

THE WORLD MUSEUM OF MINING, BUTTE, MONTANA

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It was of course gold which first attracted miners to Butte, Montana, in 1875, but as it turned out it was copper which underlay "the richest hill on earth" (one of several such), turning a small town into one of the world's richest mining camps, and which led to the building of vast smelting facilities at a new town called, after the richest mine at Butte, Anaconda.

The leading figure in their growth was Marcus Daly, one of a substantial number of Irishmen at the heart of the 19th century American mining industry. Daly had gained his experience on the Comstock silver lode of Virginia City, Nevada, and moved to Butte to manage the Alice silver mine. He was first lucky enough, then astute enough, to buy a share in a copper lode - the Anaconda, in 1882. He persuaded a San Francisco syndicate - George Hearst, Lloyd Tevis, and James Ben Ali Haggin to join with him to develop the mine, believing that the newly developing electricity industry would lead to a large growth in the demand for copper. This syndicate was to control the largest gold mine - the Homestake (South Dakota), the largest silver mine - the Ontario (Nevada), and in Anaconda, the largest copper mine, in North America, all purchased at an early stage in their development. There were of course other "copper kings" in Butte, amongst them F. Augustus Heinze, a master of apex law (extra-lateral rights) litigation, and William Andrews Clarke, described as "fabulously wealthy", and longing for political power. The story of their rise, and the disputes and feuds between them is an enthralling one on its own, with all manner of foul deeds and villainy, and even heroism. Some of the main excitement was underground, with warfare between mines using ammonia, dynamite, compressed air and lime (see for instance Marcossan 1957; Malone 1981; Sales 1964).

Technologically the Anaconda Company was outstanding: its hoisting plant dominated the Butte landscape of dozens of mines with its ten enormous chimneys; it could afford the most skilled of engineers, and was amongst the first to use electric trolley locomotives underground in c1907. Daily output was enormous by then standards, rising from 600 tons in 1882, to 8500 tons by 1907 (Weed 1907): it should be remembered that this was relatively high grade ore with up to 6% copper content. By the 1970s, when underground mining virtually ceased, the "Hill" was said to have some 10,000 miles of tunnels in it. To avoid disputes about pollution, and to secure better water, coal, and electricity, Daly decided to build a smelter about 26 miles away, around which was built the town of Anaconda. After failing to get the railway company to reduce its rates, Daly went on to build the Butte, Anaconda, and Pacific Railroad between the towns. There were also huge forest areas bought to supply timber for the mines, and hydro-stations for electricity: the Anaconda Company was making its first strides in what was to become an international mining corporation.

The Anaconda works were hard put to keep up with the growing output from the mines, and the works were continually being modified and extended. The simple water-cooled blast-furnace which had first enabled

American mining to be free of the dominance of South Wales was circular with a hearth of no more than five or six feet diameter - limited by the penetration of the blast. After 1890, in a series of developments, literally lateral thinking, in which the circular furnace was first split into two halves, joined by flat walls with rows of blast pipes, the hearth of the largest blast-furnace was some 140 feet long, by 5 feet wide (Hixon 1908; Peters 1907). Reverberatory furnaces grew to over 100 feet long. From 1908, a new smelter, the Washoe, was built on the opposite, south side, of the valley, with an enormous, over 800 feet high stack to disperse the fumes.

By 1928 all the mines at Butte had come under the control of Anaconda, so that production was centralised, and many of the smaller hoists became disused: mining at those left however was to go down to depths of 5000 feet and more. However with lower grades, and increasing costs, not to say competition from low cost open-pit mining in other areas of the world (Anaconda itself took over the world's largest copper mine, Chuquicamata in Chile in 1923), this all had eventually to come to an end. In the 1950s an open-pit was started, and underground mining ceased. It all came to an end in 1980 when the Washoe Smelter closed.

The conception of a World Museum of Mining came before this drastic event, which left both towns bereft of their original purpose, and it has developed now for over a decade. As originally conceived, it was grand indeed, planned for a 38 acre site, featuring, as well as the obvious development of Montana copper, the search and exploitation of oil, foreign mining, and rather curiously, an exhibit of those early Montana citizens, the dinosaurs!

The main site of the museum, visited by some 100,000 people annually, is adjacent to the headframe, or gallows, of the Orphan Girl Mine and occupies about 12 acres. Immediately next to the gallows is an impressive collection of mining artefacts: tools, waggons, kibbles, cages, drilling rigs and so on, as yet only marginally interpreted. There are others, less robust, in mine buildings nearby, with a collection of photographs and other memorabilia. The most impressive section is undoubtedly "Hell Roarin' Gulch", a small "city" of reconstructed timber framed buildings brought in from the surrounding area, complete with fully equipped accommodation for the dentist, lawyer, laundry, etc., and even the tenderloin district! This is perhaps the best such display seen in the USA, avoiding the overdone features of say Tombstone in Arizona, and giving a more realistic impression than Bodie in California. Tours of the "Hill" are possible via a roadtrain, including the open-pit, and you can ride on the Neversweat and Washoe Railroad. The commentary by the driver is probably the best way to

get to know an outline history of the area in a short while.

The area around is worth spending time on if possible. Much of the old part of Butte is in place - decline all too often is kinder than prosperity on old buildings. As everywhere in the west, the old timber-built town caught fire, and was renewed handsomely in brick, giving a good impression of the boom of the past. The outskirts, especially Walkerville, still has many of the earlier timber-framed houses, and beyond the city limits it is possible to find a number of smaller mines with more or less surviving for examination. Those nearer town are usually, but sometimes ineffectively, fenced off.

Anaconda, of the smelter, suffered almost complete removal of its industry, but despite 20% unemployment, still contrives to look good. It was originally a complete "company town", the pride of its founder, Marcus Daly. The Washoe smelter has gone except for its enormous stack, which is now a state monument, and the black slag heaps. On the north side of the valley are the rather more interesting remains of the pre-1908 smelters, with their enormous flues used to conduct fumes to stacks on top of the hill. There are remains too of the floors on which stood the blast-furnaces and Bessemer converters used to produce and the refine the copper-matte. The town has an information centre in the former station booking hall, with glossily preserved locomotives and waggons outside. Not far away, is a small gold mine, the beginning, one hopes, of a renaissance in the area, allegedly owned by an English syndicate.

And if you feel that at home you have missed out on the newsworthy presence of radon gas in your sub-floor - then a short journey, by American standards, will take you to the Sunshine Radon Health Mine at Galena Gulch. Here you can walk right into the mountain at road level, into electrically lighted chambers to seek relief and benefit whilst breathing elements in the mine air. According to the advertising leaflet, a noted arthritic specialist has hinted the inhalation of the mine air may stimulate a master gland through a natural, medical radiation within the human body. Should suit ageing Society members.

Butte, its museum, and the surrounding area, is well worth your time if you are in the north-west. It compares with the best in California, for instance with Bodie and a combined visit to the Kentucky Mine and nearby Plumas-Eureka, though like most western museums, it relies on the mine site and inherited attractions rather than interpretation.

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REFERENCES

- Hixon, H.W. 1908 *Lead and Copper Smelting* (4th edition). McGraw-Hill.
- James, Don. 1980 *Butte's Memory Book*. Caxton Printers Ltd, Caldwell, Idaho.
- Malone, Michael P. 1981 *The Battle for Butte*. University of Washington Press, Seattle.
- Marcosson, Isaac F. 1957 *Anaconda*. Dodd, Mead, and Co. N.Y.
- Peters, Edward Dyer. 1907 *Principles of Copper Smelting*. Hill Publishing Co. N.Y.
- Sales, Reno H. 1964 *Underground Warfare at Butte*. Caxton Printers Ltd. Caldwell, Idaho.
- Weed, Walter Harvey. 1907 *The Copper Mines of the World*. Hill Publishing Co. N.Y.