

DAKOTA IMAGES

Charles Washington Merrill, an engineer and metallurgist, gained fame for his work at the Homestake Mining Company, where he instituted an innovative cyanide process to extract gold and silver from ore waste concentrates.

Merrill was born in New Hampshire in 1869 and moved with his family to San Francisco, graduating in 1891 from the College of Mines at the University of California. Having specialized in the study of the cyanide process, he spent the next several years testing his own theories at gold mines in California, Arizona, and Montana.

Merrill's association with Homestake began in 1898, when he helped the company develop more efficient methods for treating its waste concentrates, or tailings. Merrill and his new bride, Clara Scott Robinson, visited Homestake headquarters in Lead in early 1899 and returned to San Francisco where he conducted laboratory experiments. Merrill believed so enthusiastically in the efficacy of his process over Homestake's traditional smelting method that he volunteered to work without pay until his cyanide process proved profitable. Homestake manager Thomas J. Grier agreed to build an experimental plant for processing crushed gold-ore sand in June 1899, followed by the construction of a second plant in 1901. Before long, the new plant was recovering forty thousand dollars a month in gold from what had been waste. Merrill later developed a second process to extract more gold from the muddy slime that remained after ores had been treated.

Merrill enjoyed the friendship of another creative engineer, John Van Nostrand Dorr, who became famous for his inventions used in ore milling. Merrill quickly adopted one of Dorr's innovations, a thickener that allowed more water to be recovered in the slime process than his own filter presses had achieved.

Following nearly ten years with Homestake, Merrill, who was known in the Black Hills as "Cyanide Charlie," returned with his family to California in 1908. There, he used the fortune his successful operations at the Homestake had garnered to establish the Merrill Company and several subsidiaries. The father of four children, he died on 6 February 1956 at the age of eighty-seven.

—Janet Daley



Charles W. Merrill

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