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THE HOPE MINING COMPANY OF PHILIPSBURG

by

DONALD L. SORTE

B.A. Montana State University, 1957

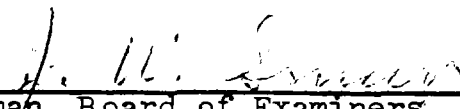
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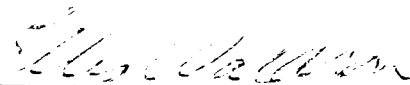
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1960

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PREFACE

This study was undertaken primarily to provide some basic research in the field of Montana economic history. The Hope Mining Company was chosen for a number of reasons. First, a good deal of information was available in the business records of the company at the Montana State Historical Society Library at Helena, Montana, and in the Letterbooks of James and Granville Stuart at the Montana State University Library at Missoula, Montana. Second, silver mining as an industry in Montana has been long neglected by writers who concentrated on the more romantic gold and copper mining industries. And third, the Hope Mining Company provided a good subject for a case history because of its long period of active operation in Montana.

The paper is not intended as a history of silver mining in Montana, nor even a sophisticated analysis of the Hope Company. If the author has made the raw data stored in Helena available to other scholars in some sort of order, he will be most satisfied. It is hoped that these data will become more valuable after the business records of the Granite Mountain and Bi-Metallic Mining Companies, stored at the Montana State Historical Society Library, are sorted and compiled in a similar manner. The nature of the data and the aim of this paper suggested the chronological organization and quantity of statistical data which are included in the text. It is believed that in the present form, the paper will best achieve the aim of providing groundwork for a larger study of silver mining in Montana.

Obtaining data concerning silver mining for an economic history presents unique problems. Although a number of monographs have been written on silver mining, a good economic history on the subject does not exist. T. A. Rickard's A History of American Mining remains the best single study of mining in the west even though the book is now old and written from an engineer's viewpoint. Robert S. Lewis' Elements of Mining and Theodore J. Hoover's Economics of Mining are useful, but again written by engineers. While limited in scope, Clark Spence's British Investments and the American Mining Frontier provides an excellent account of promotional techniques used in early mining ventures. A good deal of information can also be gleaned from the older histories of Montana, but these books contain little information on economic history. R. W. Raymond has written several valuable books, and Alex Del Mar's A History of the Precious Metals from the Earliest Times to the Present and Grant H. Smith's The History of the Comstock Lode, 1850-1920 would have been useful had they been available.

Periodical articles concerning the economic history of silver mining are almost nonexistent. A good deal has been written on the silver controversy and gold mining, but most articles on silver mining emphasize engineering. Several Government reports do contain valuable information, especially W. H. Emmons and F. C. Calkins' Geology and Ore Deposits of the Philipsburg Quadrangle Montana for this particular study.

The most valuable sources of information used in this study are the original papers of the St. Louis and Montana Mining Company, the Hope Mining Company, the Granite Mountain Mining Company, S. T. Hauser,

and the Stuart brothers. Without these original records, the study would not have been possible. Newspaper accounts provide valuable supplemental information, but financial information contained in newspapers must be handled with extreme care.

Appreciation is due the staff of the Montana State Historical Society Library at Helena for their cooperation and aid, particularly John W. Hakola. And John W. Smurr has given generously of his time and patience in guiding me.

D.L.S.

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CHAPTER I

ST. LOUIS AND MONTANA MINING COMPANY, 1865-71

Silver mining in the West presented problems quite different from placer mining. A placer mine consisted simply of a shallow hole dug into sand or gravel, with the equipment needed to work such a mine consisting of a shovel, pick, pan and strong back. Expenditures might later be made to construct sluice boxes, tunnel into the deposit, build water supply ditches, or employ hydraulic mining methods, but the process remained essentially one of removing loose particles of metal from alluvial deposits.

Silver mining usually involved removing the metal from veins or lodes of quartz. The quartz had to be mined, crushed in some sort of mill, processed to recover silver bullion, and the bullion finally smelted for purification. Because the processes required in silver mining were more complex than placer mining, larger capital outlays were required.

Realizing they could not work silver veins without capital, yet recognizing their value, many miners claimed silver veins or lodes for speculative purposes. The problem for these persons became one of finding a buyer or investor for their claims. Because substantial investment capital did not exist in Montana, the owners of such claims had to look elsewhere. The St. Louis and Montana Mining Company drew its capital investment funds from St. Louis. The link between Montana claim owners and St. Louis investors was supplied by Samuel T. Hauser.

Hauser was born in Kentucky in 1833, and after becoming a civil engineer, he spent eight years working for railroads in Missouri and then went to Montana in 1862 with W. B. Dance. In Montana they met Granville and James Stuart and Rezin Anderson. These men became the Montana stockholders in the St. Louis and Montana Mining Company. Hauser was a cousin of Luther M. Kennett, and he later married the daughter of D. A. January, both of St. Louis. Through these two men, access to investment capital was obtained.¹

In 1865 Hauser returned to St. Louis with a power of attorney to represent a number of Montana claim owners. These persons owned claims which averaged two hundred feet on quartz veins or lodes. Each claim was too small to be mined itself, but combined they might sell for a good price.²

Hauser carried with him a report showing an average assay of almost three hundred dollars in silver per ton of ore on six of the claims. Pending confirmation of the assay report, a tentative agreement for sale of the claims was reached between Hauser and the Missouri Petroleum and Mining Company. The assay results were confirmed and the company agreed to pay \$50,000 for the claims. Based on the value of

¹A Newspaper Reference Work (Butte, Montana: Butte Newspaper Association, 1900), no pagination. For short biographical sketches of these man, see Appendix C, p. 84.

²Miscellaneous Deeds of S. T. Hauser, May 18, 1865, in S. T. Hauser Papers (Montana State Historical Society Library, Helena, Montana). Cited hereafter as Hauser Papers. For a biography of this important Montana capitalist, see the forthcoming study by John W. Hakola.

this property, a subsidiary company was formed with \$400,000 capital stock--a sizeable amount of this stock was thus "water"--and the following month a prospectus was issued.³

This new company was styled the Missouri and Montana Mining Company, incorporated under the laws of Missouri with John How as president, Samuel T. Hauser as vice president, and a board of directors consisting of D. A. January, Enno Sander, Alexander Stewart and Samuel Gaty. The company issued 4,000 shares of stock worth \$100 each and reserved \$150,000 for working capital. The property owned included 1,000 feet of silver claims in six lodes in the Rattlesnake (Argenta) area, 400 feet near Virginia City, 400 feet in the Deer Lodge district, and 200 feet near Bannack City--all in the southwestern portion of Montana Territory.

According to the prospectus, the future was extremely bright. The Rattlesnake lodes assayed over \$2,000 per ton, while expenses would run no more than \$23 to \$45 per ton, as in the Washoe and Reese River silver mining districts of Nevada. The prospectus showed that if all lodes were worked, annual profits would be 39 million dollars--a good deal more than the company subsequently earned in more than forty years of operation. Montana was a beautiful place, the prospectus continued, well adapted to agriculture, and easily accessible at any time during the year. The ore veins were three to six times wider than those of the Washoe and Reese River districts, mine shafts could be driven to

³Letters of A. K. Eaton to Hauser, April 25; C. C. Backus to Hauser, May 31; P. A. Ladue to Hauser, May 13; Memo of Agreement, May 28, 1865, Hauser Papers.

500 feet before the water level was reached--how this was determined is difficult to understand--and the veins became richer as they descended. A large number of people were flowing into Montana, soon to be swelled by thousands of soldiers who had "made known their intention to proceed at once to the Montana mines" where they could "enjoy all of the accustomed pleasures and excitements of camp life." The company had scattered claims which, owing to the large investments being made in Montana, could be worked or sold at a profit.⁴ How could the enterprise fail?

It is difficult to say whether one should attribute ignorance, deception, gross misrepresentation, or to be somewhat kinder, unbridled optimism to the author of this prospectus. Certainly the businessmen of St. Louis, a city long engaged in trade with the west, were more cognizant of actual conditions than this pamphlet indicates. Yet, in an age when the giant corporation was an infant and regulation of business methods a violation of personal freedom, perhaps none of the attributions is correct. If forced to choose among the possible explanations, I would favor optimism. Certainly most persons associated with mining during that period were afflicted to a greater or lesser degree with the malady known as "mining fever." And, certainly, this optimism seemed justified when miners were scurrying from strike to strike, often forgetting how short-lived some strikes were, but never forgetting that the strikes were made. The prospectus, while flamboyant in

⁴Prospectus of the Missouri and Montana Mining Company (St. Louis: R. F. Studley & Co., 1865).

language and optimistic in tone, was probably as honest as many of the period, more honest than some.

The history of this company is unknown. In July, however, a second prospectus was issued under the name of the St. Louis and Montana Mining and Discovery Company. This pamphlet contained essentially the same information as the Missouri and Montana Mining Company prospectus. Except for the opening paragraphs describing real property, the second pamphlet quoted directly from the first.

These two companies may never have actually conducted any mining operations. They were both subsidiary to the Missouri Petroleum and Mining Company. These prospectuses reflected the shifting nature of ownership during the summer of 1865 as attempts were made to lure investors into the venture, and it is doubtful if either company continued to exist after the formation of the St. Louis and Montana Mining Company in the autumn of 1865.

Hauser negotiated with L. M. Kennett for the latter to act as president of the St. Louis and Montana Mining Company and attorney-in-fact for Hauser in all matters pertaining to the Missouri Petroleum and Mining Company.⁵ Although not yet formally organized in the fall of 1865, the St. Louis and Montana Mining Company sent Augustus Steitz to Montana City (Argenta) to construct a smelter.⁶

The following January the company was formally organized as a subsidiary of the Missouri Petroleum and Mining Company with capital

⁵Prospectus of the St. Louis and Montana Mining Company (St. Louis: 1865).

⁶For a short biographical sketch of Steitz see Appendix C., p. 84.

stock of \$600,000. The holdings of the company included 4,800 feet of claims in the Eaton, Savage, Metropolitan, Beeker, Kearsage, Butterfield, Wadam, St. Louis, Gibraltar, Red Cedar, Golden Gate, Nonpareil, Henry Clay, Rothchild, Prolific, Barrow, Great Eastern and Prickly Pear lodes--none of these located at Philipsburg. The board of directors included an impressive array of St. Louis and Montana owners.⁷ To oversee operations, an executive committee for Montana was formed consisting of Hauser, Walter B. Dance, James Stuart and Rezin Anderson.⁸

When the Missouri River opened in 1866, machinery was shipped to Montana by river steamer. The smelter begun at Montana City (Argenta) by Steitz in 1865 was partially completed with the help of Philip Deidesheimer, and in August 1866 Steitz began preparations for production.⁹

The plant at Montana City was not fully completed, however, and Steitz needed more money. In late August, Hauser proposed that the Montana owners advance eight or ten thousand dollars to insure completion before winter began as it was too late to request funds from St. Louis and get a reply.¹⁰ James Stuart went to Montana City to inspect the plant and concluded that Steitz was overly optimistic and suffering from a "severe attack of quartz on the brain." In spite of this,

⁷For a list of the directors and shareholders of this and other closely related companies see Appendix C, p. 84.

⁸The Helena Herald (Helena, Montana), May 24, 1867, p. 1.

⁹A Steitz to Hauser, August 16, 1866, Hauser Papers. For a biographical sketch of Deidesheimer see Appendix C, p. 84.

¹⁰Hauser to W. B. Dance and James Stuart, August 26, 1866, Hauser Papers.

he considered Hauser's judgment sound and agreed to advance any sum necessary to complete the plant.¹¹

Two months later Steitz reported that the hot blast was beginning to disgorge freely, double shifts had been instituted, and the two main furnaces completed.¹² The Montana Post said Steitz had about sixty men employed at the works which consisted of blast, cupelling and roasting furnaces, Scotch hearths and machinery constructed on the Freiberg plan used in Germany. After operations began, Steitz recovered forty pounds of silver from one ton of ore--a promising return.¹³

The smelter continued to operate throughout the winter. Because of illness, Steitz was replaced by Deidesheimer, who advised Hauser in early 1867 that he would continue to operate the works at Montana City until Steitz recovered and then proceed to erect the mill planned at Philipsburg (Flint Creek).¹⁴

Hauser returned to St. Louis early in 1867 to raise more capital for the mill planned at Philipsburg. The St. Louis investors agreed to allocate \$100,000 for development in Montana, while W. B. Dance and James Stuart sought to expand the company holdings at Philipsburg.¹⁵

¹¹James Stuart to Hauser, Sept. 14, 1866, *ibid.*

¹²Steitz to Hauser, October 1, 1866, *ibid.*

¹³The Montana Post (Virginia City, Montana), October 6, p. 1,

¹⁴Philip Deidesheimer to Hauser, undated (early 1867?), Hauser Papers.

¹⁵The Helena Herald: Supplement, February 21, 1867, no pagination. Dance to Stuart, March 20, 1867, Hauser Papers.

Meanwhile the smelter at Montana City was started by Deidesheimer and, although the lining of the furnace caused trouble, the operation was successful for a short time.¹⁶ After the furnace lining was repaired, a considerable amount of ore was smelted, but the Montana City works were not profitable. Perhaps the major reason for failure was the scanty knowledge of smelting processes. In addition, there was no market for the lead produced as a by-product, coking coal was not locally available (the company used charcoal as a substitute), and transportation was costly.¹⁷ The Montana City works were closed in the summer of 1867.¹⁸

Of the various reasons for failure, transportation costs are of special interest. With all her natural riches, Montana was, and to some extent remains, geographically isolated from sources of supplies and markets. Modern means of transport have alleviated the problem but have not remedied it completely. In the 1860's supplies and ore could be hauled by wagon to Ft. Benton and shipped via the Missouri during the summer months, hauled by wagon some 500 miles south to Corrine, Utah, and shipped via the Union Pacific Railroad after 1869, or hauled west by wagon over the Mullan road to Walla Walla, Washington and transshipped via the Columbia River. Any route was costly; all required haulage of several hundred miles by wagon through

¹⁶The Rocky Mountain Gazette (Helena, Montana), March 30, 1867, p. 1.

¹⁷R. W. Raymond, Statistics of Mines (New York: J. B. Ford & Co., 1869), pp. 150-51.

¹⁸W. S. Keys to Hauser, August 5, 1867, Hauser Papers.

mountainous country. The hardships that could be caused by weather, especially in winter, are apparent to anyone familiar with Montana where weather conditions are seldom moderate. A further complicating factor was the uncertainty of how far supplies had to be freighted by wagon if they moved to or from the Missouri. During the winter the river was blocked by ice, and in the summer low water often prevented steamboats from proceeding beyond Ft. Union near the present day Montana-North Dakota state boundary. If the problem of transport had been solved, the lack of a lead market and coking coal would not have been so crucial.

By mid-1867, construction of the James Stuart mill at Philipsburg had begun with G. C. Swallow assisting in construction.¹⁹ Samuel Gaty replaced L. M. Kennett as president, and in July 100 men were at work on the mill under the supervision of James Stuart.²⁰ While the work progressed during the summer of 1867, the investors in St. Louis complained about the non-receipt of ore shipments and information concerning local operations. John How told Hauser that the directors were tired of promises and lack of information. The company would not advance any more funds until progress reports were received. He ended saying: "I write you wishing I had never heard of Montana."²¹

¹⁹The Rocky Mountain Gazette, June 22, 1867, p. 3.

²⁰L. M. Kennett to Hauser, June 6, 1867, Hauser Papers. The Rocky Mountain Gazette, July 6, 1867, p. 1. The Montana Post, August 10, 1867, p. 1.

²¹Samuel Gaty and John How to Hauser, June 11 and August 12, 1867, Hauser Papers.

The James Stuart mill was completed October 3, 1867 at a cost of about \$75,000. After a short run to adjust machinery, full operations began October 14. The mill had a custom-built 45 horsepower steam engine, ten ore stamps, six amalgamating pans, and three concentrators. The opening was a gala event for Philipsburg and was accompanied by a celebration which included speeches, toasts, a band and dancing.²²

Operations began as a complete success, and James Stuart notified treasurer How that 259 pounds of bullion were recovered from 35 tons of ore at a cost of \$25 per ton for processing. One month later the milling of 250 tons of ore had yielded 790 pounds of bullion. Encouraged by these results, James Stuart put two shifts of miners on the Hope lode to dig a six-foot square hole designed to reveal the extent of the ore body.²³

Work on the Hope lode continued during the following winter. Philipsburg now had a population of 600, and the Herald called the mill at the end of Main Street "an ornament in its architectural finish" and "a model of workmanship."²⁴ In September, 1867, 1,644 shares of special preferred stock were issued with prospects apparently good enough for Hauser to invest an additional \$16,100 (460 shares) for himself "and associates."²⁵ Exhaustion of the ore body caused the

²²The Montana Post, October 26, 1867, p. 5. See also Appendix B, p. 79.

²³W. H. Keys to James Stuart and Hauser, October 15 and November 21, 1867, Hauser Papers.

²⁴The Helena Herald (Helena, Montana), January 2, 1868, p. 7.

²⁵Receipt of How to Hauser, February 11, 1868, Hauser Papers.

mill to stop early in 1868, but the company had succeeded in recovering 58.5 per cent of the silver content in the ore compared with only 40 per cent when operation first began.

With the mill closed, exploration and development work continued on the Hope lode during the summer of 1868. The ore recovered was not sufficient to keep the mill in steady operation, however, and by August the mill was doing custom work on ores from the Rumley and Burgher lodes. Two months later the mill was operating on second class ore from the Poor Man's Joy with better quality ore shipped to New York or Europe for processing.²⁶

Custom milling did not pay expenses, however, and James Stuart was disappointed in silver mining. By October, 1868, he was ready to get out of the company because, as he wrote Hauser, quartz mining was "humbug" and would pay only once in a thousand times. He estimated that \$100,000 were required to pay debts, prospect, and wait for a paying lode to be discovered. The company owed more than \$40,000 by this time and prospects for improvement were dim. Dance agreed.²⁷

The company was indeed in financial difficulty, and in October, 1868 supplies at Montana City were attached for debts. In addition, the company owed \$2,000 in taxes to three counties--Beaverhead, Madison, and Deer Lodge. The company agent at Montana City had been trying to sell the equipment for a year with no success. Stuart said that only a mortgage held by Dance, Stuart and Company prevented a number

²⁶The Helena Herald, March 26, 1868, p. 1.

²⁷James Stuart to Hauser, October 16, 1868, Hauser Papers.

of law suits. Apparently the mortgage of Dance, Stuart and Company covered most of the property at Argenta, thus giving them first right to collection of debts.²⁸

One month later the mill at Philipsburg was closed with all except five miners discharged. Because custom milling of Rumley and Burgher ores on a percentage basis was not profitable, James Stuart offered to mill the ore for \$25 per ton in currency. The offer was refused. Although there was enough ore available to pay expenses, litigation concerning the ownership of claims persuaded James Stuart to close the mill.²⁹

Silver production in Montana during 1868 yielded about \$100,000, while \$15,000,000 were received from the sale of other minerals, principally gold. R. W. Raymond, United States commissioner of mining statistics, thought Montana needed a separation of mine and furnace ownership, a market for lead, cheaper labor, and coal susceptible of being coked. The mineral law passed by Congress in 1866 also presented a problem. O. B. O'Bannan, United States land office registrar in Helena, said that of thirty-six applications for patents in Montana under the law, seven were contested, six withdrawn, and nine patents actually issued. Because proceedings for obtaining a patent were so tedious and expensive, most claim owners thought it better to depend

²⁸James Stuart to Hauser, October 31, 1868, Stuart Letterbook A, (Montana State University Library, Missoula, Montana). Hereafter cited as Stuart Letterbook A or B.

²⁹James Stuart to Hauser, November 12, 1868, *ibid.*

on claim rights alone rather than apply for a patent and risk a lawsuit.³⁰

The law in most mining districts during this period was a curious, complicated amalgamation of British, French, and Spanish mining laws and customs. With the discovery of gold in California in 1849, Americans faced the problem of national mining laws for the first time. Several statutes relating to mining had been passed by the federal government, but most pertained only to specific cases or minerals. Because no uniform body of statutes or common law for mining existed, the California miners organized districts, drew on their imperfect knowledge and impressions of what mineral law should be, and decided upon the laws of the district. In spite of a rather feeble attempt in 1866 to standardize mining law, a determination of the law applying to any particular mining district prior to 1872 depended upon crude--yet somehow workable--laws written by the miners. The federal act of 1872 did set forth a national mining law, and this act remains the major mineral statute to this day.

In the annual report for 1868 the St. Louis and Montana Mining Company said that 15,560 shares of common stock at par value of \$100 each had been issued in addition to 1,644 shares of preferred stock issued in September 1867 at \$35 per share. The latter were redeemable in December, 1868 at \$80 per share. In view of the generous appreciation of value promised on the preferred stock. it is assumed that this

³⁰R. W. Raymond, The Mines of the West (New York: J. B. Ford & Co., 1869), pp. 150-55. For definitions of mining terms, see Appendix D, p. 88.

issue was intended only for sale to common stockholders, although no indication of intent is discernible from the data. The company had raised a total of \$287,000 from stock sales--\$60,000 of which came from the sale of preferred stock--in addition to \$65,000 received from the sale of bullion. Of total funds raised, \$130,000 were lost on operations at Montana City and the property there was worth only \$5,000. Company holdings at Philipsburg were valued at some \$147,000, but debts against these holdings amounted to \$73,000.

The board of directors decided to sell \$100,000 in bonds bearing ten per cent interest and payable in eighteen months.³¹ The bonds, which were later purchased chiefly by stockholders, were sold at eighty cents on the dollar as a further inducement. In view of the company's earlier financial difficulties, the discount was probably necessary. Indeed, the choice of bonds itself is perhaps indicative of the measures necessary to raise more money. Why bonds? Presumably these men were astute enough to realize that prices were falling during this period and the bonds would be paid in dollars worth more at the time of redemption than at the time of sale. Bonds sold only to stockholders with generous interest plus an appreciated dollar value, would reward the men willing to dig a bit deeper for the common interest. The \$80,000 raised from this sale of bonds was considered sufficient to cover indebtedness of the company and provide operating funds for six

³¹During this period, bond sales were a common device used to raise more money and sometimes to "freeze out" minority stockholders. There is no evidence to indicate that this particular sale was intended to "freeze out" small stockholders. The generous interest rate was probably necessary because of the risks involved in a mining venture which had failed once.

months. Other recommendations, all of which were accepted, included reducing all expenses not absolutely necessary, leaving the mill idle until a stockpile of ore was accumulated, leasing the Montana City works, and appointing an assistant secretary for Montana to report directly to the board.³²

L. C. Garnier replaced Gaty as president, and operations were resumed in Montana with six men employed mining ore. James Stuart continued as superintendent in Montana. Although some ore was recovered, the results did not warrant starting the mill, and he suggested that the mill remain closed until April when shipments could be made via the Missouri River.³³

In March, 1869, all work at Philipsburg was suspended. The company had ordered James Stuart not to operate at a loss and by May, only he and one other man were employed. There were enough supplies on hand for nearly a year, but the lure of placer mining had raised wages to \$4 or \$5 per day. Stuart suggested that the mill be closed until winter when miners could be obtained for \$50 to \$60 a month. With the mill and mine closed, Philipsburg was almost deserted.³⁴

The mill remained closed during the summer of 1869, and in August the directors considered leasing it to William Purvine. The

³²Report to the Stockholders of the St. Louis and Montana Mining Company Submitted at Their Adjourned Meeting Held January 2, 1869 (St. Louis: Dispatch Book and Job Office, 1869).

³³James Stuart to L. C. Garnier, January 27, February 6, 1869, Stuart Letterbook A.

³⁴James Stuart to Charles Taussig, May 30, 1869, *ibid.*

lessee was to take all supplies, wood and material on hand at current market value in Montana. New machinery could be installed, but the company reserved the right to purchase the machinery later at its actual cost. In September, Purvine leased the mill for a reported sum of \$20,000 a year.³⁵

Meanwhile the company's property at Montana City had been seized for debts, and a representative was sent to that place to pay the debts and lease the works with the stipulation that ore owned by the company would be processed. Active operations by the St. Louis and Montana Mining Company at Montana City ceased.³⁶

Mineral production in Montana declined during 1869. Raymond observed that no fixed process for milling ore at the James Stuart mill had been developed, with the amount of salt and type of chemicals constantly being varied in an attempt to discover the best method of recovering silver. The mill was idle awaiting repairs.³⁷ Certainly the company had made no profit during the year.

Nor was Purvine making a profit doing custom milling, and James Stuart thought the company would certainly fail early in 1870.³⁸ The mill ran intermittently during the year, and when Purvine's lease

³⁵Charles Taussig to Hauser, August 11 and September 21, 1869, Hauser Papers. The Helena Herald, October 7, 1869, p. 8.

³⁶S. W. Barber to Hauser, October 14, 1869, Hauser Papers. James Stuart to F. Kennett, November 5, 1869, Stuart Letterbook A.

³⁷R. W. Raymond, Statistics of Mines and Mining (Washington: Government Printing Office, 1870), pp. 7, 254, 276.

³⁸James Stuart to Hauser, March 5, 1870, Stuart Letterbook A.

expired, the company replaced James Stuart with a "Captain" George Plaisted, formerly of the Cable mine. The mill was started on Hope lode ore and the company attempted to procure custom work at \$25 per ton.³⁹

Early in 1871 the mill was closed once more. Plaisted and a man named Waterbury sought to lease the property, but the offer was probably turned down.⁴⁰ All activity ceased. Although a small profit may have been made by leasing the mill during 1870, a loss was no doubt incurred during 1871.

Early in 1872 the mill process was changed as far as practicable to dry crushing, with furnaces and a drying kiln constructed by lessees. Ores processed during the year were principally from the Spreckled Trout mine--not owned by the company--with small quantities yielding \$125 to \$190 per ton shipped to Reno, Nevada.⁴¹ The Helena Herald said about 150 men were employed in Philipsburg during the year, indicating that overall mining activity was comparable to 1867. Although costs of working ore were said to have been twice what they should be--the reasons were not stated--the operation was described as profitable.⁴² Montana's mineral production dropped sharply in

³⁹The Rocky Mountain Daily Gazette (Helena, Montana), March 16, 1870, p. 2. The Helena Herald (Helena, Montana), December 6, 1870, p. 3.

⁴⁰Dance to Hauser, February 24, F. Kennett to Hauser, May 1, and J. H. Brown to Hauser, August 31, 1871, Hauser Papers.

⁴¹R. W. Raymond, Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains (Washington: Government Printing Office, 1873), p. 3.

⁴²The Helena Herald, August 1, 1872, p. 6.

1872, perhaps this drop indicated that the territory was in a transitional stage between simple placer mining for gold and the more sophisticated mining methods that followed.

During the year, Felix McArdle came to Montana to inspect the work done. He reported that ore taken from the Comanche lode was too poor to show a profit, and although \$25,000 had been expended on the Hope lode, the work was haphazard at best, resulting in no improvement. The company had achieved a gross profit of \$114,000 from crushing 952 tons of ore in 170 days of operation by the mill. After expenses of about \$64,000 were paid, a net profit of some \$50,000 remained. McArdle concluded that an expansion of the mill to handle more ore was the remedy needed. He estimated the ore at \$25 per ton assay value, but because the present mill could extract only seventy per cent, expenses for milling were three dollars more than the recovery value of about \$17.50 in silver bullion per ton of ore. In order to reduce milling costs, McArdle recommended a \$16,000 expansion of the mill. He also urged the procurement of suitable equipment for prospecting, the mining of at least a thousand tons of ore before the mill was started, the shipment of Montana City ores to Philipsburg for processing, and erecting a mill at Montana City if necessary. Total cost was estimated at \$201,000.

McArdle said it was impossible to pay holders of the first mortgage bonds. To refinance the venture, he suggested the creation of a new corporation called the Hope Mining Company with capital stock of \$400,000 divided into 8,000 shares with par value of \$50. For each \$50 in cash received, \$100 in stock should be issued. The

holders of the first mortgage bonds would receive two dollars of stock in the new company for each one dollar in bonds held, plus interest to September, 1872.⁴³

The company decided to reorganize. A meeting of the first mortgage bond holders determined that it was impossible to pay the bonds which were due. To purchase the property of the St. Louis and Montana Mining Company, the bondholders organized a new corporation.⁴⁴ The creditors then foreclosed and sold the company property. In January, 1873, a notice of public sale of the entire holdings appeared in the Rocky Mountain Daily Gazette. The company had failed.⁴⁵

Reasons for the failure are not hard to find. Silver mining was a new industry in the United States; the first great strikes were made in Nevada in 1859. Processing methods were poor, as indicated by the 40 per cent recovery rate when the James Stuart mill first opened. Silver occurred in a variety of formations, each one requiring a precise processing, and the failure of the St. Louis and Montana Mining Company was partially due to crude processing techniques.

A second reason for failure was the lack of knowledge concerning the lodes or veins worked. The company applied no technique except

⁴³Report to the Holders of the First Mortgage Bonds of the St. Louis and Montana Mining Company (St. Louis: St. Louis Dispatch Print, 1872).

⁴⁴Gaty to the Bondholders, in Hope Mining Company Papers (Montana State Historical Society Library, Helena, Montana). Cited hereafter as Hope Papers.

⁴⁵The Rocky Mountain Daily Gazette (Helena, Montana), January 21, 1873, p. 2.

digging to explore ore bodies, and as a result a great deal of money was spent locating new ore which even then could not be systematically exploited because the extent of the strike was unknown.

The geographical location also made mining in Montana a high cost operation. Transport of supplies and ore cost \$20 per ton by wagon to Ft. Benton, \$20 from Ft. Benton to St. Louis by steamboat, and \$10 to \$15 from St. Louis to the seaboard. Overseas shipment of ore for processing cost an additional \$15 per ton.⁴⁶ Total transport of ore, if shipped to foreign processing plants, cost \$65 to \$70 per ton--more than most ore mined by the company was worth. New machinery freighted from the railhead at Corrine, Utah, cost \$35 per ton, with quicksilver from California, and salt from Idaho subject to equally high rates.

Add to these costs the high wages of laborers lured to prospecting and placer mining each summer, the optimum period for mining and milling, delays in receiving needed supplies and repairs, difficult communication with the home office, inexperienced management, poor processing techniques, and one does not wonder that the company failed. The wonder is rather that the investors wanted to reorganize a new company to continue mining after 1872.

The question naturally arises--was this company beneficial or detrimental to Montana? The answer is, beneficial with some qualifications. Although a large amount of money was spent at Montana City,

⁴⁶The Helena Herald, November 1, 1871, p. 2. R. W. Raymond, Mines of the West, pp. 141, 152. The Rocky Mountain Daily Gazette, June 14, 1870, p. 2.

the territory received little or no lasting benefit from the operation. Conversely, the Philipsburg operation created a new population center in the territory and provided at least a rudimentary economic basis for agriculture, trade and transportation. In a period characterized by wild rushes from gold field to gold field, Philipsburg probably exerted some measure of stabilization on the territory. A good deal of skill was also introduced into the territory by men such as Deidesheimer, Steitz and Swallow. And, finally, the company employed at least a small labor force for seven years. As yet, very little mineral wealth had been extracted from the territory. On the debit side, it was not to be denied that silver ore had been extracted, and the early loss of control by Montana investors was not a good omen. Still, at least to this time, Montana probably was a benefactor.

CHAPTER II

A NEW COMPANY BEGINS, 1872-80

In November, 1872, the Missouri Petroleum and Mining Company, by authority granted in its corporate charter, created 8,000 shares of special stock worth \$400,000. This stock was disposed of and the buyers became a separate corporation, known as the Hope Mining Company. Felix McArdle, president of the Missouri Petroleum and Mining Company, became secretary of the new organization, while Charles Whittelsey exchanged the job of secretary in the parent organization for that of president in the new company.¹

With one failure behind them, the St. Louis capitalists decided to retain firm control of the Hope Company. Not one of the Montana men associated with the St. Louis and Montana Mining Company appeared on the list of thirteen directors. While the men who originally supplied the impetus for the venture and exercised some control retained an interest, St. Louis dominated the company completely from this time forward.

Felix McArdle, who had earlier inspected the company and recommended the reorganization, returned to Montana to take personal charge of the enterprise. Until the middle of 1874, the company was concerned chiefly with putting its business affairs in order. To save

¹Montana, Secretary of State. Copy Book A, p. 151.

money on patenting expenses, an agreement was reached between the corporation and Montana claim owners whereby the company patented claims to eight lodes. Thus one patent and one fee covered each claim. After the claims were patented, portions of the Wabus, Horton, Robert Burns and W. B. Dance lodes were deeded back to Dance while undivided interests in the Hope, Cliff, Lady Byron, and Comanche lodes were deeded jointly to W. B. Dance, S. T. Hauser, Granville Stuart, Thomas Stuart and Rezin Anderson. Granville and Thomas Stuart had become heirs to the interest James Stuart had owned following his death at Ft. Peck, Montana in 1873.²

With this accomplished, the company prepared to begin operations. B. P. Tilden became superintendent upon the death of McArdle in the summer of 1874, and activity was renewed in August after a long period of idleness. A year after the panic of 1873, the managers probably hoped for an early recovery. The enterprise started slowly, and after an erratic summer operation which was probably not very profitable, activity was stepped up slightly in October.³

Information concerning the company in 1875 is scanty, but in April Tilden said the mines looked excellent, and work increased in June. With typical forced hopefulness, the New Northwest proclaimed that Tilden was "prosecuting work as directed by the company with every indication that it will continue to abundant success...."⁴

²Granville Stuart to Felix McArdle, December 19, 1873, Stuart Letterbook A.

³The New Northwest (Deer Lodge, Montana), August 27, August 22, October 24, October 31, 1874, pp. 3, 3, 3, 3.

⁴Ibid., June 11, August 27, 1875, pp. 3, 3.

During the latter months of 1875 and January 1876, some improvements were made at the mill while work continued at the mine. Although Tilden reported that the mine and mill were again operating smoothly, 1876 was a mediocre year at best. The company shipped only \$30,000 in bullion during the year, according to newspaper reports. These shipments indicated operations were marginal with little or no profit gained.⁵

By early 1877, Granville Stuart, hard pressed for funds, complained to Hauser that the company was delaying the patenting of property in order to steal the claims of Montana owners, and stressed that no dividends had been paid.⁶ The accusations were probably unjust. Certainly the company was in no position to pay dividends, because in April, Ringeling brought \$9,000 in bullion to Philipsburg, converted it to cash, and returned to pay the employees. A telegram had been received instructing him to "stop all work in mines and mill; discharge and pay off the men."⁷ The accusation concerning property is not substantiated by any other evidence; Stuart was guessing. A lack of sufficient ore probably occasioned the closure, but by September the mill was running again on low grade ore while exploration at the mines continued. This exploration evidently was rewarded, and during the last three months of 1877 silver bullion worth \$56,000 was shipped,

⁵Ibid., January 7, April 14, August 11, September 8, December 8, 1876, pp. 3, 3, 3, 3, 3.

⁶Telegram of G. Stuart to Hauser, March 30, 1877, Stuart Letterbook A.

⁷The New Northwest, April 13, 1877, p. 3.

according to the New Northwest. This amount, plus \$10,000 in bullion reportedly shipped earlier, would indicate a gross income of some \$66,000 for the year. The newspapers, especially those of small towns, were sometimes overly optimistic, however, and it seems likely that the amount grossed was somewhat less than the total reported in the New Northwest. The company probably made little or no profit overall. David Carson, who became superintendent during the year, may have been partially responsible for the rather good showing for the last quarter of the year.⁸

The deposit was worked out by early 1878, and in June the mill was idle once more. Although the New Northwest proclaimed that a rich body of ore had been found, a constant cry in the western mining camps, the mill was not started until December and even then the operations consisted of reworking tailings. In an attempt to determine if any profits could be made by reworking mill wastes, the company used vanners. A vanner was essentially a wide rubber belt running over pulleys with a side shake. A stream of water, flowing down the belt, washed light minerals away from heavier ones, in effect mechanized placer mining. Bullion valued at \$27,000 was shipped in 1878, less than half the amount shipped the year before. If the New Northwest was not overly optimistic in calculating the value of ore milled during the year, the mill processed only about 400 tons.⁹ It would be difficult

⁸Ibid., September 7, October 19, November 16, December 21, January 19, 1877, pp. 3, 3, 3, 3, 3.

⁹Ibid., June 7, December 13, February 22, 1878, pp. 3, 3, 3. Total bullion shipped of \$27,000 divided by \$70 per ton value indicates 385.7 tons milled. This figure was rounded to 400 tons.

to show even a modest profit from this scale of operations, and although no definite conclusions can be drawn from these incomplete data, it is possible that the company again lost money. But the Bland-Allison Act was passed in 1878, and at the year's end the outlook for silver had improved. In addition to increasing the demand for silver, this act made silver certificates, backed by a set amount of the white metal, equal in value to gold certificates even though the latter metal was more valuable.

The following year was not profitable even though the outlook for silver had improved. During the early months of 1879 the vanners continued to work while extensive prospecting was carried on at the mine. The reworking of tailings was unprofitable, however, and superintendent Clark decided the tailings should be reprocessed by the mill instead. A contemplated change from wet to dry crushing was apparently discarded with the discovery of a new deposit late in the year. This new ore from the Cliff claim, together with normal wear on machinery, was probably responsible for improvements in the form of new settlers and pans installed in October. Even though the mill ran on tailings for several months and an ore strike on the Cliff claim was reported, no shipments of bullion were reported, the lack of shipments suggesting that the company incurred a loss for the year's operation. Positive gains were made in the form of better knowledge of the ore bodies, improvements in the mill, and a better knowledge of milling techniques.¹⁰

¹⁰Ibid., April 4, May 9, June 6, October 24, 1879, pp. 4, 3, 3, 3.

Some perspective regarding the financial condition of the company at this time may be gained from the letters of Granville Stuart. Early in 1879, he said that although he had offered to sell his stock at 40 per cent of face value, no one would purchase it. Late that same year, however, he wanted to buy stock belonging to the W. B. Dance estate at 30 per cent, and finally bought the stock at about 37 per cent of face value.¹¹ Stock in the Hope Company was apparently worth nearly 40 per cent of its face value in spite of five years' operations which are best characterized as marginal. This is rather remarkable, considering the violent fluctuations in many mining stocks, and is perhaps something of a testimonial to the stability associated with the St. Louis investors. In addition, the company possessed a very good mill, several promising claims, and a demonstrated ability to sustain operations over a period of some thirteen years, a considerable achievement compared with the short lives of many mining companies of the period.

The following year is almost lost in obscurity. Only one mention of the company was made by the New Northwest, in February of 1880, and this was a report that the mill was running steadily on Hope ore.¹² The Montana owners tried to sell their interest in the Hope claim lode, but apparently failed.¹³ At the time, partial interest in the Hope

¹¹G. Stuart to George W. Irvin, between January 27 and March 10, and October 10, 1879, Stuart Letterbook A.

¹²The New Northwest, February 13, 1880, p. 3.

¹³G. Stuart to Anderson and T. Stuart, February 19, 1880, Stuart Letterbook. Copy. (Microfilm copy in Montana State Historical Society Library, Helena, Montana). Cited hereafter as Stuart Microfilm.

claim was owned jointly by Hauser, Granville Stuart, Thomas Stuart, and Rezin Anderson. It is not possible to judge whether the company made a profit or incurred a loss in 1880, and at the end of the year. only two mines were operating at Philipsburg--the Algonquin and Hope.

Philipsburg's population had increased from 59 to 299 during the period 1870 to 1880, and the Hope Company was the only mining venture in the area which has spanned the decade and was still in active operation.¹⁴ After the reorganization in 1872, the company spent most of the time up to 1880 attempting to unearth a body of ore that would provide a steady supply for the mill, and following two years of marginal operations, the ore ran out in 1877. A new supply was found later that year, but by 1878 this deposit was also depleted. While exploration went on, the company attempted to recover silver from the tailings by working them with vanners, but the operation was not profitable and had to be abandoned. Ore uncovered in the Cliff lode during 1879 probably was exhausted during that or the following year. The period was only moderately successful for the Hope Company, with the years 1875 to 1877 the best of a rather poor lot.

In 1877 the company was made aware of the fact that bullion actually on the property at the time of the territorial property assessment was taxable as real property. The Montana superintendent was apparently ignorant of this application of the revenue act of 1872 when he advised Gaty that the sheriff and county assessor had appeared

¹⁴Albert Blumenthal, Small Town Stuff (Chicago: University of Chicago Press, 1932), p. 23.

to seize the property for sale to pay "what they call taxes on bullion."¹⁵ Swiftly the property was impounded on March 21, 1877 and advertised for sale on March 28.¹⁶ The case was contested, albeit weakly, by the company, and the court held that bullion was taxable as property under the revenue act of 1872. Thus the principle was established that in addition to a one per cent tax on bullion passed in 1866, mining companies were subject to property tax on the bullion held at the time of the territorial tax assessment.¹⁷

¹⁵O'Bannon to Gaty, March 21, 1877, Hauser Papers.

¹⁶Ibid.

¹⁷Hope Mining Co., v. Kennon, 3 Montana 35 (1880).

CHAPTER III

THE THRESHOLD OF SUCCESS, 1881-83

Operations appear to have been quite successful during 1881, with both mine and mill working steadily for most of the year although only one shipment of ore was recorded in the New Northwest (\$20,000 in April).¹ One source claimed that during 1881 a rich body of ore was discovered which yielded about \$360,000.² If the report is true, 1881 may have been the best year up to this time.

The body of ore discovered at the Cliff lode was exhausted by mid-1881 and exploratory work was once more under way in September. In October the mill closed for repairs but soon reopened. A major development of the year was the beginning of the Jubilee tunnel, which became the major means of exploiting the mine.³ In addition to yielding information regarding the ore body, this tunnel eliminated the need to work through a shaft, with attendant savings in time and hoisting equipment. Hauser, acting for the Montana owners, concluded a three-year agreement with the company under which the portions of certain

¹The New Northwest, April 29, 1881, p. 3.

²W. H. Emmons and F. C. Calkins, Geology and Ore Deposits of the Philipsburg Quadrangle Montana, U. S. Geological Survey Professional Paper No. 78 (Washington: U. S. Government Printing Office, 1913), p. 213.

³The New Northwest, September 9, October 7, October 28, November 25, 1881, pp. 3, 3, 3, 3.

lodes not owned by the corporation would be worked, seventeen dollars per ton deducted to cover costs, and the remaining profits divided between the Hope Company and the Montana joint owners.⁴ Later, this agreement caused a great deal of trouble for both contracting parties. While information is very scarce, it is possible that a profit was made during 1881.

In 1882 the Granite Mountain Mining Company was organized by St. Louis interests.⁵ Because no list of the stockholders is available, the precise relationship between this organization and the Hope Company is not clear, but some degree of association--effected through an interlocking directorate and Frank L. Perkins, a superintendent of the Hope Company--did exist.

An indication of the relationship is revealed in a letter from Perkins to the First National Bank of Helena with instructions concerning the handling of "our accounts," meaning the accounts of the Hope and Granite Mountain companies. Perkins also told the bank that when signing checks for the Hope Company he signed as superintendent, while he signed Granite Mountain Mining Company checks as "in charge."⁶ The bank was apparently having some difficulty in keeping the accounts separate. It is also interesting to note that the Granite Mountain Mining Company paid Perkins' salary during July, August, October, November, and December of 1882, while he was conducting business for

⁴Hauser to Gaty, July 1, 1881, Hauser Papers.

⁵Montana, Secretary of State. Copy Book H, p. 729.

⁶F. L. Perkins to E. W. Knight, July 14 and July 3, 1882, Hope Papers.

the Hope Company during the same period.⁷

The Hope Company probably had one of its more successful years in 1882. The New Northwest said in April that the mill had been running steadily since the beginning of the year, and further expansion increased the number of stamps to twenty at the mill.⁸ Montana expenses were \$7,200, \$9,600, \$7,900, and \$10,000 for January, March, April, and August, respectively--a scale of operations that would probably not have been maintained unless profitable.⁹

The Montana joint owners of land leased to the Company became concerned about non-receipt of royalty payments during the year, and they engaged Charles Clark--former superintendent of the Hope Company--to approach the corporation about this matter.¹⁰ Apparently because the Company still did not act, George W. Irvin proposed to Hauser that they litigate their claims, saying that a jury in Deer Lodge would be disposed to favor them over the Hope Company.¹¹ Although the case could possibly have been carried to the United States Supreme Court on a plea of diverse citizenship of the parties, mining companies of the

⁷Statement of Cash Account, July 21 and August 23, 1882, in Granite Mountain Mining Company Papers (Montana State Historical Society Library, Helena, Montana). Cited hereafter as Granite Papers. Perkins to Knight, August 2, October 25, November 22, December 26, 1882, Hope Papers.

⁸The New Northwest, April 14, 1882, p. 2.

⁹Perkins to Gaty, January (?), March 10, April 12, August 2, 1882, Hope Papers.

¹⁰Perkins to Gaty, June 18, 1882, *ibid.*

¹¹Irvin to Hauser, July 12, 1882, Hauser Papers.

period incurred enough expensive litigation without seeking disputes, and the Company belatedly issued a statement to the Montana joint owners showing that 290 tons of ore with an assay value of 7,380 ounces of silver had been mined from the leased portion of the Hope lode during November through December, 1881, and January, 1882.¹² The statement was issued in August, 1882, even though Gaty had written Hauser a month earlier that no good ore had been found.¹³ While Gaty may not have known how much ore had been mined when he penned the letter, it appears quite unlikely that the information was unavailable in St. Louis. Payment of the royalties was even later in coming. Not until January, 1886, did the joint owners receive \$2,600 for mining operations conducted from 1881 to 1883, and the payment was extracted from the company only after a good deal of bickering.¹⁴

By early 1883 the ore "played out" once more, and, with the mill under repair, an old mine was explored for paying deposits. In May a systematic search for ore began with a diamond drill--the first such machine used in Montana. With the new device, test holes were drilled in a systematic pattern to determine the location, extent, and depth of ore bodies. This was a great improvement over the previous method of digging tunnels and shafts by hand with no real knowledge of the geological formations. The drill also permitted systematic exploitation of a strike after the ore was discovered. In June the mill

¹²Statement of Ore Extracted and Milled from Ground Leased from Messrs. Hauser, et al, August 1, 1882, Hope Papers.

¹³Gaty to Hauser, July 25, 1882, Hauser Papers.

¹⁴Receipt, January, 1886, *ibid.*

was operating again with diamond drill exploration continuing.¹⁵

The opening of the Northern Pacific Railroad--at Drummond, some 26 miles north of Philipsburg--was a major event of 1883. Some appreciation of the impact the railway had on transportation costs is shown in the reduction of the price of salt (used in the chloridation process at the mill) from \$55 to \$25 a ton delivered at Drummond. Although transportation costs remained a problem, the opening of the railroad to Drummond greatly improved access to the mines.

While the company's profits may not have been large during 1883, the introduction of an efficient and systematic method of exploration was a large step forward and allowed the company to begin a period of greater prosperity. The "free silver" boom had begun and prospects for silver mining were considerably improved. After the passage of the Bland-Allison act, it appeared that legislation favorable to silver would continue to help hold up prices through large government purchases. As long as the government was willing to purchase a set number of ounces of silver at a fixed price, silver prices could hardly decline. And with a number of territories, all in the West, to be admitted to the Union, the strength of the silver advocates would probably increase.

¹⁵The New Northwest, May 25, July 13, 1883, pp. 3, 2. For a description of a diamond drill, see Robert J. Lewis, Elements of Mining (2d ed; New York: John Wiley & Sons, Inc., 1941), pp. 125-31.

CHAPTER IV

SUCCESSFUL YEARS, 1884-94

The period 1884 through 1894 was perhaps the most prosperous of the entire life of the Hope Company. With the use of the diamond drill for exploration, the supply of ore became less of a problem than it had been. The two years of largest production were 1892 and 1893, and although silver prices declined after 1890, the company showed a handsome profit. The panic of 1893, the repeal of the Sherman Silver Purchase Act, and the effects of greatly increased world production of silver contributed to a sharp drop in silver prices. The company responded by curtailing mining in 1894, and from that time forward activity gradually decreased until all operations were finally abandoned at Philipsburg.

The large sum of money spent on development in 1891--possibly in a frantic search for ore after the Sherman Act of 1890--led to the two most prosperous years, 1892 and 1893. In its best year (1892) the company produced over 400,000 ounces of silver, grossed \$381,000, paid \$50,000 in dividends, and established a reserve fund of \$100,000. The period 1884 through 1888 was also successful, with the company probably averaging about \$50,000 per year in dividends. The worst year was 1890, when the company lost \$24,000, but the era was one of prosperity for silver mining and for Philipsburg. Philipsburg's population grew from 299 in 1880 to 1,058 in 1890 and Granite, a sister town, had an

even larger population--1,310 in 1890.¹ During 1884 to 1894, the Philipsburg area was known as one of the largest silver producing areas in the world, a title it lost in 1894 and never regained.

The Hope mill (formerly James Stuart mill) operated for a total of 188 days in 1884 crushing about 4,500 tons of ore at a cost of about nine dollars per ton. This cost of milling is quite high compared with later years--probably because of the low content of silver and the complex nature of the ore--but much lower than the \$25 a ton cost in the 1860's. Silver commanded a good price, however, and the company disbursed more than \$56,000 in dividends during the year. The ore found in the Hope, Comanche, and Emma mines was exhausted and further exploration failed to uncover new ore except on the Potosi claim. As a result, the company again passed tailings through the mill when it would otherwise have been idle.² Frank L. Perkins resigned as superintendent of the Hope Company to become superintendent of the Granite Mountain Mining Company, his employer since July, 1884, and was replaced by George H. Babcock.³

In 1885, the mill pounded away for 295 days crushing about 8,200 tons of ore which Babcock described as poorer than ever. This poor quality resulted in a large amount of ore being milled at high cost and may have induced the company to install a new boiler at the mill which saved twenty cords of wood per week. A deposit discovered by

¹Blumenthal, op.cit., p. 23.

²The New Northwest, March 21, 1884, p. 3.

³Perkins to Hope Company, November 28, 1884, Granite Papers.

the diamond drill looked promising enough to begin sinking a shaft 225 feet deep, the deepest on Hope Hill.⁴

A number of monthly "estimates of funds" appeared during 1885. It seems that most business functions of the company were performed in St. Louis, with receipts from bullion sales deposited in the Hope Company account in a St. Louis bank. The Montana office submitted a monthly estimate of funds required for mining and milling operations. After the St. Louis office had transferred the money to the First National Bank of Helena in Montana--a bank owned by Hauser--the Montana office at Philipsburg drew on the Helena bank for operating funds. Montana expenses for the year varied from \$8,000 to \$9,600 per month, averaging about \$8,700.⁵ At \$8,700 a month, these data indicate about \$104,000 as Montana expenses for the year. All expenses were not included in this estimate, however. To this figure was probably added the cost of supplies purchased in St. Louis for mining operations, raising the total of local expenses to \$117,000, as shown in the annual report. A second explanation for the discrepancy between the estimated and reported total is that the fiscal year did not coincide with the calendar year.

Operations for 1885 were probably not very successful, and by early November the mill stood idle with the labor force cut to six men. It is not surprising that during poorer periods the Company reduced

⁴Babcock to Hope Company, undated (October, 1885?), Hope Papers.

⁵Estimates for Funds, January, February, March, May, June, July, August, October, November, December, 1885, Hope Papers.

the labor force as a first step toward economy. During 1885, wages constituted about 68 per cent of total Montana costs. Haulage of quartz and wood to the mill made up sixteen per cent, and supplies accounted for about eight per cent of Montana expenses. With a reduced labor force, the Company began to sink the Potosi Shaft No. 2 in December searching for ore.⁶

Ore, which the New Northwest proclaimed was "of excellent quality and abundant quantity," was struck in the Potosi Shaft No. 2 in January, 1886, but the newspaper's sanguine statement was not borne out.⁷ In the same month that ore was discovered, the mill closed down once more.⁸ With the ore body worked out, levels were driven out from the shaft in the following months and enough new ore was uncovered to keep the mill in almost steady operation for the rest of the year. Ore quality was poor, however, averaging only 17.3 ounces per ton recovered at the mill and expenses were high--\$10,000 for the new shaft and hoist and \$56,000 for running levels and drifts. From this activity, the Company lost about \$17,000 for the year. Estimated expenses were \$130,000 balanced against \$114,000 received from bullion sales.⁹

Possibly because of the poor year preceding, W. W. Adams was appointed to succeed Babcock as Montana superintendent in 1887. Ore in the Potosi No. 2 shaft dwindled and attention turned toward the Silver Chief claim--located at Tower, a small settlement about one and

⁶Ibid. Babcock to Taussig, November 3, 1885, Hope Papers.

⁷The New Northwest, January 8, 1886, p. 3.

⁸Babcock to Taussig, January 31, 1886, Hope Papers.

⁹The New Northwest, February 18, December 10, 1886, pp. 3, 3.

one-half miles east of Philipsburg. This claim had been purchased by the company, worked for a time, and then abandoned. A new shaft was dug on the Silver Chief, from which most of the ore was obtained during the year. The deposit discovered on this claim was not high in quality, running about 26 ounces per ton, and a good deal of work was expended in driving tunnels through barren ground, keeping expenses high. To remedy poor results, the Company again administered the medicine of a new foreman, and Ballard gave way to L. Merrill.¹⁰ The foreman, or superintendent, occupied a precarious position, with tenure apparently dependent upon results alone regardless of actual ability, and failure to show a profit occasioned a quick response by the directorate. In fairness to the corporation management, however, mining enterprises of the period were billed as a sure way to quick riches, and a year with no dividends often stirred the wrath of the stockholders who quickly clamored for returns on their investments.

The company mined and milled more than 10,000 tons of ore in 1887, probably the largest amount processed in any one year during the history of the venture. A gross income of about \$260,000 was received at a cost of about \$175,000, leaving a net profit of some \$85,000. From this profit a scant \$2,000 were paid in dividends with the remainder probably used to cover losses during the previous years and a portion carried in reserve for future use.¹¹ Philipsburg was prosperous, and the Northern Pacific Railroad extended a branch line to the

¹⁰Ibid., May 5, June 16, July 14, September 29, December 1, 1887, pp. 4, 1, 4, 4, 4.

¹¹Annual Report for 1887, Hope Papers. In 1887 new articles of incorporation increased the capital stock to \$1,000,000. Montana, Secretary of State, Book D., p. 339.

thriving mining center.

During most of 1888 the Hope mill ran on ore from the Silver Chief, but by May the supply was apparently approaching exhaustion, and exploration began on the Lady Byron claim. Prospecting also commenced on the Field and Check lodes, and a month later new deposits were found in the Silver Chief which were apparently of a nature which could best be reduced by smelting.¹² In addition to running the mill, the company made use of the new railroad facilities, and in four months 213 tons of ore averaging more than 80 ounces of silver per ton were shipped from the Silver Chief.¹³

The mill ran almost constantly during 1888, crushing about 8,500 tons of ore from which about \$157,000 were received at a cost of \$161,000. The company paid \$50,000 in dividends, it would seem, however, mainly from profits made in 1887.¹⁴ Although the year was poor from a financial standpoint, the Company had conducted extensive exploration and gained some better knowledge of the mineral deposits. The first union also appeared in 1888. In October the Granite Miners' Union was formed with a membership of 200 men and soon became the strongest organization in the community. The union had no known national affiliation, and after the panic of 1893, it performed indifferently, lingered until 1910, and quietly died because it could

¹²The Philipsburg Mail (Philipsburg, Montana), May 17, June 28, 1888, pp. 3, 1.

¹³Annual Report for 1888, Hope Papers.

¹⁴Ibid.

perform no necessary function during the long depression when unions were in a very poor position to make demands on management.¹⁵ Late in the year a discovery at the Porter lode, running 79 ounces per ton, was claimed, but the glimmer of precious metal existed mainly in a newspaper editor's eye.¹⁶

The mill operated only about half the time during 1889. It was closed down in May because of insufficient ore, operated for a short time in September, and then probably closed once more. Exploration work at the mine continued although the labor force was reduced by half in May, increased in September, and then reduced once more.¹⁷

The Company sustained a loss of about \$24,000 in 1889. When the deposits in the Silver Chief and Porter lodes ran out, a lack of sufficient ore--a chronic problem--plagued the Company again. A portion of Silver Chief ore was again shipped out for smelting, and although silver prices dropped slightly, they still averaged 93.5 cents per ounce--sufficient incentive to silver men. There is no evidence that the directorate responded to the admission of the sister states of North and South Dakota, Washington, and Montana in 1889 even though these states would add eight new senators and help shift the balance of power in the upper house of Congress.

Unfortunately, no annual report for 1890 is available, but with the admission of Idaho and Wyoming the directors must have realized

¹⁵Blumenthal, op. cit., p. 69. The Philipsburg Mail, October 4, 1888, p. 1.

¹⁶Ibid., December 13, 1888, p. 1.

¹⁷Ibid., May 9, September 19, 1889, pp. 1, 1.

that silver's political position was greatly enhanced. Because of the loss in the previous year, president John C. Porter discharged W. W. Adams as superintendent in February, and the following month several men were at work on the Jubilee tunnel under the new superintendent, N. B. Ringeling--who was appointed in April.¹⁸ Exploratory work probably continued during most of 1890, but the mill remained idle until December.¹⁹ The Company ran short of money during the year and Porter confided in Ringeling that "when the first of this month (December) came around we had no money. The banks were in such a condition that we did not like to offer our paper." As a temporary expedient, Porter drew on his private funds for some \$4,000 to meet the November payroll.²⁰ In December ore was being extracted from the Comanche claim with an enlarged labor force, while the Silver Chief was abandoned--the boiler and hoist removed from the shaft.²¹ A loss was probably sustained for the second consecutive year even though the Sherman Silver Purchase Act was pushed through Congress and silver rose to more than one dollar per ounce.

Silver prices were high, and with expectations that they could be held up with political support from the new Western states, the company began an intensified search for ore deposits in 1891--expending

¹⁸Ibid., March 27, 1890, p. 1. Cuno to Porter, February 18, 1890 and Cuno to Ringeling, April 16, 1890, Hope Papers.

¹⁹The Philipsburg Mail, December 4, 1890, p. 1.

²⁰Porter to Ringeling, December 23, 1890, Hope Papers.

²¹The Philipsburg Mail, December 11, 18, 1890, pp. 1, 1.

about \$25 per ton on mining and development compared with about six dollars in the two previous years. The search bore few immediate fruits, however, and with the ore discovered in the older working depleted, the mill paused in mid-January for repairs. A high grade deposit found in the Cuno shaft in February was not large enough to warrant starting the mill until a stockpile was assembled, and after a short run in April, the mill "hung up the stamps" the following month.²² The Company reduced the mining force and continued to prospect for ore. When this prospecting failed to uncover any additional supply, work was abandoned on the Cuno shaft and emphasis shifted to the Jubilee tunnel--steadily pushed into Hope hill.²³ With no new ore in sight, president Porter came to Montana in September to inspect the Company's operations, and as a result, the Silver Chief was permanently closed although prospecting continued on the Horton lode and in the Jubilee tunnel. In the interests of economy, Ringeling was instructed in December to cease operations on the Horton lode and discharge the miners except those working on the Jubilee tunnel.²⁴

The mill had operated 116 days during 1891, recovering about 80,000 ounces of silver that sold for about \$85,000. Costs ran \$83,000,

²²Stevens to Cuno, January 29, 1891 and Ringeling to Porter, February 9, 17, and April 6, 1891, Hope Papers.

²³The Philipsburg Mail, May 14, 1891, p. 1. Ringeling to Cuno, June 24, 1891 and Ringeling to Porter, June 29, 1891, Hope Papers.

²⁴The Philipsburg Mail, September 10, 1896, p. 1. Ringeling to Porter, October 20 and November 17, 1891, Hope Papers.

giving a modest profit of some \$2,000. From the limited ore deposits found and the milling of custom ore, the company made enough money to expand its holdings, defend the present holdings against several lawsuits, and continue work on the Jubilee tunnel--no mean achievements. Although milling costs had not increased sharply, the cost per ton mined was four times as great as during 1888 and 1889, reflecting expanded prospecting work.²⁵ Estimates for funds during 1891 indicate an average monthly requirement of about \$4,500 for Montana operations, labor accounting for more than eighty per cent of local costs probably because of the expanded explorations carried out.²⁶ This extensive prospecting, while costly at the time, proved more than worthwhile in the next two years.

The Company may have been tardy in paying the Montana joint owners who leased their claims to the corporation. At least these persons thought so, and in 1891 they began to press the Company for payments. By this time Byron Ballard, former superintendent of the Hope Company, had been employed by Granville Stuart to protect his interests. In August, Stuart warned Porter that a lawsuit would be instituted if the Company did not make a speedy and satisfactory settlement for ore taken from the leased ground. The Company responded with a statement that Stuart did not believe, and he bitterly called Porter the "cheekiest old robber" he had ever known. Stuart had been

²⁵ Annual Report for 1891, Hope Papers.

²⁶ Estimates for Funds, January, February, March, April, May, June, August, September, October, November, 1891, Hope Papers.

mustering forces for some time preparing an assault on the Company. A year previously he had written Tom Stuart that he was getting the "Hope matter" in shape and expected to "tap them heavily before very long," and he also offered James A. Murray of Butte one-half of any proceeds in exchange for free legal assistance. Murray apparently declined the offer, and Stuart retained William Scallon of Butte as his attorney. Stuart alleged that about 100,000 ounces of silver had been removed from the ground owned jointly by Montana men and leased to the Hope Company. With several other lawsuits threatening, the Company tried to mollify Stuart and gave him a statement of mining on the leased ground together with the expenses incurred. Rather than appeasing him, the statement convinced Stuart that the expenses were padded to include total Company costs, and the report spurred him to further action. Wilson and Gillie, a civil and mining engineer firm of Butte, surveyed the ground, and after ascertaining the legality of such action, Stuart seized the property leased to the Company, including the Cuno shaft.²⁷ Notices were posted that Stuart had possession of the ground as a representative of the Montana joint-owners, and armed guards were posted to prevent trespassers.²⁸

Stuart's belligerent act moved the Company to submit a detailed statement to him showing about \$1,700 due the Montana joint-owners.

²⁷G. Stuart to T. Stuart, February 20, 1890. G. Stuart to James A. Murray, March 9, 1890. G. Stuart to Porter, August 31, 1891. G. Stuart to Hauser, September 15, 1891. G. Stuart to Scallon, October 3, 1891, Stuart Letterbook B.

²⁸The Montana Mining Review, no. 37 (October 21, 1891), p. 12.

Upon a promise he would receive one-fourth of any money paid in the dispute and one-fifth of the ground each joint-owner possessed, Byron Ballard, a former superintendent for the Hope Company, acquired a vested interest in the controversy and joined the Stuart forces. With Ballard's intimate knowledge, the Wilson and Gillie survey, and his suspicions reinforced by an indiscreet remark by the Company superintendent that a good deal of ore had been removed from the leased ground, Stuart boldly reduced the Company's cost statement from about \$18,000 to about \$7,600. The Wilson and Gillie survey did support this reduction. Stuart's adjustments showed that about \$4,500 were due the Montana owners rather than \$1,700 offered by the Company and there the matter rested at the end of 1891.²⁹

In spite of a decline in silver prices, 1892 was the most successful year for the Hope Company because the exploration done in the Jubilee tunnel finally produced results. The mill stamps dropped a total of 256 days and crushed 6,286 tons of ore which produced more than 500,000 ounces of silver in 1892. This indicates nearly eighty ounces of the white metal recovered from each ton of ore crushed, and at an assumed recovery rate of about 85 per cent, the ore probably assayed more than ninety ounces per ton at the pit head--the richest ore yet found. After expenses of about \$160,000 were paid, the company declared dividends totaling \$50,000 and established a reserve fund of \$100,000 for future emergencies, with the remaining \$71,000 probably held in a working fund or used to repay outstanding indebtedness.³⁰

²⁹Stuart to Ballard, November 26, 1891, Stuart Letterbook B.

³⁰Annual Report for 1892, Hope Papers.

The Jubilee tunnel reached some 1,600 feet in length by the end of 1892, with mining activity conducted on a modest scale.³¹

In 1892 Granville Stuart also began mining operations on the Hope lode for himself and the other Montana joint-owners and during the period June through August realized a net profit of about \$500.³² Stuart's modest success, plus the rather ambiguous body of mineral law which made a mine operation vulnerable to legal attack, prompted A. A. McDonald to request a survey and underground examination of the Jubilee tunnel to determine if the Hope Company had transgressed on his holdings. McDonald owned the Garnet and Porter Extension lodes which apparently joined the Jubilee tunnel.³³ The matter died out after a time, and a compromise settlement of \$2,600 with the Montana joint-owners of leased ground ended a year of vexing legal battles for the Hope Company.³⁴ Most of the lawsuits involved ownership of claims, a development probably resulting from the complicated law of ownership and the brighter mining outlook after the passage of the Sherman Act of 1890.

By early 1893 silver prices were falling, and efforts during the year were directed chiefly toward the mining and reduction of ore

³¹Montana, Inspector of Mines. Fourth Annual Report (Helena, 1893), pp. 26-27.

³²Statement of Work on Hope Lode, September 22, 1892, Stuart Letterbook B.

³³Ringeling to Forbis and Forbis, June 14, 1892. Ringeling to Porter, July 17, 1892, Hope Papers.

³⁴G. Stuart to T. Stuart, May 22, 1892, Stuart Letterbook B.

uncovered in the Porter lode. By this time most of the ore found in the Jubilee tunnel had been taken out. The mill machinery worked for 202 days, crushed 5,530 tons of ore, produced 313,000 ounces of silver, and paid \$175,000 in dividends.³⁵ The election of Cleveland, known for his opposition to the Bland-Allison Act of 1878, did not bode well for the future of the white metal, however, and the failure of the Philadelphia and Reading Railroad on February 20 was an ominous sign. Astutely the directorate foresaw the impending storm and on February 23, more than two months before the National Cordage Company catalyzed the panic of 1893, Porter told Ringeling to market all bullion "as soon as possible" because of the "great anxiety concerning the future of silver."³⁶ The New Northwest said in June the stamps of the "old reliable" Hope were "hung up" although the same force was retained at the mine and the diamond drill was kept busy. Faithfully, the paper forecast that it would not be long before the mill was heard again.³⁷ By mid-year the Granite and Bi-Metallic Companies had failed; the Northern Pacific Railroad quickly followed. But the Hope Company, pausing only shortly in August, continued to operate with bullion being shipped in every month except one, and a carload of ore was sent to Tacoma, (Washington) for smelting, with disappointing results³⁸ At the close of 1893 the

³⁵Annual Report for 1893, Hope Papers.

³⁶Porter to Ringeling, February 23, 1893, Hope Papers.

³⁷The Philipsburg Mail, June 29, 1893, p. 1.

³⁸Tacoma Smelting and Refining Co. to John McIntyre, May 20, 1893. Bullion Shipped Record, Hope Papers.

Hope Company had absorbed the shock of the panic, with activity continued on a scale comparable to the previous prosperous year.³⁹ Indeed, with the sharp drop of prices, the Company added the Game Cock, W. C. Bryant, Kaiser, High Oar, Oara Cash, and West Hope lodes to its holdings, probably as a protection against further lawsuits.⁴⁰

How did the Hope Company survive the wave that engulfed the Granite Mountain and Bi-Metallic Mining Companies? All the reasons may never be fully known, but some are apparent.

The First Annual Report of Montana's Bureau of Agriculture, Labor, and Industry contained a table showing dividends paid by Montana mines. Data in the report concerning Hope Company dividends are not entirely accurate, but the total reported is generally correct, and it is reasonable to assume that data concerning total dividends shown for the Granite and Bi-Metallic Mining Companies are roughly correct.⁴¹

These data show dividends paid by the Bi-Metallic Company totaling 1.5 million dollars from 1890 through 1893 and 4.3 million dollars paid by the Granite Company during those same years. Both companies were operated on a much larger scale than the Hope Company, and their extensive mines and mills required large costs to keep open. With large dividends paid, it seems probable that these companies had only small reserve funds on hand and the general depression precluded the

³⁹ Montana, Inspector of Mines, Fifth Annual Report (Helena, 1893), p. 4.

⁴⁰ Montana, Inspector of Mines, Sixth Annual Report (Helena, 1894), p. 79.

⁴¹ Montana, Bureau of Agriculture, Labor, and Industry, First Annual Report (Helena, 1893), p. 287.

possibility of raising more money. Even with a drop in silver prices below the level necessary for a profit, the Hope Company could run a considerable time at modest cost while the vastly larger operations of the Bi-Metallic and Granite Companies could produce very large debts in a short time. And it is also possible that the Hope Company, over its longer history, had adjusted itself to the most economic size while the Granite and Bi-Metallic may have over extended their activities in the quest for quick profits.

While silver prices continued to fall in 1894, the mill pounded away steadily--crushing 7,029 tons of ore in 290 days--justifying Philipsburg's faith in its stability. The Company sold 312,000 ounces of silver for \$186,000, made an estimated \$41,000 net profit and paid \$75,000 in dividends in the depression year.⁴² This was accomplished either by shipping bullion produced in 1893, reducing the reserve fund, or both. With many men unemployed, labor cost declined and the Company seized on the opportunity by expanding the labor force almost 25 per cent.⁴³

While the Company did survive the panic, indeed seemed to fare quite well, the depression dealt a near fatal blow to silver mining as an industry in Montana and seriously damaged Hauser. John W. Hakola, Hauser's biographer, believes that the depression began Hauser's financial fall. With Hauser's extensive interests, any deterioration

⁴²Annual Report for 1894, Hope Papers.

⁴³Montana, Inspector of Mines, Sixth Annual Report (Helena, 1894), p. 79.

in his position must have created financial shock waves felt widely
in Montana.

CHAPTER V

ACTIVITY DECLINES, 1895-1900

The depression which continued to grip the nation in 1895 also began to affect Hope Company activity, although a lack of high quality ore aggravated the problem. Some 1,762 tons of ore were passed through the mill in 74 days, yielding 50,000 ounces of silver which were sold for some \$44,000, and the Company probably showed a net loss of nearly \$40,000 in 1895. Dividends amounting to \$10,000 were distributed, but this represented profits from the last quarter of 1894 and a reduction of the reserve fund to \$50,000.¹

The pace quickened again in 1896, probably influenced by hopes for a favorable election, as William Jennings Bryan--aided by "Silver Dick" Bland (of Missouri)--articulately championed the cause of free silver which, despite Bryan's able leadership, failed. The annual report for 1896 glumly stated that all operations during the year were conducted through the Jubilee tunnel, with most of the ore passed through not worth mining. Construction of a new hoist on a raise from the Jubilee tunnel to the surface began, however, and was completed several months later.²

Silver prices, which had inched upward in 1895, dipped downward

¹Annual Report for 1895. Hope Papers.

²Annual Report for 1896. *ibid.*

following the defeat of Bryan. The mill, almost as if it could not believe the results of the election, exerted itself for 250 days in 1896, oblivious to the fact that its days were numbered. Surprisingly, the Company fared quite well during the year, sold some 288,000 ounces of silver--retrieved from 6,265 tons of ore--for \$170,000, paid \$40,000 in dividends and increased the reserve fund to \$55,000. The year was profitable, but not many good years followed.³

Unfortunately, no annual report is available for 1897, but operations appear to have been comparable to those of the previous year, although slightly more bullion was shipped.⁴ Bullion shipments were made every month, and in spite of a large gross product, the declining price of silver made it quite possible that net profit was about equal to, or slightly less than, that of 1896. The Company paid at least four dividends totaling a modest \$3,200, and the Montana property was improved and expanded by the purchase in August of the Algonquin Company with water rights.⁵

Byron Ballard obstinately continued to mine in 1897 and provided some discomfiture for the company. In April, Porter instructed Ringeling "in confidence" to watch Ballard carefully and make sure he did "not manage in some way to look into our mine."⁶ Ballard had allied

³Annual Report for 1896, ibid.

⁴Bullion Shipped Record, ibid.

⁵Cuno to Ringeling, January 27, July 21, and August 18, 1897. Porter to Ringeling, May 19, 1897, ibid. Western Mining World (August 21, 1899), p. 447.

⁶Porter to Ringeling, April 24, 1897, Hope Papers. Underlining is shown as it appears in the original source.

himself with A. A. McDonald and was mining in the Cuno works at this time. McDonald was dissatisfied with the expenses of mining, however, and in the course of offering his share for sale to Ringeling, McDonald mentioned that the Hope Company was so close to his ground that the drills could be heard turning. Ringeling put a door on the 230 foot level in the Cuno works, probably to quiet the sound, and Ballard, angered by the door, began to dig even harder. A short time later Ringeling told Porter that Ballard was attempting to apex the ore from the Cuno shaft, and that a Mr. Fletcher--former foreman of the Cuno shaft--was working with Ballard. Ringeling thought that if the ore did not enter other Hope Company claims they were safe, but if the vein did cross from the Cuno shaft to other holdings, the Company would have to prove it was an extension of one of their other ore veins.⁷ No record of an agreement with Ballard is available, and he continued to mine for several years more.

This was the last year of extensive operations by the Company. Even though the precipitous plunge of silver prices was momentarily checked, the long-term outlook for the white metal was dim, and future activity expanded only in response to small price increases. The company apparently still had ore to be worked but only when the lure of profits justified an expansion of mining and milling activities.

Through an indifferent 1898, the mill reduced 3,384 tons of ore in 150 days, recovering 154,000 ounces of silver bullion. Gross sales were about \$101,000, while estimated expenses were about \$135,000.

⁷Ringeling to Taussig, September 27, 1897, Hope Papers.

Despite this activity, the Company paid \$30,000 in dividends in 1898, apparently by reducing the \$55,000 reserve fund. Extensive prospecting was carried on in a search for higher grade ore as prices began to move upward, and prospecting expenses--near \$25 per ton--made up one-third of total operational expenses in Montana⁸ And Charles A. Cuno, secretary for more than ten years, died during the year and was replaced by W. C. Guels.

With the market somewhat stronger in 1898, the Bi-Metallic started fifty stamps at its mill in June.⁹ The operations were apparently not successful enough to justify continued work, because by the end of the year only the Hope Company remained open in the Philipsburg area.¹⁰ To minimize the cost of separate management, mining, and milling, the Granite Mountain was merged with the Bi-Metallic to become the Granite-Bimetallic Combination Mining Company, while the Hope continued to run.¹¹

Probably because of conditions in the silver market, the possibility of exploiting manganese ore had been investigated in 1897. No buyers were found.¹² In 1898 Ballard, still industriously mining, also began developing a manganese deposit, but his mining activity continued

⁸Annual Report for 1898, *ibid.*

⁹The Philipsburg Mail, June 3, 1898, p. 2.

¹⁰Montana, Bureau of Agriculture, Labor, and Industry, Sixth Annual Report (Helena, 1898), p. 169.

¹¹Montana, Inspector of Mines, Tenth Annual Report (Helena, 1898), p. 23.

¹²Tacoma Smelting and Refining Co. to Hope Co., March 14, 1898, Hope Papers.

marginal at best.¹³ Although no one may have suspected it at the time, manganese was destined to replace silver as the principal product of the Philipsburg mines.

Operations were further reduced during 1899. Ores recovered from the Shapleigh shaft and the Jubilee tunnel were of poor grade and the large expense of keeping water out of the Shapleigh shaft prevented extensive prospecting. The mill stamps dropped on almost the same amount of ore as during the previous year in slightly fewer days of activity. The proceeds for 1899 were only about \$33,000, however, compared to \$101,000 for the previous year. As in 1898, a large amount of the total Montana expenses was spent on prospecting for new deposits.¹⁴

By mid-year the Granite - Bimetallic Company was running at full capacity, and Ballard continued to extract ore from the Cuno shaft.¹⁵ The Hope Company was not so prosperous. In July a complete closure was ordered, and the following month President Porter came to Philipsburg to inspect the mines and mill.¹⁶ Operations began again in November, although probably on a reduced scale. The mines near Philipsburg were described as "scenes of renewed and great activity"

¹³Hope Co. to Hope Co., April 13, 1898, *ibid.*

¹⁴Annual Report for 1898, *ibid.*

¹⁵The Philipsburg Mail, May 26, 1899, p. 1. Western Mining World, July 29, 1899, p. 46.

¹⁶Hope Co. to Hope Co., July 27, 1899, Hope Papers. The Philipsburg Mail, August 18, 1899, p. 1.

in late 1899, but the activity was to be short-lived.¹⁷

Several new deposits were found in 1900. Except for that found on the Field lode, however, they were quickly exhausted or too poor in value to warrant extensive mining operations. The ore discovered during the year paid the costs of mining and milling, but the cost of prospecting was only partially recovered, with the company sustaining a loss for the year.¹⁸ Estimated income balanced against costs indicates a loss of about \$14,000, but because the judgment is based upon two estimated figures, it is possible that the loss was somewhat less.

After a feeble rise the silver market weakened again in 1900 while the Hope Mill lazily reduced 4,361 tons of ore in about 175 days, recovering some 102,000 ounces of the white metal.¹⁹ The nation clearly declared for the gold standard in 1900, and the silver sold by the Company brought only about \$61,000. Expenses ran more than this amount, near \$75,000, and a net loss was again incurred. Silver mining was becoming steadily less profitable, and the end of the Hope Company was near.

¹⁷Montana, Bureau of Agriculture, Labor, and Industry, Extra Edition of the Sixth Annual Report (Helena, 1899), p. 21.

¹⁸Annual Report for 1900, Hope Papers.

¹⁹Ibid.

CHAPTER VI

END OF THE HOPE MINING COMPANY, 1901-10

By 1901 the directors of the Hope Company probably knew that the corporation's strength was rapidly ebbing. Slowly, almost reluctantly, the company began to die, with the hoist closed in February, the labor force reduced in November, and all life disappearing the following month.¹ Western Mining World remained loyal to the Company, saying that this was not the first time it had closed, but this closure was the last.² The mill remained inactive until late 1903, and by that time the Company had ceased to exist.

Like many other mining corporations, the Hope Company died a lingering death. In 1902 the holdings passed to a new corporation known as the Goodhope Mining Company with John C. Porter and John J. Taussig of the old Hope Company retaining substantial interest in the new organization, although control was gradually passing to one Paul A. Fusz.³ Probably to provide continuity, and because no loss of control resulted, the secretary of the Hope Company was retained in that position.⁴ The Philipsburg works stood idle throughout the year. The

¹The Philipsburg Mail. February 22, November 8, December 6, 1901, pp. 8, 8, 8.

²Western Mining World, December 14, 1901, p. 21

³Montana, Secretary of State, Document no. 1987.

⁴Western Mining World, April 19, 1902, p. 15.

new company, like its predecessor, was a Missouri corporation firmly controlled by St. Louis interests.

With renewed vigor the Goodhope Company set to work at Philipsburg, and the residents heard the mill pound steadily from 1902 until mid-1906, when the company paused to reorganize once more. As if hoping to recapture some of the prosperity the enterprise had once known, the newborn corporation was again styled the Hope Company. A. B. Ewing reappeared as a director of the reorganized venture--he had sat on the boards of both the Granite and Bi-Metallic Companies--as did Paul A. Fusz, former director of the Bi-Metallic Company. John C. Porter, who had guided the Company fortunes for more than a decade (1890 through 1900), was gone, and the ownership of his vice-president, J. J. Taussig, was reduced to one share.⁵

The reorganization was a tonic but not a cure for the ills besetting the company, and although the new directors managed to move the rusting corporate machinery during the summer months of 1907 and 1908, proceeds from both years were extremely small. After these dates only one report of bullion shipped appeared. In 1909 the company shipped five bars of bullion, probably from a final clean-up at the mine and mill.⁶

In 1911 the property of the Hope Company passed to the Philipsburg Mining Company, another creature of Missouri, completely owned by Missourians. Although Fusz remained as a major stockholder, control

⁵Montana, Secretary of State, Document no. 5975.

⁶Bullion Shipped Record, Hope Papers.

of the new company rested with Max Kotany of St. Louis.⁷ The Hope Company had now completely disappeared. Operations had been curtailed for two years, and even after the property passed to the Philipsburg Mining Company, activity was almost nonexistent for some time. In 1912 the Montana Inspector of Mines reported that operations during the previous two years had been done by lessees who had confined their activity to prospecting or working on pillars of ore left by the earlier mining ventures.⁸ One authority observed that the final phase in nearly all the Western mining camps was an era of leasing after the mines had reached the point where operation by a company was no longer profitable.⁹ The Hope had reached that point. Silver mining was no longer profitable in Montana, and exploitation of the white metal ceased to be a major industry in the state.

⁷Montana, Secretary of State, Document no. 6829.

⁸Montana, Inspector of Mines, Report for 1911-1912 (Helena, 1912), p. 64.

⁹Theodore J. Hoover, Economics of Mining (3d ed.; Stanford, California: Stanford University Press, 1954), p. 136.

CHAPTER VII

SUMMARY AND CONCLUSIONS

The St. Louis and Montana Mining Company's mode of business operation is not known. With its business office located in St. Louis and most funds drawn from there, it seems probable that a good deal of control was attempted from that city. An executive committee with some discretionary powers did exist in Montana, however, and day-to-day control was probably in the hands of that committee. The St. Louis office appears to have conducted financial business with its Montana committee through S. T. Hauser, while James Stuart was in charge of mining operations at Philipsburg.

With the establishment of the Hope Mining Company in 1872, a new method of conducting business evolved with St. Louis interests taking firm control of the company. Although the first evidence of this new method did not appear until the early 1880's, it seems likely that the change accompanied the 1872 shift of control. James Stuart had left the company before the reorganization, and the superintendent--with his tenure dependent upon continued success--was appointed by St. Louis from that time on.

Under the new system almost all business was conducted by the home office. Bullion was shipped to the Chicago and Aurora Smelting and Refinery Company, and the product from smelting was forwarded to New York. There the silver was sold by the American Exchange National

Bank, and the proceeds credited to the Hope Mining Company account with the State Savings Bank of St. Louis.¹

A monthly estimate of funds required for operations, together with a detailed report of mining and milling activities, was forwarded to St. Louis from Montana. The necessary funds were transferred to the Hope Company account with the First National Bank of Helena, Montana, against which the Montana superintendent could draw. St. Louis also watched reports of mining and milling activities closely. From these reports and their own financial accounts, the home office exercised continuing effective control and provided detailed guidance for the Montana superintendent. Only those supplies that could be procured locally were purchased in Montana. In this category were lumber and timber, coal and wood. Most other items such as salt, quicksilver, powder and miscellaneous tools and supplies were probably purchased by St. Louis for the Montana office. Evidently the entire procedure was designed to maintain the maximum possible control in St. Louis. While this system had merits in that the superintendent was not burdened by accounting, it also had serious liabilities. At times, although perhaps only when operations were marginal, the superintendent seemed unaware that the company was incurring a loss until he learned otherwise from the home office.

Although a bookkeeper was employed in Montana, accounting was done primarily in St. Louis. At the end of the fiscal year an inventory list was forwarded to the city office. This list was balanced

¹Cuno to Ringeling, June 29, 1895. Hope Papers.

against home office ledger accounts and Montana advised of the entries necessary to balance the books. After receiving the adjusted accounts and additional financial information from St. Louis, the Montana bookkeeper drew up a report concerning operations for the year. This report was forwarded to St. Louis where the balance sheet and annual report to the stockholders were drawn up. The method was cumbersome and costly. One writer estimates that an additional cost of 20 to 33 per cent of operating profit is necessary to maintain a city office. This estimate appears high for the Hope Mining Company, but the city office may have accounted for more than sixteen per cent of total expenses. The economy of a single office was sacrificed for greater control by the home office.

The pattern of the Hope Company's shift of control is somewhat characteristic of Montana mining ventures. Claims, of course, had to be discovered by persons present in Montana. With the exception of simple placer operations, however, these claims could be exploited only after considerable capital investments had been made. Investment capital of the necessary magnitude did not exist in Montana in most cases. For this reason Montana claim owners often acquired capital from financial centers of the country--New York, Philadelphia, San Francisco and, in this particular case, St. Louis.² In most cases control followed the capital, with Montana claim owners gradually losing control of the mining venture. In the case of the Hope Mining

²For further data on foreign corporations in Montana during the territorial period, see a forthcoming thesis being written by Patrick McLatchy at Montana State University, Missoula, Montana

Company the loss of control occurred in 1872 with the reorganization of that year.

There have been constant complaints that Montana was plundered by eastern capitalists. One must concede, however, that investment capital performs a vital function in the productive process and should earn returns in proportion to what it lends to production. The crucial question is not the right to a return from capital invested, but rather a quantitative "how much." This quantitative judgment is especially important in regard to an extractive industry like mining where mineral resources are removed and cannot be replaced. Certainly the major portion of the profits from the Hope Mining Company, like many other mining ventures in Montana, was realized by outside investors.

Viewed generally, and also specifically in regard to Montana, it is questionable if the mining of precious metals ever repaid the total costs involved in the industry. Because it is impossible to assign finite values to such things as the time and labor expended, lives lost, misery endured, and greed and crime associated with the search for gold and silver--one can perhaps pass over the moot question of whether the mining of precious metals ever repaid total costs and consider if outside capital invested in the Hope Company compensated for the loss of local control.

On the credit side, we have already mentioned that the St. Louis and Montana Mining Company provided an economic base for other industries such as agriculture, lumbering, trade and transportation. This Company also brought some talented men into the territory with at least one, G. C. Swallow, who became Montana's first state inspector of

mines, remaining. The St. Louis and Montana Company also added some stability to the "boom and bust" economy of the territory.

The Hope Company displayed some of these same good points. Certainly it was one continuing source of tax revenue for Deer Lodge and, later, Granite county for more than forty years. Although the state and local taxes paid were probably not a great source of income for government, the company also met a payroll--at least intermittently--for nearly half a century. But there is little reason to credit the Hope Company with bringing new talent into Montana.

On the debit side, the loss of control meant that Montana faced a corporation organized and controlled in Missouri with most of the profits made by St. Louis investors. The company did indeed spawn and nurture Philipsburg, yet the town continued to exist after the company was gone, with little decrease in population. Agriculture, lumber, trade and transport were stimulated, but one wonders if these industries would not have come to the Philipsburg area without the Hope Company. And if they had come later, they might have been more beneficial to Montana. Certainly if lumbering had been delayed for fifty years the methods of exploitation would have been quite different. What if the Northern Pacific had been delayed twenty years?

While the capital necessary to begin the Hope Company probably did not exist in Montana in the 1860's, investment funds of the necessary magnitude (some \$250,000 initial investment) would have been available at a later time. There is little reason to believe that the methods and motives of a Montana investor would have been different from those of a St. Louis investor. Yet, it is possible that the

Montana capitalist might have been more responsive to the needs of Montana, and--if he made money--might have looked to Montana for further investment of the profits made.

Today the rotting, empty shell of the Granite-Bimetallic mill stands a mile or slightly more southeast of Philipsburg. In a small gulch at the head of Main Street is one small building surrounded by the rubble that was once the Hope Mill. Scattered bits of rusted machinery litter the countryside between these ruins while piles of raw earth and tailings mark the sites of other mines and mills. And, less visible to the eye, indeed almost incomprehensible to the casual visitor, the miles of tunnels and underground caverns mark the places where mineral wealth once existed. While it is impossible to objectively measure the values involved and reach an unbiased conclusion, the question arises: Could Montana have fared much worse? The benefits derived locally certainly do not appear to have compensated for the loss of control.

There are numerous reasons for the failure of the Hope Company, but the fall of silver prices, gradual at first and then accelerated after 1891, was the chief reason. Although prices determined the quality of ore from which a profit could be made, the quantity of ore was also a chronic problem. Extensive exploration was carried on with a diamond drill, but the problem of adequate ore deposits was not really solved until 1892. And by that time, prices were falling fast. Milling techniques rose quickly from about 40 per cent recovery of assay value at the mill in the 1860's to about 85 per cent by the mid-1880's. After 1893, however, increases in recovery rates were

beginning to level out and could not compensate for falling prices.

Several other factors made mining in Montana a high-cost industry. Geographically the mines were located inland in an isolated area with high transport costs. These costs affected not only machinery and supplies coming in, but also products shipped out for sale. The long distance from markets made it impossible, for a time, to exploit other minerals, such as lead, which were often found with the silver-bearing ore. The geographic location also caused delays waiting for necessary supplies.

The history of the Hope Mining Company in some respects reflects the history of silver mining as an industry in Montana. In other respects it is unique. Like many other companies it began with outside capital and Montana stockholders gradually lost control to the outside investors. It began with little technical knowledge and rapidly improved its methods. Yet, by the time the Company had gained the knowledge necessary for efficient mining, silver exploitation as an industry in Montana was dying. In these respects it is like many other companies.

Unlike many other companies, the Hope Company was most successful in terms of longevity, lasting for more than forty years. This long period of existence, however, distorts the financial picture somewhat. Dividends paid between 1884 and 1900 amounted to about \$500,000, much less than those paid by the giants of Philipsburg, the Granite and Bi-Metallic Companies. Assuming that all stock was paid up and a maximum of a million dollars paid in dividends in forty years, the rate of return on initial capital invested was about ten per cent per year. If all estimated capital invested is considered, however,

the return was nearer four per cent.³ This would be a fair, but less than spectacular return, especially for a mining venture. The Company was not an easy, quick way to wealth nor was it a failure, but rather a sound, steady business venture.

While an extended discussion of the factors affecting silver prices is beyond the scope of this study, some mention should be made of these factors. Silver had value as a commodity and also as monetary metal which could be used for fractional coins or backing for currency. The commodity uses were limited to such items as photographic uses, mirror making, silverware, and miscellaneous other items.⁴ The quantity needed for these items was quite limited. Monetary uses of silver could be expanded through political action incited by currency reformers and businessmen concerned with the growing needs of trade.

Until 1873 a good deal of silver was used to back modern currencies, with Great Britain the only major nation on the gold standard. In 1873 Germany adopted the gold standard and began to dispose of its demonetized silver, with the Scandinavian Monetary Conference (Norway, Sweden, and Denmark) following suit.⁵ Thus, with world production

³In either case these estimates are based on the assumption that the original stockholders retained their interests for the entire life of the Company. It is probable that this was not true, and that the stockholders of the original company lost money while the persons owning stock in 1892 and 1893 may have received a very good return on their investment.

⁴Y. S. Leong, Silver: An Analysis of Factors Affecting Its Price (Washington: The Brookings Institute, 1934), p. 38.

⁵Ibid., p. 2.

rapidly rising, a number of important nations were no longer consumers of the metal for monetary purposes, although France, Belgium and Luxembourg did continue to use small amounts. India and China were major consumers. The demand of these nations rested to some extent on their volume of foreign trade, but India, especially, absorbed an enormous amount of silver for ornaments. Coins were often melted down for these ornaments, resulting in a constant demand for silver to replenish the monetary supply.⁶ United States demand also declined when the Coinage Act of 1873 failed to mention silver and in effect demonetized it.⁷ With this omission and the panic of 1873 contributing to falling prices, it is not surprising that the Hope Company spent several years rearranging business affairs after the failure of the St. Louis and Montana Company in 1872.

The omission of silver from the Coinage Act of 1873 became a political issue known as the "Crime of '73." When the Specie Resumption Act of 1875 eliminated greenbacks as a political issue, the easy-credit advocates turned to silver as a political symbol and an inflationary device intended to reverse the general price decline which was a marked feature of the age. Farmers were especially concerned in the matter. Silver satisfied the requirement that there be bullion backing for currency, insured an expansion of the money

⁶J. Laurence Laughlin, A History of Bimetallism in the United States (New York: D. Appleton and Co., 1901), p. 109.

⁷Samuel E. Morison and Henry S. Commager, The Growth of the American Republic (4th ed. New York: Oxford University Press, 1953), II, p. 245.

supply, and had the backing of silver mine owners and interests.⁸

In 1878 the Bland-Allison Act was passed over a presidential veto. This Act provided that the government must purchase not less than two nor more than four million dollars worth of silver monthly, to be coined into silver dollars at the existing legal ratio with gold.⁹ This purchase for monetary use did not compensate for increased production, and the price continued to fall. An international conference held in Paris during 1878 also failed to increase the monetary demand as did several later conferences. The United States delegate advocated bi-metallism at the 1878 conference, but only Italy agreed. France would not consent to bi-metallism, Great Britain sent a representative who would not commit his government, Germany refused to send delegates, Russia and Austria were noncommittal, while Belgium, Switzerland and the Scandinavian states favored gold.¹⁰ A second conference held in 1881 was equally disappointing.¹¹

By 1890 the enabling acts of 1889 and 1890 had brought six new western states into the Union and the balance of power shifted in Congress. Through this shift of power the Sherman Silver Purchase Act of 1890 was passed, with the Hope Company responding by spending a good deal of money on prospecting for ore. The Act required the government

⁸ Ibid., p. 244.

⁹ Ibid., p. 246.

¹⁰ A. Barton Hepburn, A History of Currency in the United States, (New York: The Macmillan Co., 1915), pp. 284-85.

¹¹ Laughlin, op. cit., p. 247.

to purchase 4.5 million ounces of silver each month at current market prices. The Act also provided that silver be purchased with Treasury notes redeemable in gold or silver at the Secretary's discretion.¹² A final attempt by the United States to secure international bi-metallism at a conference in Brussels during 1892 witnessed another failure.¹³ The failure of this conference and the depression of 1893 caused a sharp drop in silver prices. Because the Sherman Act provided that Treasury notes issued with silver backing were redeemable in gold or silver, gold reserves--for a number of reasons which need not detain us here--were rapidly drained from the Federal Treasury. In August, 1893, President Cleveland called a special session of Congress to secure the repeal of the Sherman Act, and silver prices fell even lower.¹⁴ India, a large consumer of silver for monetary purposes had closed her mints to silver in 1890.

The Hope Company continued to operate in 1893 even though the Granite and Bi-Metallic Companies--for reasons already discussed--failed. Yet, in 1899, the then combined Granite - Bimetallic was more prosperous than the Hope Company. The reason was probably the more extensive ore deposits of the Granite - Bimetallic which were also of better quality. Although differing in many respects, neither the Hope nor the Granite - Bimetallic could survive the slow death of silver mining as an industry in Montana. By 1912 about seventy-five per cent

¹²Morison and Commager, op.cit., p. 247.

¹³Hepburn, op. cit., p. 347.

¹⁴Morison and Commager, op.cit., p. 251.

of Montana's silver production was the by-product of copper refining and a substantial portion of the remainder a by-product of zinc mining.

APPENDIX A

STATISTICAL TABLES

Table 1
Directors of Selected Mining Companies
1866-1911

St. Louis and Montana Mining Co. - 1866	Hope Mining Co. ¹ 1872	Granite Mountain Mining Co. ² 1881	Bi-Metallic Mining Co. ³ 1886	Goodhope Mining Co. ⁴ 1902	Hope Mining Co. ⁵ 1907	Phillipsburg Mining Co. ⁶ 1911
J. How W. D'Oench S. Treat J.O. Broadhead S.T. Hauser W.B. Dance James Stuart G.W. Parker L.M. Kennett	F. Ringeling ⁷ J. Kirkead C.F. Meyer C.C. Whittlesey ⁸ F. McArdle ^{7,8}	L. Duestrow	J. N. Bofinger J. M. Merrell	J. C. Porter	O.J. Wilhelmi J.R. Lucas O.J. Olshauser E.P. Olshauser	E. S. Orr J. P. Hartnett E. Barklage
S. Gaty	W.C. Kennett S. Gaty E. Harrison ⁹ D.A. January ⁷ H.J. McKellops A.F. Shapleigh W.L. Ewing ⁷ C. Taussig ⁷	E. Harrison J.S. January A.F. Shapleigh A.B. Ewing C. Taussig C. Clark L.M. Rumsey	H.J. McKellops A.B. Ewing ¹⁰ C. Clark L.M. Rumsey ¹¹ M. Rumsey ^{10,11} C.D. McLure ¹⁰ P.A. Fusz ^{10,11}	J.J. Taussig L.M. Rumsey, Jr. H. Rumsey C.D. McLure P.A. Fusz J.H. Dieckman Max Kotany	N.W. Ewing A.B. Ewing J.J. Taussig L.M. Rumsey, Jr. H.S. Rumsey P.A. Fusz J.H. Dieckman Max Kotany	A.L. Shapleigh Mark Ewing J.J. Taussig L.M. Rumsey, Jr. H.S. Rumsey F.D. Fusz J.H. Dieckman Max Kotany

¹Montana, Secretary of State, Book A., p. 151. ²Ibid., Book B., p. 145-46. ³Ibid., Book D., p. 86-88.

⁴Ibid., Document no. 1987. ⁵Ibid., Doc. no. 5975. ⁶Ibid., Doc. no. 6829.

⁷Stockholders in the St. Louis and Montana Mining Company.

⁸Officers of the Missouri Petroleum and Mining Company

⁹A James Harrison was a stockholder in the St. Louis and Montana Mining Company.

¹⁰These men with D. Jankower formed the Board of Directors of the American Gem Mining Syndicate.

Montana Secretary of State, Book T., p. 406-09.

¹¹These men plus C. Jagels formed the Board of Directors of the Montana Water, Electric Power and Mining Company. Montana Secretary of State, Document no. 1371.

Table 2

List of Hope Mining Company Property
and Subsequent Ownership¹

Claim	Subsequent Owners		
Check, Cross, Constant, Comanche, Dashaway, Field Fraction, Game Cock, Homestead, High Oar, Hope Mill Site, Kaiser, Little Emma, Prince Imperial, Porter, Potosi, Shapleigh, Take All, Wabus	Philipsburg Mining Company	J. C. Yob	Peter Antonelli
Cliff No. 2 Extension East, Durango Mill Site, Monarch, Nellon Reservoir Site, Ora Cash, Taussig, Seal Rock, Salmon		Contact Mines	
Cliff No. 2 and No. 5 Bay Horse and Mill Site, Durango, Estil, Silver Chief and Mill Site, Tariff, True Fissure, Walter B. Dance, W. C. Bryant		Moorlight Mining Company	Taylor Knapp Company ²
Algonquin, Bell, Dead Horse		Trout Mining Company	American Mining and Metals, Inc.
Caledonia, Hope Mill Site, Lady Byron, Midnight, Sam Gaty, Reliance, Taussig		Miscellaneous Owners	

¹Granite County, Montana. Office of the Clerk and Recorder. Lots and Lands, Book I.

²All claims except Durango and Estil had intermediate owners before being acquired by Taylor Knapp Company.

Table 3
Summary of Hope Mining Company Operations
1884-1900 ^{a/}

Year	Silver Bullion Produced (Thousand Ounces)	Proceeds (Thousand Dollars)	Expenses (Thousand Dollars)	Dividends Paid (Thousand Dollars)	Reserve Fund (Thousand Dollars)
1884	N.A.	N.A.	N.A.	56.5	None
1885	121.8	119.3 ^{b/}	140.5 ^{c/}	N.A.	None
1886	113.6	112.3	129.5 ^{c/}	N.A.	None
1887	264.0 ^{d/}	258.0	175.9	2.0 ^{d/}	None
1888	167.2	157.4	161.0 ^{c/}	50.0	None
1889	129.5 ^{e/}	121.0	144.9	None	None
1890	N.A.	N.A.	N.A.	N.A.	None
1891	79.5	85.0	82.7	None	None
1892	443.3 ^{f/}	380.8	158.3 ^{c/}	50.0	100.0
1893	384.0 ^{f/}	306.5	153.3 ^{c/}	175.0	N.A.
1894	311.7 ^{f/}	186.0	145.0 ^{c/}	75.0	N.A.
1895	50.2 ^{f/}	43.8	83.0 ^{c/}	10.0	50.0
1896	287.5 ^{f/}	170.5	122.7 ^{c/}	40.0	55.0
1897	N.A.	N.A.	N.A.	N.A.	N.A.
1898	153.5 ^{f/}	100.5	134.7 ^{c/}	30.0	N.A.
1899	62.0 ^{f/}	32.6	95.8 ^{c/}	None	2.0
1900	102.3 ^{f/}	61.0 ^{g/}	74.5 ^{c/}	N.A.	2.1

^{a/} Unless otherwise indicated, data are from Hope Papers, Annual Reports, 1884-1900.

^{b/} Estimate based on reported ounces produced at 98 cents per ounce.

^{c/} The years for which data exist (1889 and 1891) indicate that expenses at St. Louis averaged about 16.66 per cent of Montana expenses. Except where total expenses were reported (1887, 1889, and 1891) Montana expenses were increased by 16.66 per cent to estimate total expenses.

^{d/} The Philipsburg Mail, May 2, 1889, p. 1.

^{e/} Estimate based on reported proceeds at 93.5 cents per ounce.

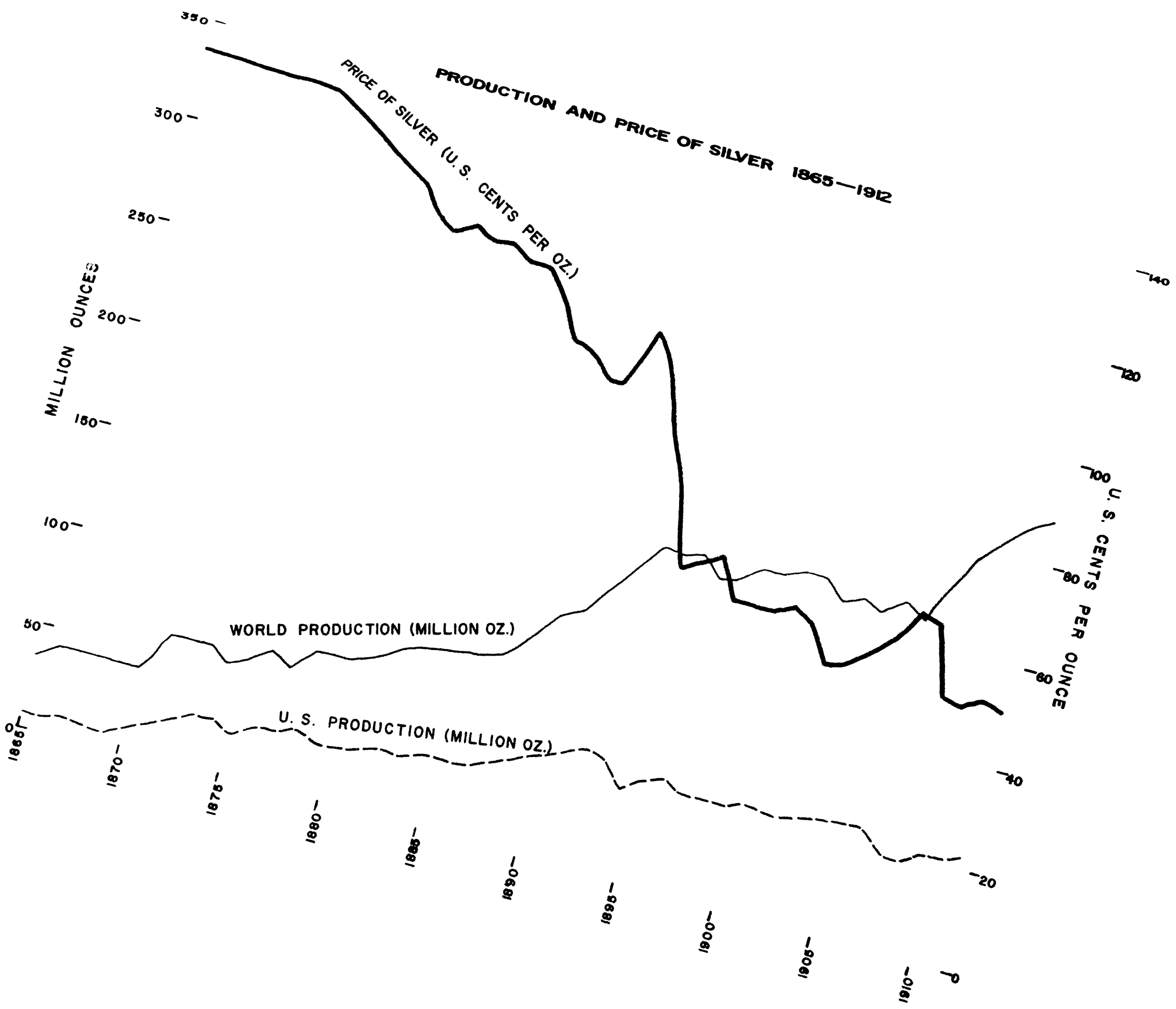
^{f/} Ounces shipped reported in Annual Reports. Figures for 1884-91 are ounces produced.

^{g/} Estimate based on ounces shipped at 59.6 cents per ounce.

Table 4

Hope Mining Company Bullion (Silver Bars) Shipped Record, 1892-1909

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Totals
1892	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	16	74	N.A.
1893	21	8	20	19	13	16	2	0	14	16	6	1	136
1894	19	29	15	9	12	21	16	17	15	19	16	12	200
1895	3	0	0	0	0	7	2	N.A.	N.A.	5	0	0	17
1896	0	7	13	15	20	20	18	29	22	24	18	26	212
1897	17	16	20	19	20	18	21	26	29	19	25	23	253
1898	20	19	15	5	0	8	7	0	0	0	7	6	87
1899	12	8	5	0	2	4	3	0	6	7	8	4	59
1900	8	3	6	7	9	4	5	8	3	0	9	0	62
1901	13	0	2	8	4	6	6	2	4	2	3	1	51
1902	1	0	0	0	0	0	0	0	0	0	0	0	1
1903	0	0	0	0	0	0	0	0	0	0	14	17	31
1904	13	16	12	8	12	12	14	12	12	4	6	8	129
1905	12	4	8	13	8	8	12	8	8	6	4	2	93
1906	2	5	0	0	4	8	3	6	0	0	0	0	28
1907	0	0	0	0	2	6	6	4	4	2	7	0	31
1908	0	0	0	0	6	4	8	6	7	6	0	0	37
1909	0	0	0	0	0	5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	5



APPENDIX B

THE HOPE MINE AND MILL

The Hope Mining Company Mine and Mill

Hope Hill is located about one mile northeast of Philipsburg and is honeycombed with miles of intersecting workings. The Jubilee tunnel entered the west slope of the hill at an elevation of about 5,500 feet and was driven to the Shapleigh shaft which was intersected about 540 feet from the portal of the tunnel. On the tunnel level about 6,000 feet of drifts and crosscuts were driven. The Shapleigh shaft was 570 feet deep. The Jubilee tunnel intersected the shaft at a depth of about 100 feet, and below this, levels were driven out at depths of about 200, 400, and 570 feet. These levels were connected with the tunnel by winzes, stopes, and inclines. After intersecting the Shapleigh shaft, the Jubilee tunnel continued eastward to the base of the Porter incline and through it was connected to the Porter workings above. Through torturous raises, drifts and cross cuts, the Jubilee tunnel connected with the Field and Cuno shafts to the southeast and also with the original Hope Discovery workings.¹

The Hope Mill is in ruins today. Only portions of the original stone structure stand at the eastern end of the main street of Philipsburg, testifying to an earlier and more prosperous age for silver mining. The mill used a pan amalgamation process which was developed in the Washoe district of Nevada to treat silver ores. This process depends upon certain chemical processes and reactions. The pan was an upright

¹W. H. Emmons and F. C. Calkins, Geology and Ore Deposits of the Philipsburg Quadrangle Montana, U. S. Geological Survey Professional Paper No. 78 (Washington: U. S. Government Printing Office, 1913), p.213.

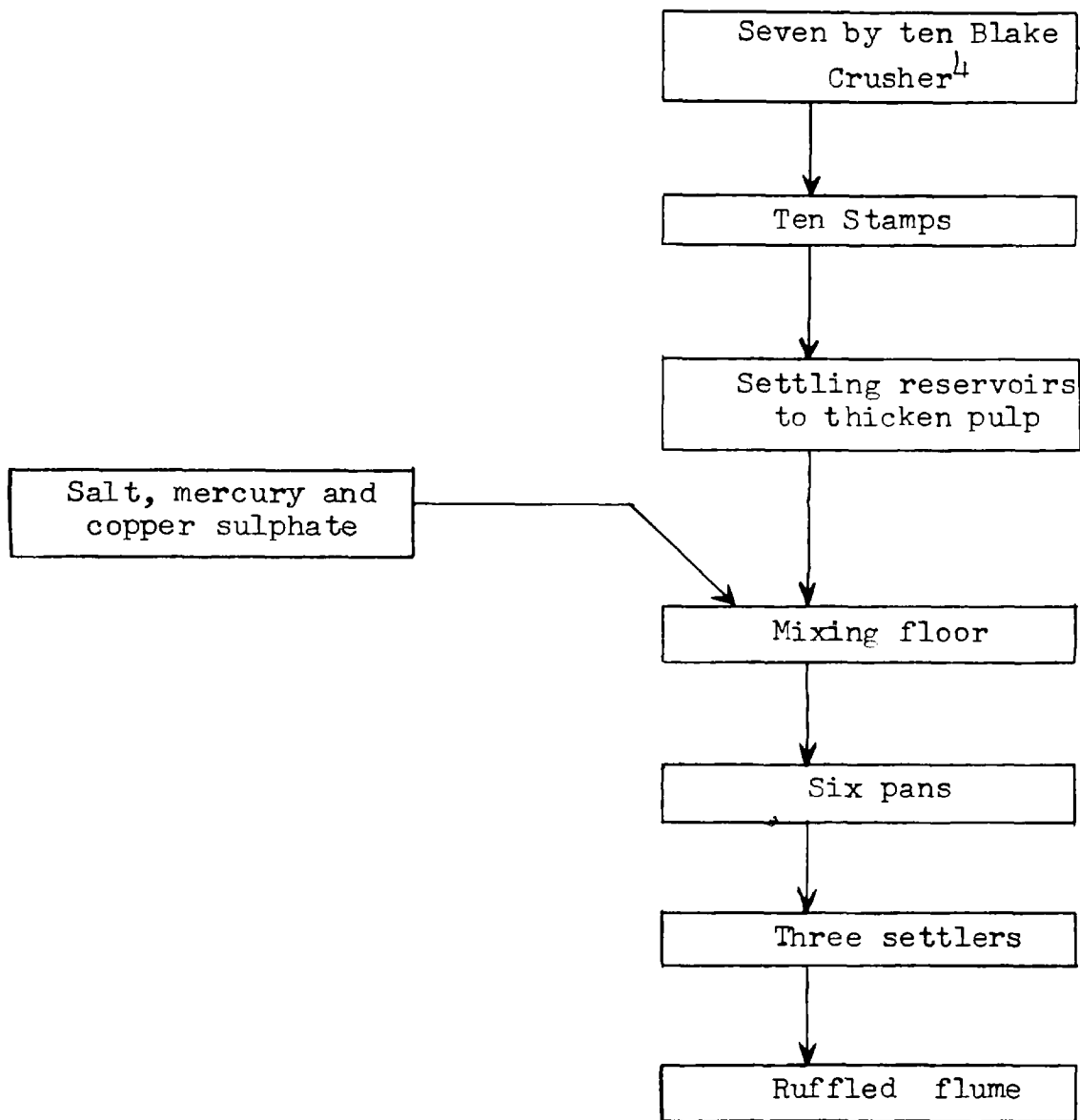
cylindrical vat about 5 feet in diameter and 2 feet deep, made of iron or wood shod with iron. A muller, or iron disk, slightly smaller than the bottom of the vat, moved with a rotary motion mixing and grinding the ore. From this pan the ore went to settling reservoirs as a pasty mud. Salt, mercury and copper sulphate were "charged" into the pan and reacted on the silver sulphide and silver chloride. In the presence of iron, mercury frees the silver from sulphide and chloride compounds and forms amalgam. Iron reduced the mercuric chloride formed to mercury. Copper sulphate reacted on common salt and, in the presence of iron, formed cuprous chloride which reacted on silver sulphide and to some extent on sulpharsenates and sulphantimonates of silver. Heat, supplied in the form of steam to the pans, facilitated the reaction. After about eight hours grinding in the pans, the pulp passed to water to facilitate separation of mercury and amalgam.²

A diagram of the process used at the Hope Mill is shown on the following page. This process remained essentially unchanged throughout the history of the company.³

²Ibid., pp. 194-95.

³Ibid., p. 195.

Schematic Drawing of Process Used by Hope Mill

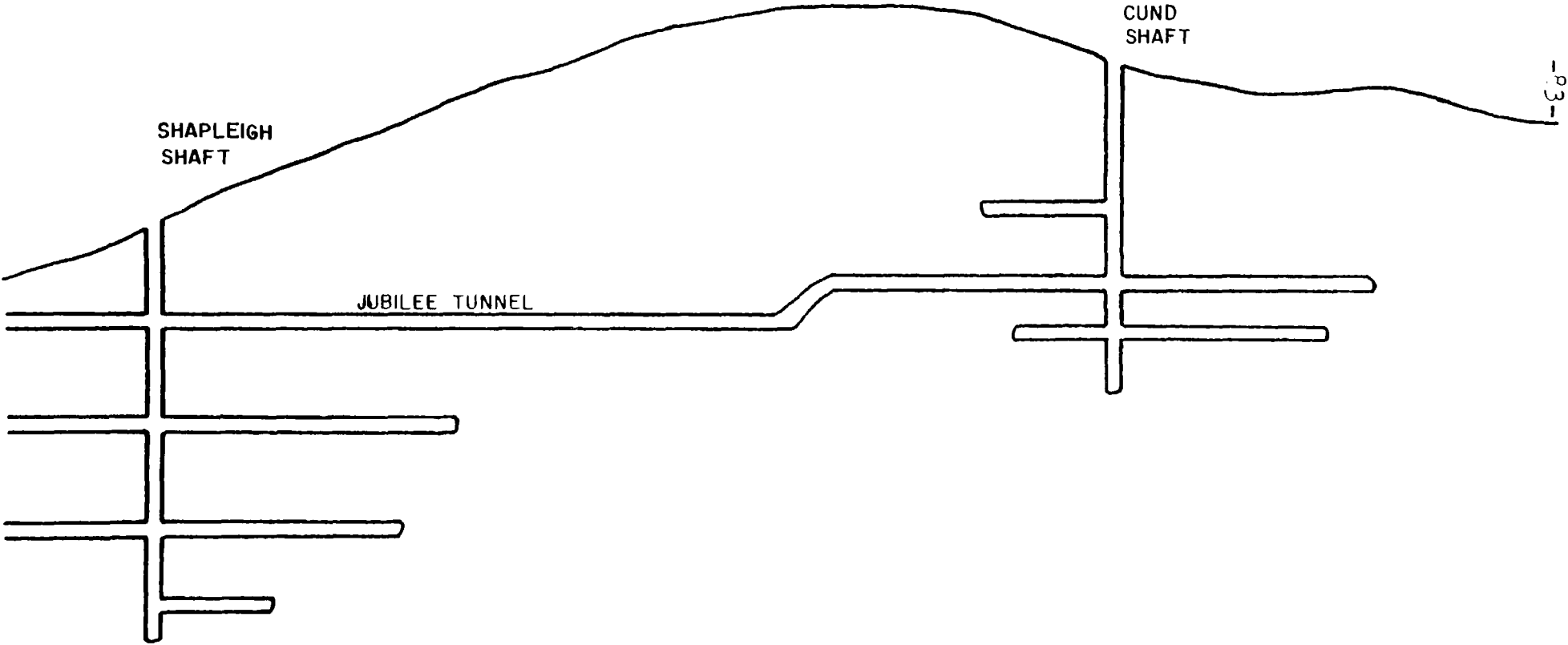


⁴A crusher with one fixed jaw plate and one pivoted at the top so as to give the greatest movement on the smallest lump. Albert H. Fay, A Glossary of the Mining and Mineral Industry, Department of the Interior, Bureau of Mines (Washington, D. C.: Government Printing Office, 1920), p. 83.

S C H E M A T I C D R A W I N G

T H E H O P E M I N E

(V E R T I C A L S E C T I O N)



APPENDIX C

BIOGRAPHICAL DATA

BIOGRAPHICAL DATA

A. Directors of the St. Louis and Montana Mining Company

James O. Broadhead was a former U. S. attorney for the eastern district of Missouri, former provost marshal for Missouri, a long-time state politician, and a member of the law firm of Sharp and Broadhead

W. B. Dance was a member of the Montana executive committee and also associated with the firm of Dance, Stuart and Company.

William D'Oench was associated with William D'Oench and Company and president of the Franklin Savings Institution.

Samuel Gaty was of the Gaty, McCune and Glasby foundry.

Samuel T. Hauser was a member of the Montana executive committee. Hauser was born in Kentucky in 1833 and went to Montana with W. B. Dance after working for railroads in Missouri for eight years as a civil engineer. In 1865 he organized a bank at Virginia City in partnership with N. P. Langford and one year later founded the First National Bank of Helena. Later Hauser owned banks in Butte, Ft. Benton and Missoula and engaged in almost every conceivable investment venture in Montana. He was appointed Governor of the territory in 1885 by Cleveland and later became the first chief executive of the State. For a complete biography of this important Montana capitalist, see the forthcoming study by John W. Hakola.

John How was president of the State Savings Institution, a former mayor of St. Louis and senior member of the firms of John How and Sons and of How, Harrington and Company.

L. M. Kennett was a former mayor of St. Louis, cousin of Hauser, former representative to Congress, and a director of the Boatman's Savings Institution.

George W. Parker's business affiliations are unknown.

James Stuart was born in Virginia and went to California with his father and brother Granville in 1852. In 1857 he returned to Montana with Granville, joined the firm of Dance, Stuart and Company and became superintendent for the St. Louis and Montana Mining Company. He left the Company prior to the reorganization of 1872, became an Indian post trader and died at Ft. Peck, Montana in 1873.

Granville Stuart, as mentioned above, came to Montana in 1857, returning from California. In 1870 he purchased James Stuart's interest in the mercantile business and then sold the business in 1873. For three years he was engaged in mining ventures and then became a stockholder and bookkeeper at the First National Bank of Helena. After a short time in Helena, he managed a large ranching venture at Ft. Maginnis, Montana for himself, Hauser, and A. J. Davis of Butte. He served on the Territorial Council in 1872 and in the Territorial House in 1875 and 1879. In 1891, after his cattle business had failed, he became State Land Agent under Governor Hauser and in 1894 was appointed envoy extraordinary and minister plenipotentiary to Uruguay and Paraguay. In 1904 he became librarian at Butte and was commissioned to write a state history of Montana in 1916. The work was not completed when he died October 2, 1918.

Samuel Treat was a judge of the U. S. District Court.

B. Other Stockholders of the St. Louis and Montana Mining Company and Closely Related Corporations

Gerard B. Allen was with the Fulton Iron Works.

S. M. Breckenridge was a collector of customs and former judge of the St. Louis circuit court.

J. H. Britton was president of the Old State Bank of Missouri and former cashier of the Southern Bank.

Amos Cotling was associated with Jameson, Cotling and Company of St. Louis and Cotling and Smith of New York.

C. K. Dickson was a member of the firm of Murdock and Dickson.

Dwight Durkee was a banker.

James B. Eads was a constructor and inventor of gun boats, chief engineer of the St. Louis Bridge Company, part owner of the Granby lead mines, and a director of the National Bank of Missouri.

William L. Ewing was a former president of the Merchant's Bank and a member of William L. Ewing and Company.

L. C. Garnier's other business affiliations are unknown.

James Harrison was with the firm of Chouteau, Harrison and Valle and the Rolling Mills.

D. A. January was with the firm of D. A. January and Company.

John S. McCune was a former member of the Gaty, McCune and Glasby foundry, president of the Iron Mountain Company, and associated with the Keokuk Packet Company and the Pittsburg Coal Company.

Felix McArdle was a metallurgist and assayer.

J. J. O'Fallon's other business interests are unknown.

Captain A. M. Pike was a large stock dealer and former head of a banking house in Pike County, Missouri.

F. Ringeling was cashier of the Franklin Savings Institution.

M. Steitz was probably a relative of Augustus Steitz.

C. Taussig was a member of Taussig, Livingstone and Company.

M. Taussig was with the firm of Ahles and Taussig.

John A. Ubsdell was with the firm of Ubsdell, Parr, and Duncan of St. Louis and New York.

E. Y. Ware was with Belcher's Sugar Refinery.

C. Other Persons Affiliated with the St. Louis and Montana Mining Company

Philip Deidesheimer was born in Germany in 1832 and came to California via Cape Horn in 1851 where he remained until 1860. He then went to Nevada and there devised a method of "square stoping" which allowed removal of deposits in the famous Comstock lode. Philipsburg was named for him after he came to Montana in 1865 to help Steitz at Montana City. After a short time in Montana, Deidesheimer returned to California, invested heavily in mining ventures, and lost a good deal of money. He then managed a gold mine in Colorado for the Robelings. Little is known of his later life. For a description of square set stoping, see Robert S. Lewis, Elements of Mining (2d ed.; New York: John Wiley & Sons, Inc., 1941), p. 74-84.

G. C. Swallow was born in Maryland and educated at Bowdoin College. He held the positions of professor of geology, chemistry, and mineralogy at the University of Missouri, state geologist for Missouri, and state geologist for Kansas. After working for the St. Louis and Montana Mining Company, he became the first Inspector of Mines for the State of Montana.

APPENDIX D
GLOSSARY OF MINING TERMS

Glossary of Mining Terms

- Amalgamation-pan** - A pan in which the process of amalgamation or combination with mercury is affected. Used in gold and silver metallurgy.
- Apex** - In geology, the top of an anti-clinal fold of strata. This term as used in United States Revised Statutes, has been the occasion of much litigation. It is supposed to mean something nearly equivalent to outcrop.
- Blast furnace** - A furnace in which combustion is forced by a current of air under pressure, especially for smelting ores. A blast furnace is designated as hot-blast or cold-blast according to the temperature of the air used for the blast. The furnace is usually vertical, but varies greatly in size and shape.
- Bullion** - Uncoined gold and silver. Base bullion is usually pig lead containing little gold or silver.
- Claim** - The portion of mining ground held under the Federal and local laws by one claimant or association, by virtue of one location and record. Lode claims, maximum size 600 by 1,500 feet. Placer claims, 660 by 1,320 feet. A claim is sometimes called a "location."
- Concentrator** - An apparatus in which, by the aid of water or air and specific gravity, mechanical concentration of ores is performed. Also applied to the entire plant containing the various concentrating devices, or machinery. A concentration plant.
- Crosscut** - A small passageway driven at right angles to the main entry to connect it with a parallel entry or air course. Also used in Arkansas instead of "breakthrough."
- Cupelling furnace** - A shaft furnace with a blast, for remelting metals, preparatory to casting. Sometimes incorrectly pronounced and written Cupelo. Also a shaft furnace built more slightly than the ordinary blast furnace, and usually of fire brick, hooped or cased with iron.
- Drift** - A horizontal passage underground. A drift follows the vein, as distinguished from a crosscut, which intersects it, or a level or gallery, which may do either.
- Incline** - A shaft not vertical; usually on the dip of a vein.

- Level - A horizontal passage or drift into or in a mine. It is customary to work mines by levels at regular intervals in depth, numbered in their order below the adit or drainage level, if there be one.
- Lode - Strictly a fissure in the country-rock filled with mineral; usually applied to metalliferous lodes. In general miners' usage, a lode, vein, or ledge is a tabular deposit of valuable mineral between definite boundaries. Whether it be a fissure formation or not is not always known, and does not affect the legal title under the United States Federal and local statutes and customs relative lodes. But it must not be a placer, i.e., it must consist of quartz or other rock in place and bearing valuable mineral.
- Patent - An instrument making a conveyance or grant of public lands. Title in fee, obtained by patent from the United States Government, when there has been done an equivalent of \$500 worth of work on or for each mining claim.
- Placer - A place where gold is obtained by washing; an alluvial or glacial deposit, as of sand or gravel, containing particles of gold or other valuable mineral. In the United States mining law, mineral deposits, not veins in place, are treated as placers, so far as locating, holding, and patenting are concerned. Various minerals besides metallic ores have been held to fall under this provision, but not coal, oil, or salt.
- Raise - A mine shaft driven from below upward; called also upraise, rise and riser. An opening, like a shaft, made in the back of a level to reach a level above.
- Shaft - An excavation of limited area compared with its depth, made for finding or mining ore or coal, raising water, ore, rock, or coal, hoisting and lowering men and material, or ventilating underground workings. The term is often specifically applied to approximately vertical shafts, as distinguished from an incline or inclined shaft.
- Sluice box - A wooden trough in which alluvial beds are washed for the recovery of gold or tinstone.
- Stamp - A heavy pestle raised by steam or other power for crushing ore. Those stamps in which the blow of the pestle is caused by its mere weight are called gravity stamps.
- Stope - An excavation from which the ore has been extracted, either above or below a level, in a series of steps. A variation of step. Usually applied to highly inclined or vertical veins. Frequently used incorrectly as a synonym of room, which is a wide working place in a flat mine.

Tailings - The parts, or a part, of any incoherent or fluid material separated as refuse, or separately treated as inferior in quality or value; leavings; remainders; dregs. In metallurgy, the part rejected in washing an ore that has passed through the screens of a stamp-mill; the worthless slimes left after the valuable portion has been separated by dressing or concentration. The sand, gravel and cobbles which pass through the sluices in hydraulic mining were formerly generally designated as tailings, but of late years, especially in State and United States legislative documents, they have been called "mining debris" or simply "debris."

Vein - An occurrence of ore, usually disseminated through a gangue, or veinstone, and having a more or less regular development in length, width, and depth. A vein and a lode are, in common usage, essentially the same thing, the former being rather the scientific, the latter the miners' name for it.

Winze - A vertical or inclined opening, or excavation, connecting two levels in a mine, differing from a raise only in construction. A winze is sunk underhand and a raise is put up overhand. When the connection is completed, and one is standing at the top, the opening is referred to as a winze, and when at the bottom, as a raise, or rise.

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