A

Memorial and Biographical History

OF

NORTHERN CALIFORNIA

ILLUSTRATED.

Containing a History of this Important Section of the Pacific Coast from the Earliest Period of its Occupancy to the Present Time, together with Glimpses of its Prospective Future; Full-Page Steel Portraits of its most Eminent Men, and Biographical Mention of many of its Pioneers and also of Prominent Citizens of To-day.

"A people that takes no pride in the noble achievements of remote ancestors will never achieve anything worthy to be remembered with pride by remote descendants."—*Macaulay.*

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north from the town of Lower Lake. It has been worked for a good many years, the former production having been much larger than at present. The ore now beng extracted comes from what seems to be an eruptive dike breaking through a sandstone formation. The crevices of this dike are filled with a clayey matter, some of which carries a considerable percentage of cinnabar. In breaking out the ore here much barren rock has to be removed.

Owing to the presence of sulphurous fumes, ore extraction is not carried to any great depth. The work of exploitation consists of open cuts and short tunnels. About two hundred pounds of Hercules powder, No. 2, are consumed monthly. The ore is carted to the reduction works, which consists of ten sublimating furnaces, six of the Knox & Osborn style, and four of the Hutton & Scott. At present only two furnaces are being operated. A total of eighty-six men is employed here—twelve in the reduction works, the remainder in the mine and on the outside. Wages paid range from $1.15 per day and $70 per month. Five cords of wood are consumed daily. Fuel and lumber, the latter at the rate of $20 per thousand feet, are obtained from the vicinity of Lower Lake.

The Bradford mine, located in 1882, is situated four and one-half miles south from the village of Middletown, on the stage road leading from that place to Calistoga. The vein here, which has a north and south trend, and inclines to the east at an angle of forty-five degrees, lies between sandstones on the hanging, and serpentine on the foot-wall. The mine has been opened by a shaft sunk to a depth of two hundred and fifty feet, and which, at a depth of sixty feet, leaves the vein and passes into foot-wall. This shaft, which is timbered throughout, is fitted with a single reel six by eight-inch spur-geared reversing engine. A No. 4 Dow steam pump, run four hours per day, suffices to handle the water. At present work is confined to the one hundred and sixty-foot level, above which the vein is being stoped, no definite limit having yet been found to the ore shoot. The ore being extracted consists of sulphuret of mercury, mixed with jasper and country rock.

The coarse ore is treated in a Knox & Osborn furnace, of twenty tons daily capacity, the fine in a thirty-ton Livermore furnace. Iron condensers are used, the draft being aided by an exhaust fan. The reduction works are connected with the shaft by a tramway eight hundred feet long. A total of thirty-five men are employed here; white men are paid $2.50 per day, and Chinese $1.25. Two cords of wood are consumed daily.

The Great Western mine, which has been worked since 1856, is located four miles south of Middletown. The claim covers six thousand linear feet on the vein, which strikes east and west, and dips to the south at an angle of sixty-five degrees. The hanging-wall is clay-slate, quite soft near the vein; the foot-wall is serpentine. In the first instance the mine was opened by and worked through a tunnel two thousand two hundred feet long, intersecting the vein at a depth of two hundred and nineteen feet. Work is now carried on through a shaft three hundred and fifty feet deep. Both shaft and tunnel are thoroughly timbered.

For ore hoisting a ten by eighteen-inch double spur-geared reversible hoist is used. For handling the water a No. 6 Dean steam pump, with two one and one half-inch columns, is employed.

The ore is cinnabar, the fine being worked in a twelve-ton Knox & Osborn furnace; the coarse in a thirty-ton Green furnace. For creating draft in the condensers, blowers driven by a six by eight-inch horizontal engine are employed. Water is brought on the premises through two miles of flume and three-fourths of a mile of piping. Six cords of wood are consumed daily—three for steam purposes and three in the furnaces. About two hundred pounds of Safety Nitro powder are used every ninety days. The company employs thirty men in the mine, and fifteen in the reduction works, the white men receiving $3 per day and the Chinese $1.15.

Gold and silver-bearing ores of low grade have been found at several localities in the county;