

Chaffee County

Garfield-Monarch District

Placer gold was discovered in the streams of the Monarch district in the 1860s, but major activity did not follow for many years. In 1878 the Boone brothers staked the Great Monarch claim. That opened the flood gates to thousands of hopeful prospectors. Very quickly claims were staked including the Fairplay, the Silent Friend, Pay Master, Ben Bolt, Eclipse and Madonna Mines (Crawford, 1913).

The towns of Garfield, Maysville and Monarch were soon founded and grew rapidly, aided by the arrival of the railroad in 1883 (Aldrich, 1992). Monarch grew around the claim of Nicholas Creede, becoming the most important of the towns, with more than twenty mines within a half mile of the town. The Madonna Mine was soon producing 30 carloads of ore a day. Ultimately the silver crash of 1893 killed the towns and much of the mining activity.

The geology of the district is characterized by Precambrian schists and gneisses overlain by Paleozoic sedimentary rocks that include rocks up to the Cretaceous Mancos Shale. These sedimentary units dip steeply. Three significant NW-trending faults cut the rocks - the Madonna, the Lake and the Mayflower faults (Crawford, 1913). Later Tertiary intrusives are found throughout the area, including a gneissic quartz monzonite, two other quartz monzonites - the Mount Pomeroy and the Mount Princeton, along with dikes of monzonite, latite, rhyolite and lamprophyre (Dings and Robinson, 1957).

Ore deposits of the Garfield-Monarch District include replacement deposits, veins, and apparently unrelated metamorphosed Precambrian deposits. The replacement deposits are the most important. They occur as both bedded replacements and along faults. The Paleozoic carbonates are the most commonly replaced units. Bedded replacement deposits are found in all the carbonate units in the District but the Manitou Dolomite is the most important, especially in contact with the Precambrian basement.

The principal type of vein deposits is pyritic quartz. The pyrite is commonly auriferous.

Oxidation of the deposits is common. Typical oxidized ore consists of soft, porous limonite containing cerussite, hemimorphite, smithsonite and some galena (Dings and Robinson, 1957). Not much zinc was produced because the district had no zinc smelter.

Of the district mines, the Madonna was the largest producer (Henderson, 1926; Vanderwilt, 1947). The mine lies on Monarch Ridge, the richest area of the district. According to the description of Dings and Robinson (1957), the Madonna ore occurs mainly in the dolomitic limestones of the Manitou and Fremont Formations, especially near the underlying Precambrian granite. The ore consisted of cerussite, native gold, smithsonite, hemimorphite, cerargyrite, argentite, some silver-bearing galena and malachite in a gangue of limonite with some dolomite, limestone and quartz. Significant production came from bodies of lead carbonate, commonly surrounded by lower-grade zinc carbonate (Hazen, 1956).

Mines south of Maysville are not contiguous with the rest of the district and are distinct geologically and mineralogically (Sheridan and Raymond, 1984). In this outlier, the mines are metamorphosed seafloor exhalites, characterized by the zinc spinel gahnite. In this way, the Maysville "sub-district" is akin to the Sedalia Mine and the mines of the Turret District to the east. The Bon Ton and Cinderella No. 7 mines are in this area.

Also, another area deserves special mention as differing from the main part of the Garfield-Monarch District. In the Huffman Park area, the Nest Egg and Royal Purple "occurrences" are characterized by abundant molybdenite with only a small amount of pyrite as the accompanying sulfide. These molybdenum-rich prospects occur within the Mount Princeton Quartz Monzonite (Worcester, 1919).

The Garfield-Monarch District has continued to sustain interest. Shannon and McCalpin (2006) noted abundant evidence of recent exploration activities in the Maysville area. Del Rio (1960) delineated several areas of potential for future exploration. He suggested the region where the Lake, Mayflower and Madonna faults converge, the areas high in the Creek Creek Valley and in Taylor Gulch - all areas covered with significant glacial till. There has been no serious exploration in these areas to the knowledge of personnel at the Colorado Geological Survey.

Mineral list contains entries from the region specified including sub-localities (Mindat.org)

| | | | |
|------------------|---------------------------|------------------|--------------------|
| Acanthite | Chrysocolla | Gypsum | Pyrrhotite |
| Actinolite | Copper | Hematite | Quartz |
| Almandine | 'Copper Stain' | var: Specularite | var: Chert |
| Andradite | Cordierite | Hemimorphite | Scheelite |
| Anglesite | Cuprite | 'Hornblende' | 'Serpentine Group' |
| Ankerite | Diopside | Hübnerite | Siderite |
| Anthophyllite | Dolomite | Limonite | Sillimanite |
| 'Asbestos' | var: Ferroan Dolomite | Lizardite | Silver |
| Azurite | Epidote | Magnetite | Smithsonite |
| Beryl | 'Feldspar Group' | Malachite | Sphalerite |
| var: Aquamarine | Fluorite | Mimetite | Stephanite |
| Biotite | Gahnite | Molybdenite | <i>Sylvanite ?</i> |
| Bornite | Galena | Muscovite | Tenorite |
| Brochantite | var: Argentiferous Galena | 'Olivine' | Tremolite |
| Calcite | 'Garnet' | Phenakite | 'Wad' |
| Cerussite | Gedrite | Phlogopite | Wollastonite |
| Chalcocite | Goethite | Plumbojarosite | Wulfenite |
| Chalcopyrite | Gold | 'Psilomelane' | |
| Chlorargyrite | Graphite | Pyrite | |
| 'Chlorite Group' | Grossular | Pyrolusite | |

Garfield-Monarch mines

Asterisk * indicates mines with extended written descriptions in Dings and Robinson (1957);

mines marked with @ are located in the Maysville area sub-district, described in Sheridan and Raymond (1984);

notes the mine is described by Worcester (1919);

Mines marked with ^ are specifically mentioned in Heyl's publication on oxidized zinc deposits of Colorado (1964);

+ denotes mines detailed in Crawford (1913);

Unmarked mines are from Mindat.org alone.

Colorado

Chaffee Co.
 Monarch District
 +^*Alaska Mine
 Alie Belle
 +*Alpha and Beta
 Alpine No. One
 Anna Huffman Claims
 +April Fool Mine
 Atlas Group
 Baal Beck
 +Bay State
 Ben Bolts Paymaster
 +*Ben Hill
 +*Black Tiger Mine
 +@Bon Ton Mine

USA

Lachaw Mine
 +*Last Chance Mine
 Lehigh
 +^*Lilly Mine
 ^Little Claim
 +Little Charm Mine
 ^Little Giant
 +*Little Orphan Annie Mine
 +Little Wonder Mine
 Longfellow Claim
 +Lost Basin Group
 Lucky Mine
 +*Macedonian Mine
 +*Madonna Mine
 +*Major Mine

+*Bonnie Belle Mine
+Boss Lake
+*Brighton Mine
Buckhorn Tun
Burton
@Cindarella No. 7 claim
Cinderella South Mine
+*Clinton Mine
Colorado Gold Mining
+*Columbus Mine
+Condor
Copper King
Cree Camp
D. A. Moore Mason Occurrence
+*D'Byron mine
+*Darling Mine
+*Delaware
+*Desdemona
DMD Occurrence
Dumpite
+^*Eclipse
Elkington Mine
Elmer McMurray
+Emma Stradley
+*Evening Star
Evergreen
+*Exchequer
+^Fairplay Mine
Fairview
^Flossie D
Forward Gold Mining
+Fraction Mine
French
+^*Garfield
Columbus Gulch
Hercules Mine
Ingersoll Mine
Hematite prospect
Indianapolis Mine
Garfield Quarry
Geneva Claim (1)
Geneva Claim (2)
Giant Eclipse
Gladstone Mine
+*Golden Age Mine
Grand Duke
+Great Monarch Mine
Greens Gulch
+*Gulch Mine
+*^Hawkeye Mine (incl. 1,2,3)
+*Hercules
+Highland Claim
Holy Water Mine
Huffman Copper Deposit
Irishwood Esther
+*Indianapolis
*Ingersoll
*Iron Duke
Jasper Mine
+*Jewel Tunnel & Mining Company Occurrence
Josephine No. 1

Maple Leaf
+*Marshall tunnel
+*Mason Mine
*Maverick tunnel
*May Queen Mine
+*Michigan Group
+*Missouri Boy Mine
Missouri Hill
+Mocking Bird
+*Mohammed Mine
Monarch
Monarch Hill
Monarch Mine
+*Monarch Contact
^Monarch Pool
Monarch Lime Quarry
Monongahela and Fraction
+Moose Mine
Moss Flower (Silver King Occurrence; Half Moon Occurrence)
Mound Mine (Atlantic)
Mount Aetna Molybdenum Prospect (Monarch Molybdenum Property; D & G Mining Property)
Mount Stella
+*Mountain Chief Mine
*Neglected Mine
#Nest Egg Occurrence
+^*New York Mine
Ohio and Morningstar
Ole Bull
Oshkosh Mine
+*Page
+^*Paymaster Mine
Pilgrim Group
+Pinyon Mine
+*Pride of the West
+*Rainbow - Eagle Bird Mine
Rarus Warrior Mine
Rolla
#Royal Purple Occurrence
+Series Junction Group
+*Shamrock Mine
Shannon Last Chance
+^*Silent Friend
Sitting Bull
+*Song Bird Mine
Southside South Cinderella Occurrence
*Stemwinder Mine
Taylor Gulch
Taylor Mining Syndicate
Ten Broek
*Thirty-Six-Thirty
*Tom Cat mine
+Tom Payne
+*Tweed mine
+*Uncle Sam Mine (Cyclone Creek)
*Uncle Sam Mine (Hoffman Park)
Victor Mine
White Marble Quarry
+^Wilson Mine

References:

[Mineral Resource Data System \(MRDS\) - Online Spatial Data - Garfield Quarry](#)

Aldrich, John K., 1992, Ghosts of Chaffee County; Centennial Graphics, Lakewood CO.

Crawford, R.D., 1913, Geology and Ore Deposits of the Monarch and Tomichi Districts, Colorado; Colorado Geological Survey Bulletin 4.

Del Rio, S. M., 1960, *Mineral Resources of Colorado, First Sequel*, State of Colorado Mineral Resources Board, Denver, CO.

Dings, McClelland G. and Robinson, Charles S., 1957, Geology and Ore Deposits of the Garfield Quadrangle, CO; U.S. Geological Survey Professional Paper 289.

Hazen, , Scott W. Jr, 1956, Exploration for lead and zinc at the Madonna Mine, Monarch Mining District, Chaffee County, Colorado; U.S. Bureau of Mines Report of Investigations 5218.

Henderson, Charles W., 1926, Mining In Colorado: A History of Discovery, Development and Production; U.S. Geological Survey Professional Paper 138.

Mindat.org; accessed 22 August 2012.

Shannon, James R. and McCalpin, James P., 2006, Geologic Map of the Maysville Quadrangle, Chaffee County, Colorado; Colorado Geological Survey Open-File Report 06-10.

Vanderwilt, John W., 1947, *Mineral Resources of Colorado*, State of Colorado Mineral Resources Board, Denver, CO.

Worcester, P.G., 1919, Molybdenum Deposits of Colorado; Colorado Geological Survey Bulletin 14.