

Notes on Arizona Mining History from the Viewpoint of a Researching Mining Geologist

Mining Finance in Arizona in the 1800's.

Arizona is the anomaly in western states mining finance issues. Any collector or researcher of Arizona mining stock certificates certainly must notice the skewed nature of financing of Arizona's mines. As a truly western state, one immediately thinks that Arizona mines would be financed by San Francisco based interests, as were the mines of California and Nevada. But this was only the rule in the 1860's, after that it was the exception.

Arizona mines show remarkable patterns in their financing structures. After logging in much of the Garbani collection, it became abundantly clear that investor groups from specific geographic regions were making strong plays on various mining districts, particularly after 1875. Patterns began to clearly evolve – St. Louis, Iowa, New Jersey, New York and Philadelphia each had groups of investors heavily active in forming Arizona mining companies. Each of these geographic centers seemed to have developed their own investor pools to invest in Arizona mines and mining stock. While we observed this type of development in Colorado, it was to a much smaller degree. Colorado financed most of their own mines, with a population base that allowed fully developed business cycles to emerge. From these came investment capital. More importantly, Coloradans could get a better handle on the investment potential because they were *there* – they could go see for themselves if the mine was any good.

No such underlying business structure or population base was yet well developed in Arizona. While locals could look to themselves for limited local investment capital, mining investment capital had to be acquired elsewhere. San Francisco was an obvious choice, but after the massive, complete failure of virtually every 1863-4 public company with an Arizona mine by the late 1870's, San Francisco was less willing to invest capital. Other factors also played prominent roles. Among them were the constant Apache raids on mining camps, sometimes killing entire exploration crews. The region was unsettled, wild, and for a long time without a major transportation system such as railroads. As the railroads were developed, access to remote regions was increased, and exploration was renewed. By 1879, according to many authors, coinciding with a general settling down of Indian affairs after the death of Cochise in 1874, mining exploration was finally well under way.

Capital for mining ventures was an extreme risk, but was just what the stock promoters wanted. The American idea of "*get rich quick*" has pervaded our thought processes. The concept of a gold mine is like a lottery...throw out a few hundred dollars, and maybe you'll hit a rich mine and become instantly wealthy. The reality was horrifyingly scary. Prior to 1880, only a handful of mines in Arizona actually made real money – with consistent, profitable production. At the head of this list was the Silver King Mine at

Superior, which paid dividends for over a hundred years, though under several different company names, and had a few years of non-production interrupt an otherwise steady flow of money.

Midwestern and Eastern financial interests saw this as a perfect opportunity to explore and test a market that was basically otherwise kept in-house. Californians and Nevadans financed their own mines as a general rule, as did Colorado. But Arizona offered a new, plain, open playing field.

The eastern markets had developed mining stock exchanges. These were active exchanges, with firms salivating at the opportunity to find good mines. As Arizona opened up after 1879, each made serious efforts to find producing mines. Prominent among these were St. Louis, Philadelphia, and New York. Camden, New Jersey also played an important role, though they did not have their own stock exchange. A large pool of investors often controlled

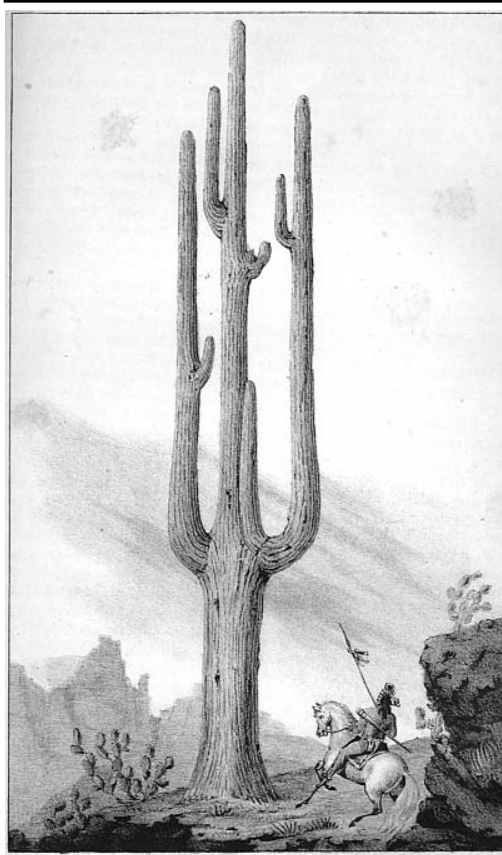
many mines, particularly in the Tombstone area.

The *Engineering and Mining Journal* also played a role by publishing the mining stocks on several of the exchanges. Their data concentrated on *dividend paying* mines, but also listed other stocks that had active trading. Inactivity in trading was the kiss of death. Inactive stocks got taken off the list, which made it tougher to sell to knowledgeable or sophisticated investors.

The eastern exchanges used a variety of methods to sell stock. Many times, a prominent personality became involved in one of the mining companies. This invariably led to a windfall in capital as well as other prominent men joining the Boards of the companies. A case in point is the Seven Stars Mining Co., which had Warner at its head, a wealthy successful eastern druggist (viz. Warner's Safe Cure). They got bankers, glass manufacturers, and industry men on the board, made great promises, and the stock shot up in value, only to see it tumble within a year. Without regular mine production or proven reserves, the escalation of the stock price formulated by eastern brokers was unsupportable and became the subject of intense mining media attack.

Sometimes companies were headed by individuals who had visited the mines. In

New York, as an example, former Arizona Territorial Governor Goodwin got a number of his friends together and invested in many mines. Occasionally strong financiers, such as Corbin, got involved in major mines, like the Tombstone M&MC. Tool manufacturers, bankers, tradesmen of every nature invested in Arizona mines. Virtually every sales method was used to sell stock, even with the "subscription" process that got money from women. Many of the companies never intended to make money. They were scams from the onset, existing only to mine the pocketbooks of investors. There are perhaps an above average number of these present in Arizona's history. The more remote a mine location, the easier to fool an investor.



Lith by E. Weber & Co., Balt. Taken from *Notes of A Military Reconnoissance...* by W.H. Emory, 1848, p73.

There were also the rare occasions where a company got a reputation as a scam company and bitterly fought a war in the press. Such was the case with the Phoenix Mining Co., which ultimately won the war with the press, by actually achieving gold production. They had fought off months of horribly bad press – pages and pages of letters, articles, and testimonials in the *Mining and Engineering Journal* and *Mining and Scientific Press*. It was one of the most public battles ever fought over a western mine, all started because New York stock speculators ran the stock price up to over \$15 *per share* while it was only a *prospect*. It took several more years before mine status was gained. The western press hammered the New York speculators for pumping the stock unjustifiably, because it had to crash since it was not a legitimate mine.

Land scams and mining scams became nearly commonplace, highlighted by the famous Peralta land grant case. One of the greatest land and mining scams in American history is part of the history behind the Casa Grande Land and Improvement Co. headed by Peralta Reavis. The company used fraud, forged documents on two continents and extortion to relieve people of their money by inventing a phony Spanish land grant known as the Peralta Grant. At stake was the future development of Phoenix and northern Arizona as a whole.

The common denominator in failing mining investments was the inevitable “cart before the horse”. Far too many of these investor alliances forgot that the most important thing in any company is a solid plan based on factual information and sound research fundamentals. In a mining venture, you need proven reserves, or a method to attain them. *Never* build a mill until there are sufficient reserves to mine and process. Most of the eastern companies built mills long before they even knew if they had a mine. Most of the properties were in prospect stage. Few understood the difference between prospect, possible ore, and proven ore. Many times a company would ship a few tons of ore to a smelter or custom mill for processing. These were important metallurgical tests, sometimes mistaken as production.

A detailed discussion of the stock exchanges can be found in *Mining Stock Exchanges, 1863-1900* by Marian Sears, 1973, though detailed discussion of the *business mechanisms* of mining stocks is only lightly touched. The mechanisms that drove the companies in their respective exchanges is something that only experience can reveal, and there is no book currently available that discusses this to my knowledge, hence this short section to help illuminate some of the concepts.

Researching Arizona Mining Companies.

Mining history is not the easiest of topics to research. There are lots of “experts” out there, but fewer still have participated first hand with careers in this great industry. Arizona mining history is

different from any of the other western states. It’s entire development was so different - ranging from the fact that it was acquired from two different purchases from Mexico; had a lengthy territorial status (the last in the continental US) with changing borders. The Native American peoples in Arizona were as diverse as any cultures in the world, rendering settlement and expansion difficult – whether a tribe or white settlement seeking expansion into new territory. There was significant influence from Spanish and Mexican explorers, miners, traders and warriors. Arizona has some of the earliest mines recorded in American history, dating back well before 1800.

Sometimes the *how* and *where* to look for information can be problematic. Anyone doing mining history research can use the traditional references for much of their work. But because of the remoteness and outright *danger* of reporting mining activity in Arizona, the written record is far different than that of California, Nevada, and Colorado.

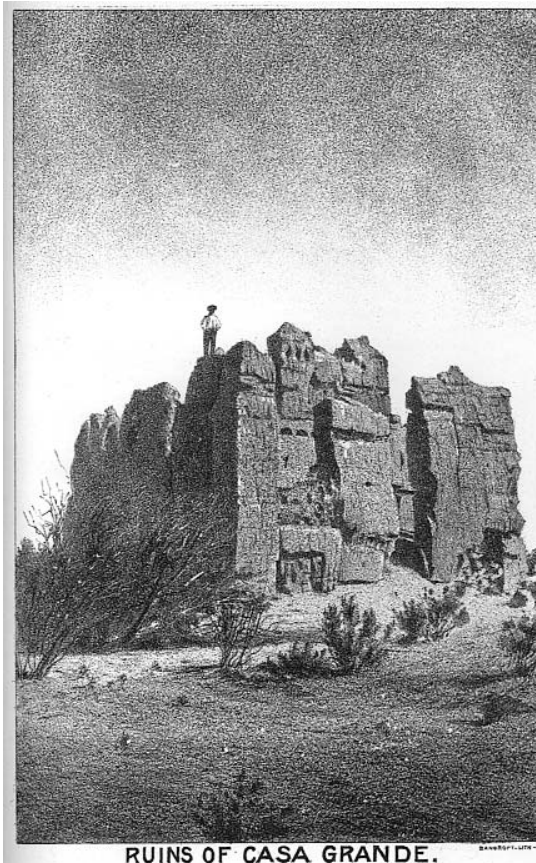
We found it easier to approach our research from a chronological basis. Many of these references held no indexes, so we had to make them ourselves. At the time of this writing, we have indexed *nine* key references, no small task. We wish there was time for at least six more.

Mines active in the c1600-1868 period.

There appears on the surface to be little information of the early mining history of Arizona, but, in fact, there is quite a bit. In recent years, scholars have worked to expand our knowledge base of these early mines. Publication of diaries has been the largest contributor, providing critical insights into the early periods. Advanced research of original Spanish records has brought to light much new information, and remains a topic of keen interest to mining scholars.

Every exploration venture through Arizona resulted in a written record of their activities and observations. Most of these are fascinating windows into history that make mandatory reading. Of particular interest is W. H. Emory’s *Notes of a Military reconnaissance from Fort Leavenworth, Kansas, to San Diego, in California, including parts*

of the Arkansas, Del Norte, and Gila Rivers; 1848. Emory was ordered to make a survey in 1846. Their topographical engineers were knowingly traveling through unexplored regions, “employed in collecting data which would give the government some idea of the regions traversed.” They were known as “the Army of the West”, “destined to strike a blow at the provinces of Mexico, and more especially New Mexico and California.” [Emory, pp7-9] Emory published his records in this book, which appears in five different editions, only one of which had a series of maps. Emory gives a general view of the mines he visited, and in some cases has an engraved illustration of the mining camps. This is our first view into white man’s mining in Arizona.

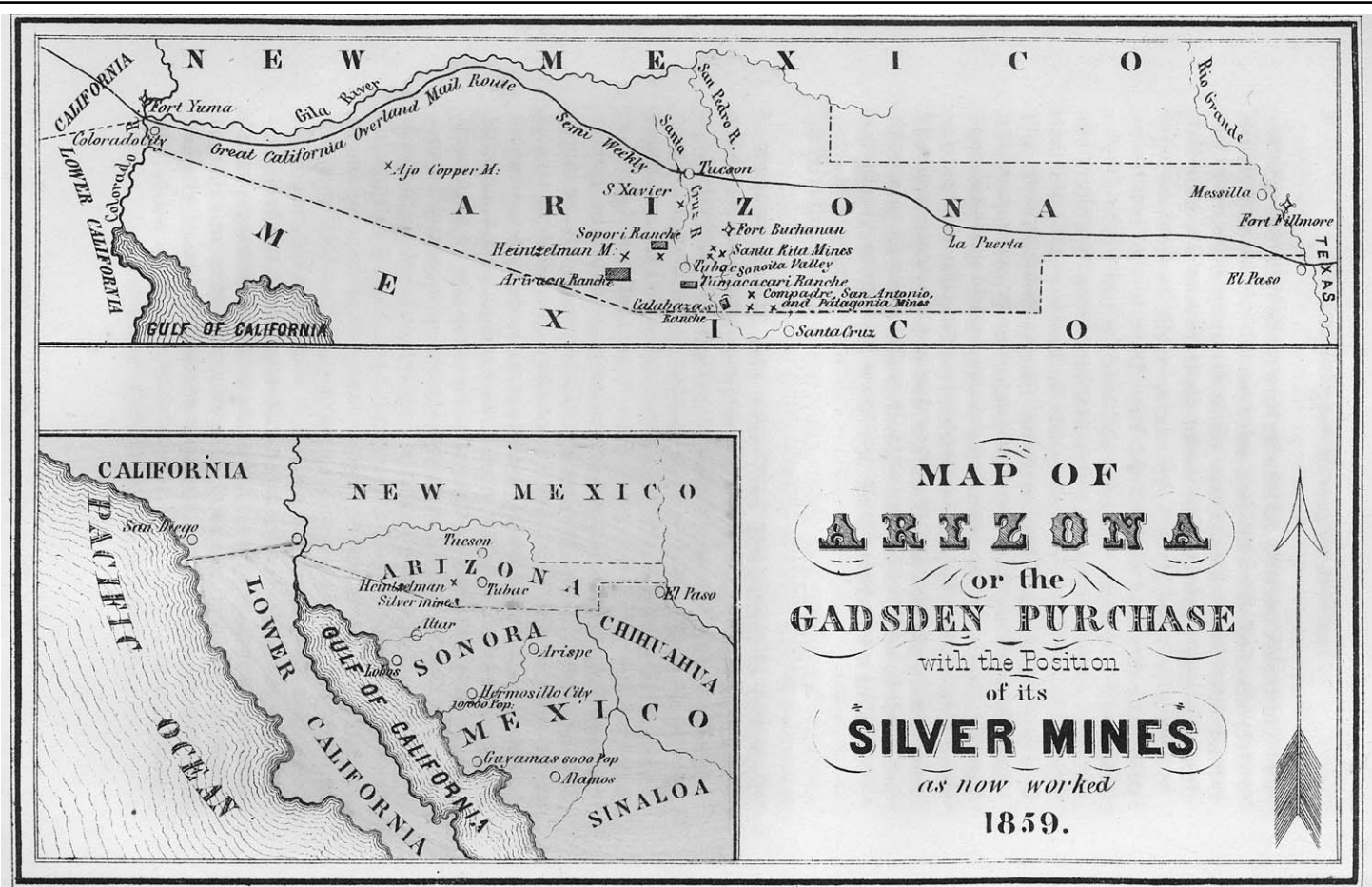


RUINS OF CASA GRANDE.

Taken from *The Resources of Arizona*, Third Edition by Patrick Hamilton, 1884, p377.

Earlier accounts are summarized in various papers found in Michael Canty's (editor) *History of Mining in Arizona* series, particularly Officer's paper on Mining in Hispanic Arizona, Lenon's paper on the Patagonia area and Greeley's paper on Early History of Mining in Arizona. H. H. Bancroft also has extensive information on

book contains exceptionally important information on the early phases of several public companies and the people who ran them. The *Mining and Scientific Press* issues from 1860 onward offers a glimpse into mining in Arizona, but the data from this publication has never been summarized, to my knowledge, nor has that



Taken from *The Mining Magazine and Journal of Geology...*, Edited by Wm. P. Blake, November 1859.

this topic found in his *History of Arizona and New Mexico* (1889) and his numerous volumes on the History of Mexico. One should be cognizant of the fact that much of the early information on Arizona will be found in written history of Mexico.

Following Emory's account is the J. R. Bartlett narrative of *Explorations and Incidents in Texas, New Mexico, California, Sonora, and Chihuahua... During the Years 1850-1853*, which offers additional insight. Bartlett had also been a member of the Emory expedition.

Prominent mining geologist William Phipps Blake edited a new mining publication *Mining Magazine*, which began in November, 1859. It has much information on the 1859-60 period of Arizona mines. Unfortunately, this reference is extremely rare. Blake wrote reports on Arizona mines for a number of years, and his reports are a great source of information, when available.

The next summary is Sylvester Mowry's *Arizona and Sonora...* 1864, which was so popular that a number of editions were published through 1866. This book contains a wealth of information, including part of J. Ross Browne's *Adventures in the Apache Country*, which Browne later published in full in 1868, based on a series of articles he wrote for *Harper's Magazine*. Another important account is the work done by Diane North in her biography of *Sam Heintzelman and the Sonora Exploring and Mining Co.* (1980). This

from the *Engineering and Mining Journal*, circa 1870 onwards, another technical mining publication with a wealth of information.

List of Early Arizona Mining Companies.

The following list of mining companies was published by William Phipps Blake in *Mining Magazine* in **November, 1859**. It is not necessarily all-inclusive, but offers an important printed list:

- American and Mexican Mining Co.; Setentrion Mines, (1859, New York)
- Arizona Copper MC (1854, San Francisco); mine: no info
- Arizona Land & MC (1859, Rhode Island); mine: see Mowry, 1864
- Aztec Copper MC; no info
- Boundary MC (pre-1859, private); mine: near boundary of Sonora
- Cahuabia MC (pre-1859, private); mine; Papagueria
- Fort Fillmore Silver MC (1858, New Mexico); mine: Organ Mountains
- Mexican Pacific Mining Co. (1857, Penn.); mine: no info
- Patagonia Mining Co.; no info
- Real del Monte MC; no info
- San Xavier MC (1857, San Francisco); mine: near Tucson

Santa Rita Silver MC, (1858, Ohio) mine: Santa Rita Mountains
 Sonora Exploring and Mining Co. (1856, Ohio) mine: Cerro
 Colorado area
 Sopori Land & MC (1859, Rhode Island); mine: Mowry, 1864
 Sopori MC (1858, Rhode Island); mine: no info
 St. Louis SMC; no info
 Union MC (1859, private); mine: near Sonita River

The 1868-1878 Period

This period utilizes a series of traditional references. The series *Mineral Resources (Statistics) West of the Rocky Mountains*, authored by US Mineral Commissioner J. Ross Browne in 1867 and 1868, then taken over by Ross Raymond from 1869-1876. The first two of these are either unindexed or have poor indexes, thus we built an index for the 1868 volume that has significant information on Arizona. *The Handbook To Arizona*, by Hinton (1878) has a wealth of information, that again needed an index.

There were a few periphery works that have some information, though not substantive or of high quality of information. Among these are Hodge's *Arizona as it Was* (1877).

Mining magazines such as the *Mining and Scientific Press* and the *Engineering and Mining Journal* again offered a wealth of information on Arizona mines, but the data has not been summarized, nor was there a calculated effort to cover the entire region of Arizona as a whole.

The problems inherent in research of this period is that far less emphasis was placed on Arizona mines during this, and even later periods through 1900 by those who wrote up mining activity for mining publications. There were very few active mines. It is imperative for the researcher to know that *information was disseminated by interested parties*. There were no full time mining reporters making independent observations. Without a lot of production activity, there were few correspondents writing mining publications with news of discoveries or production. We don't see the detailed information on mining activity from district to district as we see in Nevada and California or Colorado. It was simply too dangerous to try this in Arizona, and most were only prospects anyway. Thus sometimes the only articles we do see are those touting the mines in an attempt to sell stock – easy to spot today, but not easy for the nineteenth century reader to understand.

The 1880-1900 Period

This is another difficult period of research. The standard references of the *Reports of the Director of the Mint* by Horatio Burchard 1880-1885 contain some information on Arizona mines, though Arizona's coverage is conspicuously poor in many of these volumes. This period marks an important time in the formation of many federal divisions. The USGS (Geologic Survey) was created

during this period, and the administration and distribution of duties was a difficult task. Thus we begin to find information in various places, all of which are very important, but often do not overlap. These include early publications of the USGS – *Professional Papers, Bulletins, Folios, Monographs, and Circulars, Reports of the Director of the Mint*, and a new publication edited by Ross Raymond, *The Mineral Industry*, a publication of the American Institute of Mining Engineers, which published an annual volume for more than 50 years beginning with 1892.

Arizona historians are very familiar with Hamilton's *Resources of Arizona* (1884), another book that we cite heavily, again requiring our compilation of an index. Stepping into the arena in the 1890's were the *Poole Brothers'* annual *Mining Directories*, though I have only found two in advanced western libraries (1892, 1898). The Poole directories are very hard to use without an index, and we have been making them on a state-by-state basis as needed.

Another new publication comes to light about this time, the *Engineering and Mining Journal* edited by Ross Raymond and Rothwell, a later editor of *The Mineral Industry*. This weekly magazine has reports on Arizona mines in both detailed reporting fashion and in news notes. It contains some of the first lengthy technical published reports on the major mines in Arizona. An example is a series of articles by mining engineer Carl Henrich on the mines at Morenci, later to become a world-class copper deposit, published March 19 and 26, 1887.

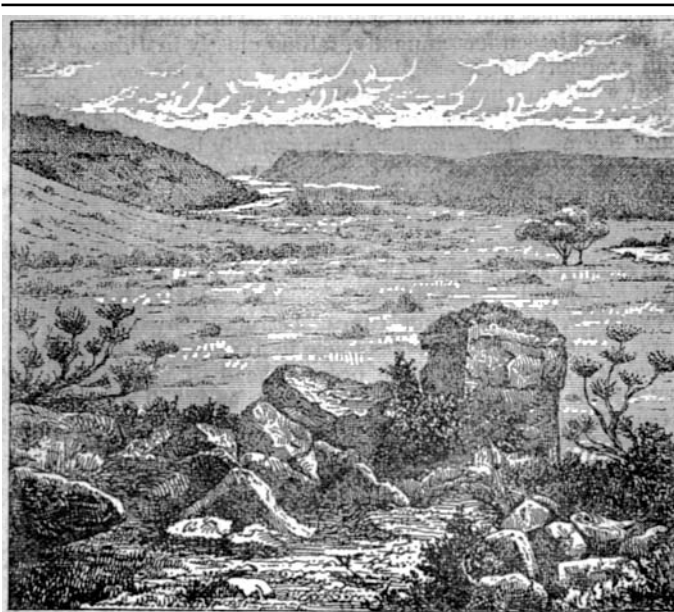
Post-1900 Mines.

Research of post-1900 mines opens a vast array of publications much more accessible to researchers. I will only mention

those I feel of absolute importance. There are many more that deal with places or personalities that are too numerous to mention here. Your library can help you with those topics and people.

Of primary importance are three series of publications. 1) US Geologic Survey *Professional Papers, Bulletins, Folios, and Circulars*. Consult their master indexes for papers on specific mining districts of interest to you. 2) *The Copper Handbook* and later *Mines Handbooks*. These were published every year from 1900 through at least 1963. Their early years were edited by one of the best copper geologists in the business, Walter Harvey Weed. These are a staple in our library and allow good information on real companies year after year. You need the whole run to get a decent grip on the business. 3) Arizona Bureau of Mines (etc.) state publications. Typical of Nevada, California, and Colorado, Arizona has put out an outstanding series of publications on the geology of mining districts and geographic areas. These are usually different from their USGS counterparts, covering areas that the USGS did not publish, or published in joint-venture with Arizona.

Also of importance is an unpublished work by Tenney on the *History of Mining in Arizona*, 1929. This work was important enough for us to index, and is written district by district, generally encompassing the "Big Picture", something other authors miss



"Valley of the Verde," as published in *Hand-book To Arizona*, by Richard J. Hinton, 1878, p316.

entirely. Tenney was well published as a geologist, but this history was never completed.

Most advanced libraries, such as those at universities, carry all of the above publications. Smaller local libraries carry books of local interest, but usually not the in-depth mining or geologic publications, usually only consulted for advanced study.

Nevada Collectors:

There are several pieces within this collection that are from the Colorado District, 1863-4, which was in Mohave County, Arizona then, but is in Nevada now. This area encompassed Nelson in Clark County. These are among the rarest of Nevada and Arizona certificates. So little is written in the historical record that we have written an historical overview of the period, a first to our knowledge.

A Note on Research for this Catalog

Five researchers worked on this catalog, which we consider one of our best. We jumped many hurdles to give you the information presented here. Often the course of discovery of a company or of individuals would be confusing. More than at any other time, we found transcription errors in key references that caused concern and usually led to more intense research to unravel the mystery. A few examples follow. James Hill wrote the quintessential book of American mining districts

for the USGS (only western, unfortunately), *Mining Districts of the Western United States* for the USGS in 1912 (Bulletin 507). We had a mining stock mention the Rincon district, difficult to find elsewhere, but listed by Hill. Unfortunately, Hill gave only one reference to that district and when we read that page in a *Mineral Resources of the United States* volume over and over, the word *Rincon* was not to be found. Nor was it found on adjacent pages or on pages with similar looking numbers, such as 3 and 5. Here was a transcription error from 1912. On another occasion, we were looking for more information on the Black Rock district in Graham County. We could find a Black *Hawk* district, but not a Black *Rock* district, only found in Yavapai County. After extensive research, we noted that one author referred to the Black Rock district next to the Clark district, which unraveled the mystery. Several authors had mistaken the verbal sound and/or handwritten notation of Black *Hawk* and thought it looked like Black *Rock*. Without the clue to geographical location, we would have been stumped. These types of transcription errors occur more often than we would like to see, but advanced researchers must be aware of their presence.

A continual source of problems in the west are mining district names. I have touched on this subject in an earlier catalog. In Arizona, the problems remain. There may be several different names for a specific geographic mineralized region. It is far too complicated a task to identify them, separate and reclassify them into salient units. It is also not usually practical, since many districts had very

broad boundaries that today would encompass several districts. Many overlap two counties. Others were located in regions that may have changed county names up to three times! We have tried to place these where they lie today, but may have missed a few. We ask for your indulgence.

Fascinating stories were also unraveled by reading many volumes of the *Copper and Mines Handbooks*, rather than just taking a note on a company from just one volume. We wanted to give the “big picture” to a company and its place in the district, but I’m afraid to do this each time would take a monumental work far in excess of what is presented here.

We have properly identified about 99.9% of the companies in this catalog. If there is no question mark next to the district, we found specific information on the mine or district. Only those we could not absolutely verify did we place the unwanted stigma of “unknown” or note such in the description.

We changed our method of reference presentation, by generally

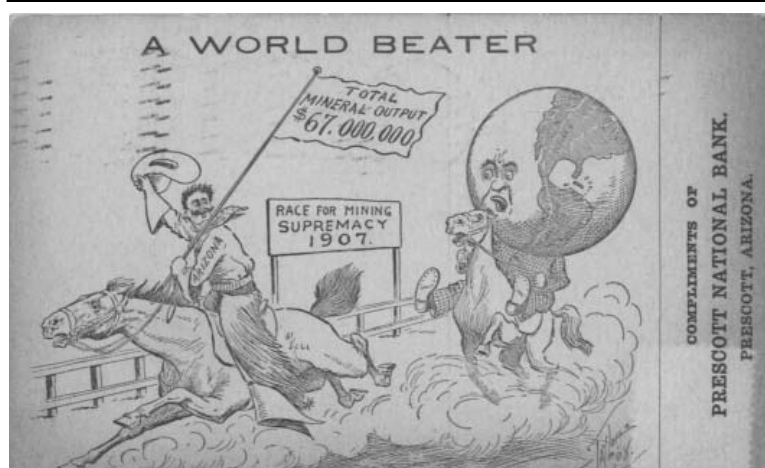
placing the name of the publication with the author, page number and date. We find that there is too much confusion by novice researchers on company names, so we cite book and page generally. I may have been the lone describer in our group who rarely used page designations because my attitude was “*read the book.*” I find this attitude at fault, because it is *exactly* why some nineteenth century authors did not make indexes, my ultimate pet peeve.

Researchers on this catalog are **Fred Holabird**, mining and exploration manager

and geologist for 25 plus years; **Dave Fitch**, mining exploration manager and geologist for about 35 years, with extensive experience in and around Mexico and the southwest (our friends in the mining industry know him well); **Vernon Prestia**, mine geologist (Nevada); **Richard Jeanne**, exploration geologist with 25 years experience around the west, including Arizona; **Andrea Borges**, recent UNR grad; and **Dan Webster**, an engineer with a deep love of the west. **Deb Dupas** did the layout. **Jana Wyld** does the scanning and public relations. **Patrick Thompson** handles accounts and internal inventory management.

We know you will enjoy this catalog and what it represents to the mining history of the west. Jim Garbani has been collecting for more than a decade. During that time, he has amassed a wonderful and perhaps the finest collection of Arizona stocks and other documents, which includes the Jim Reynolds collection. The material offered here, along with that of other consignors, represents some of the best and rarest of collectible western stock certificates. Enjoy!

Fred Holabird and staff



This pictorial postcard illustrates Arizona's “race for mining supremacy” suggesting it was ahead of the rest of the world in production.

Lot #363

MINING SCAMS

Adventure Into Instant Wealth - or Education by Disinformation

More people have heard about mining scams than perhaps any form of trickery or skullduggery. A number of people think that nearly every mining venture is a scam. As I have traveled and lectured around the United States, this is the overwhelming attitude. Why? Education is at the base of the argument. Less and less people are educated in earth sciences and knowledge of mining matters. Many are unwilling to find “experts” to help define or solve problems. In one sense, this has been going on for more than 100 years. But currently, we continually see a “dumbing” of America - a lowering of the common denominator in education that leads to knowledge vacuums. While watching a newly released movie the other day on Iris Murdoch’s life, the following statement came to light which I thought profound and directly relative:

*Education doesn't make you happy,
nor does freedom.
We don't become happy just because we are free,
if we are,
or because we have been educated,
if we have,
but because education may be the means
by which we realize we are happy.*

*It opens our eyes, our ears,
tells us where delights are lurking.
It convinces us that there is only one freedom
of any importance whatsoever –
-that of the mind,
and gives us the assurances and confidence
to walk the paths our educated mind offers.*

Iris Murdoch

Mining ventures are the quintessential “get rich quick” scenario. Everybody gets gold in their eyes when we tell stories about real gold mines. It sounds so easy to make money. But its not, nor is it cheap to explore. Yesterday’s mining scams have been replaced by the scam of today and of modern times, the *dot.com* company. If we explore the mining scam picture, first we need to understand just exactly what a mining scam is. It is fraud. *Plain and simple fraud.* The ability of a crook to get you to part with your money with no intention whatsoever of doing what he says or providing something in exchange for that money. Some consider any form of mining that is unsuccessful as fraud. This is not correct. Fraud is different from *exploration*. Many historians unfamiliar with the mining business don’t realize the difference, and it is quite simply the most important underlying foundation of the mining business. Exploration is a risky process to explore for precious or base metals and develop data that may lead to the profitable production of a mine. How can we tell the difference? Sometimes it is very simple. Take the case of the Gold Bar mine that we put in production in the Bullfrog district. Local writers in 1908 wrote it up as a scam. But as soon as a qualified geologist goes underground and investigates, you know immediately that they ran drifts in certain specific directions looking for pockets of rich ore. They found some, but not enough, so the Bullfrog-Gold Bar MC went broke. 85 years later, we found the rich pockets right under the hoist house, covered by two feet of soil in the foot-wall of the mineralized zone where they drove the shaft. It made the mine. The old boys missed it by two feet.

Scams of old are tougher to identify for the same reason. Never be quick to judge. Most of the companies 100-150 years ago wanted to find ore. Some were good at it, others stunk. Mark Twain (Sam Clemens) tried it. He stunk. George Hearst tried placer mining. He was lousy, realized it and stuck to lode mining. Thousands of mining companies were formed to mine or look for ore. Sometimes the ore deposit they found was only as big as their shovel. Others hit the mother lode, such as at Silver King in Superior, Arizona. Determining which of the nineteenth century companies were scams involves deep research. We need to see evidence – sometimes in print, other times from first hand observations from those of us who have worked on these mines or prospects in modern times. Scientific writers of the period, particularly the *Mining and Scientific Press*, *The Engineering and Mining Journal*, and the *Copper and Mines Handbooks* offer valuable insight directly from the period. They were not afraid to call a spade a spade. Virtually dozens of other mining publications littered libraries for fifty years. Some of them may have been havens for fraud, babboozlers and scam artists. The *New York Mining News* (circa 1880) was one to some extent. I have always wanted to get a run of these and compare the stories to the mines and the real activity. So many of the eastern financed companies of the period had nearly nill activity, while back east they were selling stock to unsuspecting pigeons. Clearly, this was a major conduit of misinformation to the eastern public.

The mining industry did much to combat the schemers. *Mining and Scientific Press* regularly carried articles about fraudulent ventures. They were constantly vigilant about misuse of the public company system to illicitly promote bogus mines. One article in 1880 entitled “Bogus Mines” tried to warn the public about phony mine ventures. “*Even in California, where we ought to know better, people are found who will help out a man who is going to get gold out of water...*” (Oct. 9, 1880 p232). Sam Clemens was part of the mining industry as a young man and later as a writer in Virginia City and saw the shenanigans first hand, writing about it from the viewpoint of Mark Twain in *Roughing It*. He remained concerned about fraud all his life, and wrote about it again in *A Gilded Age*, a striking satire of some of the darker side of American life. In that work, instead of using the same example of gold and silver mining as he did in *Roughing It*, he comically used a coal mine and a group of eastern investors to illustrate his point, though he continued to use one of the same characters, Col. Sellers. Did the public wake up? Of course not. The general investor had little or no access to professional mining publications, and everybody else thought Twain made everything up. Folks enjoyed reading his stories never realizing they were based on real events.

Today the scenario continues. Various State Bureau of Mines and Geology Departments (or equivalent) have published papers trying to warn the gullible public from schemes to rid them of their wallets. Arizona published *Some Facts About Ore Deposits* that is a remarkable compilation of scams and schemes. Gold from water, gold in sand dunes, secret recovery processes, black box metallurgy – these are all typical of the many schemes. After these began showing up again with gusto in the 1990’s, Nevada published a similar work. Virtually every exploration geologist today with ten or more years of experience has dozens of stories to tell about this fascinating subject drawn from their own experience.

The scams listed below are all verified instances of fraud. Most resulted in convictions and prison sentences. There are many more written within these pages that may deserve addition to this list. We welcome your comments. –fh

For a list of Known Mining Scams, please go to page 265.