The Mines Museum of Earth Science
Home to the Historically Important State Mineral Collection of Colorado

By Ken Kucera

Table of Contents
1 Introduction
1 Origins of the State Mineral Collection of Colorado
3 Colorado Scientific Society Adds to the Collection
3 State Mineral Collection and the Colorado School of Mines
4 Mineral Specimen Images from the State Mineral Collection
6 References

Figure 1 (right): Rich specimen of Gold ("roasted" gold telluride minerals), Cripple Creek Mining District, Teller County, Colorado. Ex-State Mineral Collection of Colorado (Colorado State Historical Society collection), now part of the Mines Museum of Earth Science, CSHS #5579. Specimen size 10 cm x 7.5 cm. Image credit: Mines Museum of Earth Science.

The Cripple Creek Mining District is situated in the southern part of the Colorado Front Range about 20 miles southwest of Colorado Springs. It is one of the largest and most famous gold camps in the world, as well as Colorado’s most productive gold district. It is distinctly different from the other mining districts of the Front Range in having ore deposits associated with an extinct volcano of Miocene age and having had immense production from gold-telluride ores.

Introduction

An important part of the mission of the Mines Museum of Earth Science includes being “a State repository for Colorado’s mineral heritage”. The Museum contains over 40,000 specimens in its collections of rocks, minerals, gemstones, mining artifacts, and meteorites. Within this impressive total, the Museum houses more than 5,000 historical and scientifically important mineral specimens that at one time comprised the “official” State Mineral Collection of Colorado. Rich in ore minerals from Colorado mines, it also contains fine specimens of topaz, aquamarine, other semiprecious gems, and zeolites. This important collection helps document Colorado’s mining and mineral heritage, through an expansive array of mines and other locations, as well as the superb quality of minerals found in the State.

Origins of the State Mineral Collection of Colorado

Three organizational players had important roles in the development of this collection: the Colorado Bureau of Mines, the Colorado State Historical Society, and the Colorado Scientific Society. In the mid-1890s, the newly created Colorado Bureau of Mines began to assemble an extensive collection of rocks
and minerals that would eventually become the “official” State Mineral Collection of Colorado. This collection would become a featured exhibit in the old Colorado State Museum located at 14th Avenue and Sherman, just across from the State Capitol building in Denver.

The Colorado State Historical Society was established in 1879, and by legislative act was designated the official collector and custodian of state historical material. Early on, it was arguably best known for its impressive collections of archaeological and early Native American artifacts. From 1881 to 1915, these first collections had a succession of homes: the Glenarm Hotel at Fifteenth Street and Glenarm Place, the Arapaho County courthouse, Denver Chamber of Commerce Building, and the basement of the State Capitol building. (Colorado Encyclopedia, 2021)

Not long after these collections were placed in the State Capitol building, it was determined that a different building was needed to adequately accommodate the growing demand for space. A new facility was authorized in 1909, and in 1915 the Colorado State Museum building at 14th and Sherman in Denver was completed. Design and construction supervision were charged to architect Frank E. Edbrooke of Denver, who had also completed the design for the Colorado State Capital Building. Shortly thereafter, the new Museum building was occupied by multiple government entities, including: State Historical Society, Colorado Bureau of Mines (along with its wide-ranging collections of Colorado rocks and minerals), the Colorado Department of Higher Education, and some Depression-era offices and programs. (Work Projects Administration, 1951)

The cost of the State Museum building and furnishings was reportedly about $543,000 (in 1915 dollars). Native Colorado materials were used in its construction: gray granite from the Aberdeen Quarry near Gunnison, marble from the Yule Quarry near Marble, and brick and tile from a plant in Denver. (Colorado Encyclopedia, 2021)
Colorado Scientific Society Adds to the Collection

The Colorado Scientific Society is the oldest scientific and technical organization in the Rocky Mountain region. The founders of the Society began to assemble a mineral collection, with an emphasis on ore minerals from Colorado mines, soon after the group was formed in 1882. Taking care of this collection proved to be problematic. Successive curators faced problems of specimen acquisition, storage space, cataloging, and general care of the collection. (Eckel et al, 2003)

In the early 1900’s, the Scientific Society loaned and eventually donated their collection minerals to other organizations. In 1923, a comprehensive suite of rocks and minerals from the Leadville Mining District was loaned to the Denver Museum of Nature and Science. Most of the remaining Scientific Society mineral collection was loaned to the Colorado Bureau of Mines between 1923 and 1925. The entire mineral collection was donated to the Colorado Bureau of Mines in 1946. (Eckel et al, 2003)

When donated to the State Bureau of Mines, the Scientific Society’s mineral collection consisted of more than 700 specimens. Base and precious ore minerals from Colorado mines were predominant, but the collection also contained fine specimens of aquamarine, topaz, other semiprecious gems, and zeolites. (Eckel et al, 2003) Many of these specimens were from collections assembled during field studies by famous Colorado geologists, mining engineers, and metallurgists, who included: Charles Whitman Cross, Richard Pearce, William Francis Hillebrand, John A. Porter, E. G. Stoiber, Pieter Hendrik Van Diest, and Anton Eilers. (Raines, 2017)

In 1959, the State legislature transferred control of the State Mineral Collection from the Colorado Bureau of Mines to the Colorado State Historical Society. By this time, the exhibits extended through two floors of the old State Museum Building and were contained in approximately 100 cases. (Figure 3)

State Mineral Collection and the Colorado School of Mines

The State Historical Society soon determined they were not able to manage such an extensive scientific collection. As was the experience of the Scientific Society, issues were encountered with the curation of the collection, which included specimen acquisition, storage space, cataloging, and general care. By the mid-1960s, the State Historical Society decided to find a new location for the collection. Enter the Colorado School Mines as a likely candidate.

On October 25, 1965, an agreement was reached where the State Historical Society transferred the State Mineral Collection to the Colorado School of Mines in Golden, Colorado. However, the agreement specifically stated the collection “shall absolutely remain vested in the State of Colorado as provided in Colorado Revised Statutes of 1963, chapter 131, Article 1, section 9.” To the best of our knowledge, no
other states have claimed ownership of a mineral collection and transferred its control/curatorship by legislative acts and legal agreements. (Raines, 2017)

The actual transfer of the collection to the old Geology Museum in Berthoud Hall on the Mines campus took place in three parts: the major transfer took place in 1966, with smaller transfers of “special” groups of specimens following in 1973 and 1980. When completed, more than 5,000 specimens from this important collection had been added to the curatorship of the Colorado School of Mines Geology Museum, now the Mines Museum of Earth Science. (Raines, 2017)

In 2003, the State Mineral Collection was transferred from Berthoud Hall to a new Geology Museum facility constructed as part of the General Research Laboratory building (GRL) at 1401 Maple Street on the CSM campus — the current location of the Mines Museum of Earth Science. Many of the minerals that were part of this important collection currently are on display at the Museum.

The fine mineral specimens shown below were originally from the State Mineral Collection and now are part of the collections and curatorship of the Mines Museum of Earth Science. Enjoy the view!

**Figure 5 (left):** Metallic-gray crystals of Galena with brass-colored cubic and pyritohedral crystals of Pyrite. From the historic Wilfley Mine, Elk Mountain, Kokomo-Tenmile Mining District, near Kokomo, Colorado. Mines Museum of Earth Science collection, CSHS #4535. Specimen size 7 cm x 8 cm. Image credit: Author.

Arthur R. Wilfley, owner of the Wilfley Mine at Kokomo, was the inventor of the Wilfley Ore-Concentrating Table, first used at the Wilfley Mill in 1896. This device would revolutionize the mining industry world-wide. With the introduction of the Wilfley Table, zinc could be effectively separated from lead in crushed sulfide ores. (Bergendahl, 1971)


The Wolftone Mine is located on Carbonate Hill, about 1.6 km east of Leadville. The mine was staked in 1876 and was named by its developers for Theobald Wolfe Tone (1763 – 1798), the “spiritual father” of Irish nationalism. The Wolftone is known for its fine mineral specimens of Pyrite, Galena, wire Silver, Hemimorphite, Sphalerite, and Hydrohetaeroite. The mine was one of Leadville’s largest producers of silver, lead, and zinc. It had the largest body of zinc silicate (Hemimorphite) ore in the Leadville District. (Shannon, 1985)
The Cyclops Mine is in the Silver Hill area, northeast of Central City. The mine was reportedly staked in 1877 or 1878 and extensively worked for gold and a rich silver-bearing deposit. Pyrargyrite ("ruby silver") and Stephanite ("brittle silver") were part of the so-called rich "bonanza ores".

The War Dance Mine is located southeast of Central City. It probably opened before 1900 and last operated in 1943. The War Dance vein was filled primarily with Pyrite and Quartz, with varying amounts of Tennantite, Galena, Sphalerite, and Enargite. The vein also contained an unusual assemblage of telluride-bearing ore, locally rich in Gold. (Sims, 1963)

The Mollie Gibson was Aspen’s most famous mine and was named for the sister of one of its discoverers. It began large-scale silver production in 1889 and reportedly produced a silver mass weighing 2,150 pounds. (Raines, 1992)

The Detroit Mine is located 1.25 miles northeast of Breckenridge. It was first worked in the late 1800’s and produced considerable amounts of gold, silver, lead and zinc. The Detroit was one of the more productive mines in the district. (Lovering, 1934) (Ransome, 1911)
What ever happened to the old Colorado State Museum Building? It continued operations at 14th and Sherman until 1976, when it was moved to a temporary home at 1300 Broadway. This temporary museum location was torn down in 2010 and the History Colorado Center was built at 12th and North Broadway and opened in 2012. The old Colorado State Museum Building became the Legislative Services Building, due to its proximity to the State Capitol, and is part of the Denver Civic Center National Historic Landmark District. (Zimmer, 2019)

Acknowledgements

The Author sends thanks to Ed Raines, Curator of Collections, Mines Museum of Earth Science, for his invaluable assistance in compiling information for this article.

References


