

MONTANA GEOLOGY



"RICHEST HILL ON EARTH"
Dublin Gulch, Butte (circa, 1910)—Diane Nugent

January

S	M	T	W	T	F	S
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February

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March

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April

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May

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October

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November

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December

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23 ³⁰	24 ³¹	25	26	27	28	29

HISTORIC BUTTE

“Richest Hill on Earth”

Born of the placer gravels of Silver Bow Creek in 1864, and nurtured by silver workings to the close of that century, the camp called Butte City eventually scratched, dug and blasted its way to the “copper metropolis of the Americas.”

During its course it became a microcosm of nearly every county of the world—“a virtual Ellis Island on a hillside.”

Early descriptions commonly reported that Butte was a prodigal, fun-loving, rough-and-ready town, particularly on Saturday when the miners were paid—a “rambunctious exhibition,” one writer said. Though at times appearing rowdy and somewhat reckless, the place eventually earned a reputation for colorful personalities, a competitive spirit, fellowship, and, when the occasion arose, was more than capable of “giving its shirt” and offering a gracious hand.

At its peak, following World War I, the Butte scene was incredible—a fully industrialized city of nearly 100,000 people that sustained a thriving business district which operated around the clock. During its heyday, “uptown Butte” never closed. The shifts of miners coming and going clogged the streets to the point where the only difference between 12:00 noon and 12:00 midnight was that the latter was dark. It was an urban spectacle that no other city could imitate. In this robust lifestyle, many found solace from the frenzied pace knowing that 13 breweries also existed in the city—supplying over 500 bars, which didn’t leave much dry land between “watering holes”.

Settled initially by Irish, Welsh, and English miners, the town soon attracted an influx of immigrants and began to fashion itself into ethnic neighborhoods, or communities, that catered to their own, mainly because of language, religion, and customs. There was a small Chinatown, German and Slav districts, and the Finns sited themselves high on the northeast side amidst the tailing mounds of the “hill”. An area called Clear Grit Terrace housed the Cornish; Dublin Gulch was home to the “boys of Erin”; and Meaderville, famous for its Italian restaurants and nightclubs, lay to the east nestled in Yankee Doodle Gulch.

Within these environs there existed 150 mines and 12 smelters operating 200 incessant stamps that pounded the ore mercilessly, and with operations like the “Seven Stacks of The Neversweat”, belched enough smoke to obscure the nearby mountains. There were over 15,000 men working underground, carving out the “hill” into a labyrinth of crosscuts and drifts that was roughly estimated at 2,000 miles—and was being extended at the rate of 35 miles a year.

In 1955, mining changed to the open-pit method. The pros and cons of the development of the Berkeley Pit by the Anaconda Company have been weighed, vigorously debated, and rationalized over the years. No doubt, its development was necessary in the economic survival of the area, but undeniably, the price was high. During the course of its widening expansion, the pit consumed three communities, six schools, three churches, numerous businesses, and necessitated the relocation of homes and hundreds of people. From the viewing platform today, overlooking the pit to the northeast, a few remaining trees and street grids can still be seen that outline a portion of the former sites of McQueen and East Butte. The locality of Meaderville has been entirely eliminated by the pit.

On April 30, 1982, a management decision by Atlantic Richfield (the parent company), resulted in the closure of the Berkeley Pit operation. Following a short period of inactivity, open-pit mining continued, however, in a newly developed area a short distance to the east. This excavation, called the Continental Pit, is presently owned by Montana Resources. The source area maintains a daily production of over 50,000 tons of ore, of which 87% of the copper and 68% of the molybdenum is recovered by the concentrator in the milling process.

The geology of the Berkeley ore body is briefly described as being a hydrothermally (high temperature) deposited network of veins and disseminations of copper sulfide minerals occurring in a host rock termed the Butte Quartz Monzonite of the Boulder batholith. The age of the batholith is approximately 70 million years, however, subsequent geologic dating has shown that emplacement of the mineralized zones took place about 20 to 30 million years later. The principal copper minerals of the ore body are chalcocite, chalcopyrite, bornite (peacock copper), covellite, and enargite. The grade of the copper ore averaged approximately 0.75 percent.

Modified from Montana Bureau of Mines and Geology Special Publication 89, p. 150-157.

Watercolor from photograph, courtesy Smithers Collection, Butte.



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speaking to public groups on aspects of Bureau research, and Montana geology and hydrology

Charter, Scope and Organization

The Montana Bureau of Mines and Geology (MBMG) was established in 1919 as a public service agency and research entity of the Montana College of Mineral Science and Technology. The Bureau Director serves as the State Geologist and represents Montana in the Association of American State Geologists.

Enacted by Legislative Assembly of the State of Montana (Section 75-607, R.C.M., 1947, Amended), the scope and duties of the agency are summarized as follows:

● To collect, compile, and publish information on Montana's geology, mining, milling, and smelting operations, and ground-water resources.

● To maintain collections of geologic and mineral specimens, photographs, models, and drawings of mining and milling equipment, and literature on geology, mining, and ground water.

● To conduct investigations of Montana geology, emphasizing economic mineral resources and ground-water quality and quantity.

In accordance with the enabling act, the MBMG conducts research and provides information, but has no regulatory functions. To carry out its duties most effectively, the Bureau operates in five divisions: Geology and Mineral Resources, Hydrology, Administration, Analytical and Information Services.

Selected Publications on Montana Geology

Bulletin 128—Directory of Montana mining enterprises for 1988, compiled by Robin McCulloch, *with a section on* Gold placers: A signature for lode-gold deposits in Montana, 1989, 49 p., 6 figs., 1 table, 1 appendix, 1 sheet. \$3.00

Special Publication 89—Profiles of Montana geology: A layman's guide to the treasure state, David D. Alt, 1984, 168 p., 180 figs. \$12.00

Special Publication 94—Belt Supergroup: A guide to Proterozoic rocks of western Montana and adjacent areas, Sheila M. Roberts (*ed.*), 1986, 311 p., 175 figs., 11 tables, 10 color plates. \$25.00

Special Publication 95—Guidebook of the Helena area, west-central Montana, compiled by Richard B. Berg and Ray H. Breuninger, 1987, 64 p., 20 figs., 1 table. \$5.00

Reprint 6—Gold placers of Montana (2nd edition, *revised*), Charles J. Lyden, 1987, 120 p., 23 figs., 22 maps. \$10.00

Information Pamphlet 1—Butte—Under the hill: A brief introduction to mining and geology, Sharon E. Lewis, 1989, 9 p., 6 figs. \$1.00

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