aerial tramway is under construction, 1910. Courtesy of Bisbee Mining and Historical Museum.



Sacramento shaft, the main hoisting shaft for the Copper Queen. Denn shaft at right center, c. 1920. Courtesy of Graeme Collection.



Campbell shaft headframe, 1926, before the Campbell orebody had been found. *Courtesy of Graeme Collection.*



Sacramento pit operations, 1926. *Courtesy of Graeme Collection.*



Timber yard with Junction shaft in background, 1927. Courtesy of Graeme Collection.

HISTORY OF MINING IN ARIZONA

EDITORS

J. MICHAEL CANTY
MICHAEL N. GREELEY

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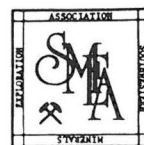


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