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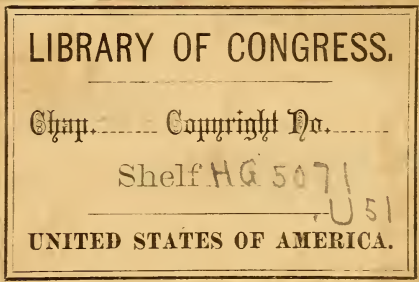
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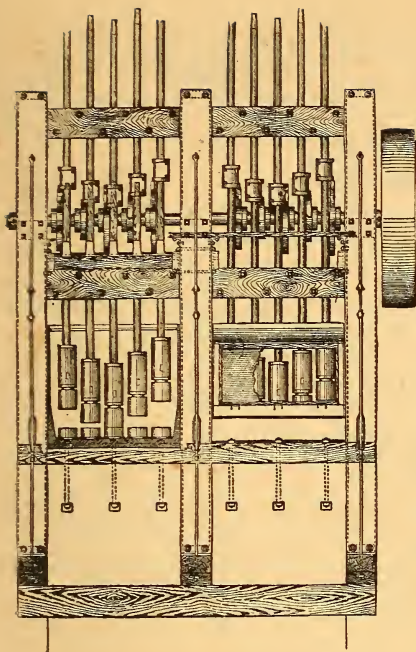
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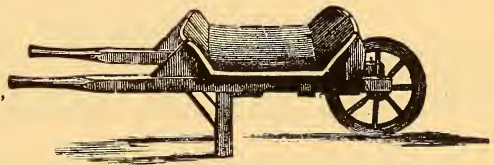
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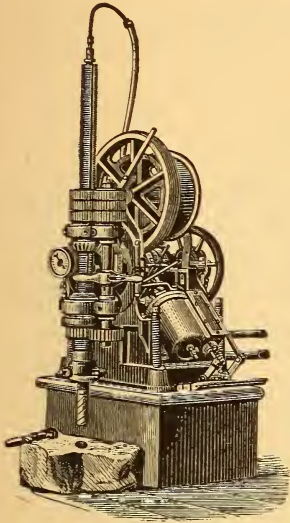
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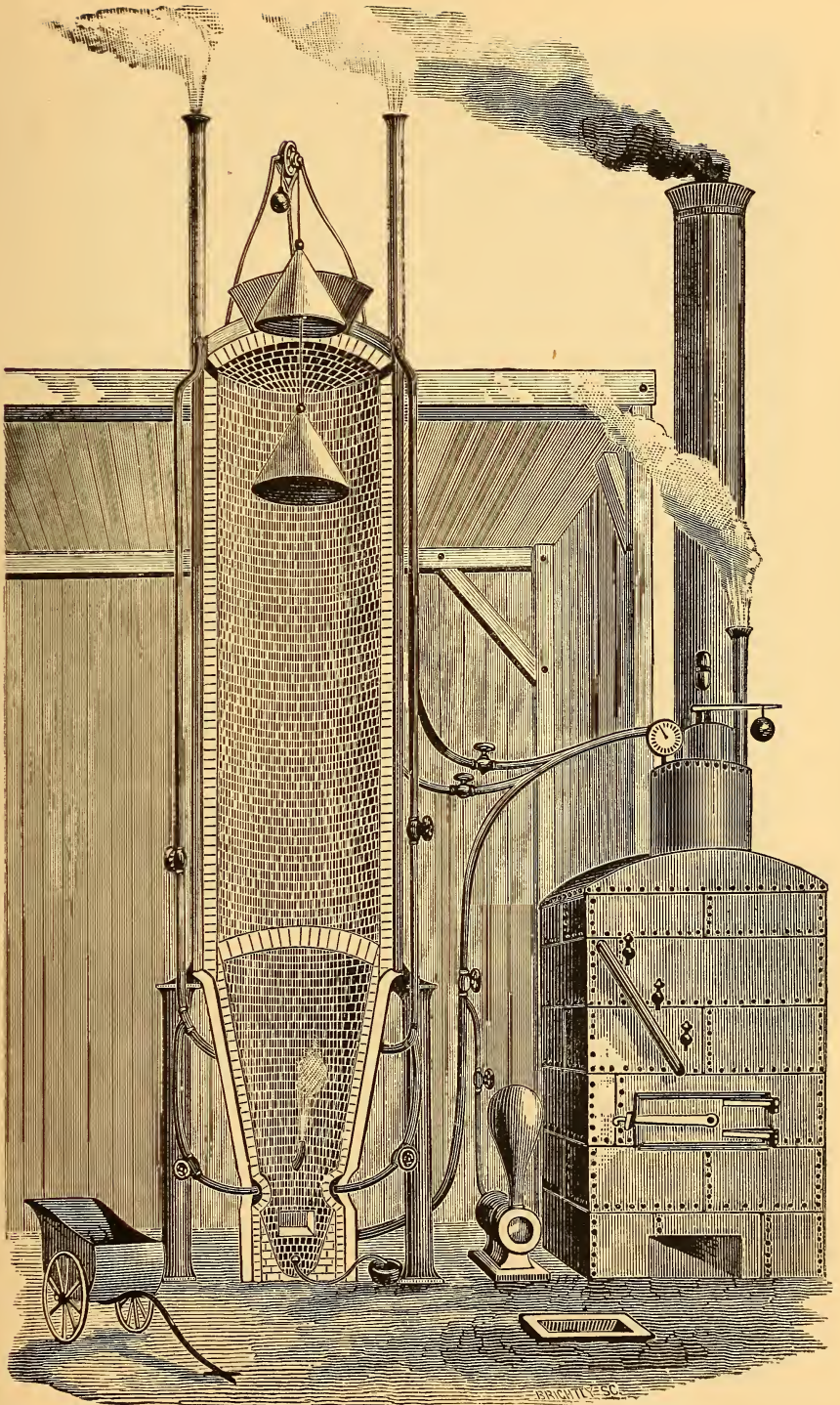
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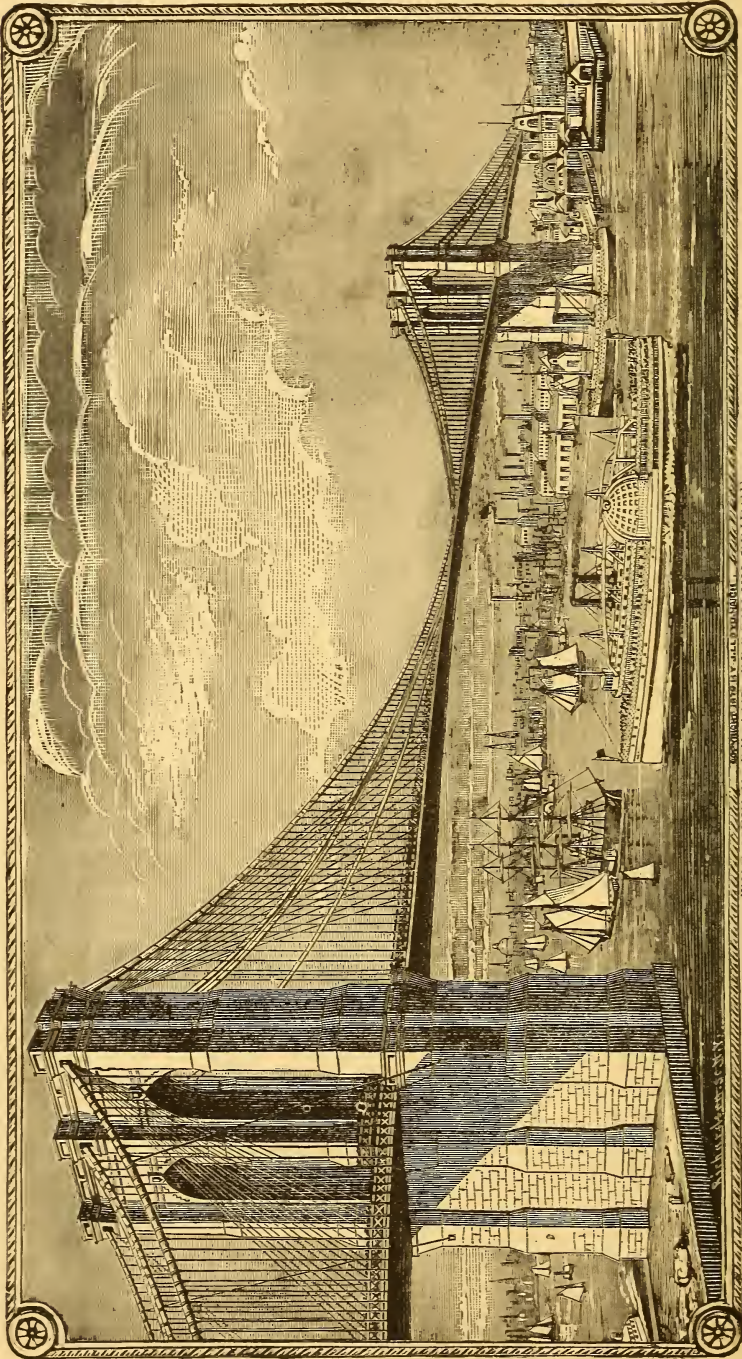


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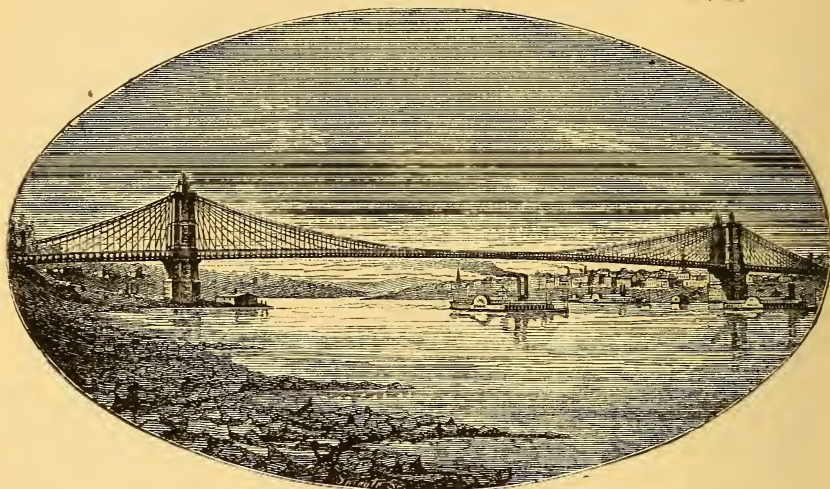
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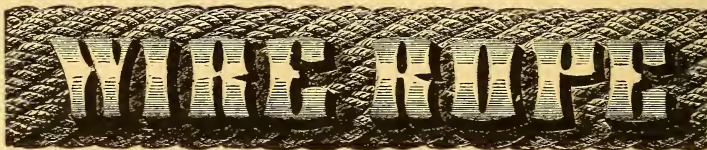


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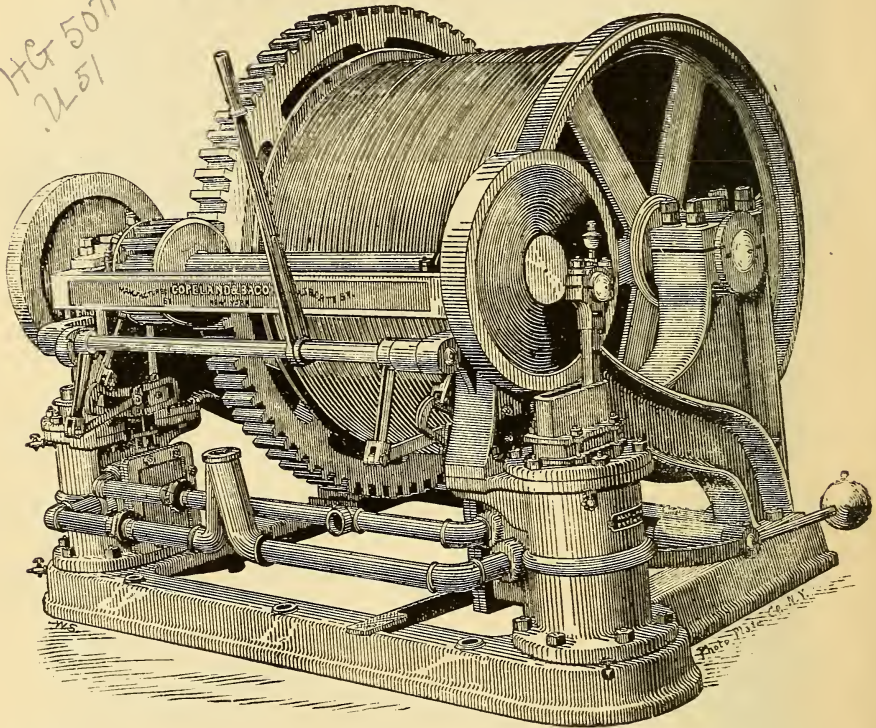
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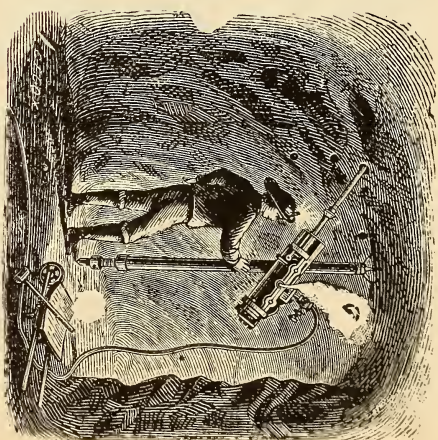
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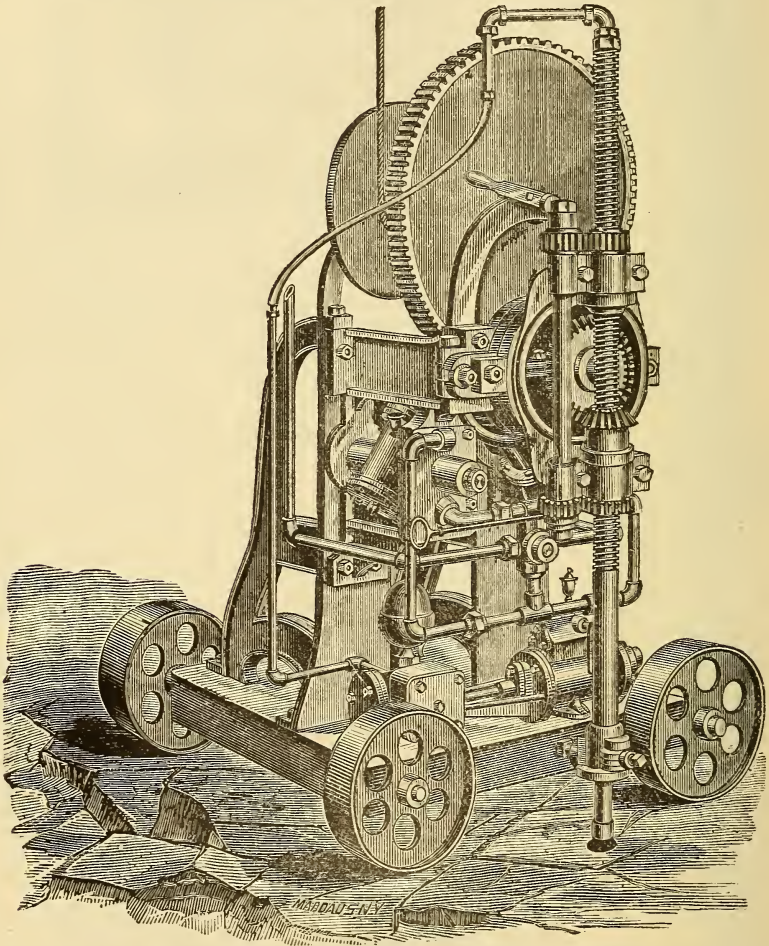
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
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 *THE UNITED STATES MINING REVIEW* for 1880 will be greatly enlarged and improved. It will be issued early in the coming year. It will contain copious statistics of Mines and Mining companies, together with all necessary information to make it a complete, comprehensive and trustworthy hand book of information to the Mining stockholder and investor.

Owners of Mines and officers of Mining companies (new and old) will favor the publishers by sending them copies of their published reports, names of officers, particulars as to assessments and dividends, and all other information which they may desire to give to the public.

The publication offices of *The Review* are at 16 Dey Street, New York City. Offices will also be opened in San Francisco.

PART I.
ATLANTIC COAST.

MINING AND STOCK DEALING.

At no period in the history of our country has public attention been so generally directed to mining for the precious metals as at the present time. At no period in the past has the bold pioneer been more generously rewarded for the hardships, exposures and dangers of prospecting mountain and canon, hillside and valley. From the frozen regions of Alaska, where the tall mountain peaks are for ever wrapped in snowy drapery, far away to Southern Arizona and New Mexico, where perpetual summer reigns—across the unexplored regions of Idaho Territory ; over the fertile valleys and fruitful orchards and vineyards of California ; along the rugged hillsides, over the gigantic mountains, through the wild deep gorges, and into the dark and dismal caverns of Nevada, Utah and Colorado, tapping with their picks at the door of earth's treasure chambers,—thousands and tens of thousands of fearless prospectors are now pushing their way in search of the precious metals, some destined to a rich inheritance ; some to grievous disappointment ; some to a lone and unmarked grave.

Science no longer plumes itself upon an indifference to wealth, but directs its intelligent and far-seeing eye into the bowels of the earth, and, by the principles of the earth's formation, and by laws more immutable than those of the Medes and Persians, shows what should be found here and what there ; what grand upheaval of nature formed this ledge, and by what surface indications are we to look for similar ledges elsewhere. Inventive genius, that has given to the world the sewing machine, the spinning jack, the cotton gin, and the thousands of other useful inventions in the industry and economy of nations, now turns its mind and energy to the safety cage, the force pump, the quartz-crushing mills, the pulverizer, the furnace, the Diamond, the Burleigh and the Ingersoll drills, to compressed air, the ventilation of deep mines, and to increased percentage in the working of ores. Chemical experiments are making that give fair promise, that before another year rolls away, every class of ore, refractory or otherwise, if honestly handled, will be made to yield ninety-five per cent of its assay value.

From all this the shrewd men of the United States, Europe and Asia naturally and correctly conclude that mining for the precious metals will be the great money-making business of the next twenty years. And they are wisely, and with all possible expedition, getting a foothold in some of the rich mining fields of the west. The intelligent capitalist reasons in this way : Legislation and the return to specie basis will undoubtedly cut down the profits in commercial banking ; the strict surveillance of savings institutions is an end to large dividends in that direction ; manufacturing—except in rare cases where a monopoly exists—hardly pays for the wear and tear of machinery ; mercantile business is precarious, and scarcely one in a hundred who engage therein, succeed ; farming is a dull, plodding business, and, although safer than almost any other occupation it is nevertheless safe to say that ten thousand barely make ends meet from year to year, to one that accumulates a fortune. There is more risk, perhaps, in mining than in most other branches of business ; yet the probabilities of acquiring a fortune are fully equal to any other kind of business, and the possibilities of becoming a millionaire a thousand, yes, ten thousand times greater. Intelligent capitalists are, therefore, investing a part of their funds where the probabilities are so fair and the possibilities so wonderful—not staking all in one venture, nor in one district, but putting a thousand here, and a few thousand there, so that, one failing, all may not be lost, and one succeeding, a fortune is secured.

To the casual or surface observer of mining enterprise on the Pacific Coast, there is much to discourage investment. Take, for instance, the mines listed upon the San Francisco Stock and Exchange Board. Out of the list of two hundred and fifty companies, only a half dozen are paying dividends at the present time, and not over twenty have ever returned a dollar to stockholders. All the others are assessment-levying mines ; or, in Western parlance,

declare their regular "Irish dividends" every three or four months. This is true, and if it were the "whole truth," certainly the aspect of mining affairs would be decidedly unfavorable. But such is far from being the "whole truth." On the contrary, it is a fact that there are over two hundred dividend-paying mines in California alone; and besides these two hundred dividend-paying close corporations, there are over two thousand mines owned by individuals or firms, that are paying regular monthly or clean-up dividends, and enriching their owners to an almost fabulous extent. More than all this, there are no less than twenty thousand Chinamen scattered over the hillsides, along the ravines and the dead-river beds, washing with pan, rocker, long-tom and sluice race, the gravel and sand previously washed by the pioneers in the days of '49. These Chinamen are earning from twenty-five cents to five dollars a day, with an occasional pocket-find rich enough to make the Mongolian cue stand on end. When the general public understand the whole truth of the matter, they will look upon Pacific Coast mining enterprises with greater confidence and respect.

"Irish dividends" seem to be the great terror of dealers in mining securities. Let us contrast mining enterprises with other kinds of business, and see wherein lies the difference in the matter of levying assessments. Five or six gentlemen purchase a mining claim for ten, twenty, fifty, or perhaps a hundred thousand dollars. They incorporate the mine, and sell off a part of the stock at from one to three dollars a share, thus receiving a part of their money back. New purchasers become partners in the enterprise, with all the rights and privileges, and with equal responsibilities, of the original holders. Does any intelligent purchaser suppose that from this simple sowing he is to reap a harvest? Does he suppose that there shall spring up from the ledge stalks of quartzite matter that, without further labor, shall yield golden ears of corn? On the contrary, does he not know that to make the property valuable and productive, hoisting works must be erected, a shaft sunk and timbered, powerful pumps built and put in, thousands of dollars expended in materials for the prosecution of the work, tools, powder, nitro-glycerine, candles, ice, etc., and thousands more paid for labor? Hence, assessments until the property is developed. Mining incorporations on the Pacific Coast are usually organized with a capital stock of \$10,000,000 divided into 100,000 shares of the par value of \$100 each. If the venture proves to be a mine in fact, the stock is well worth its face. If the ledge pinches out or proves to be barren, the more wide-spread the stock the less the loss by any one individual. The cost of opening a mine is so great, and the risk of failure so largely in excess of the probabilities of success, that no single individual will hazard his fortune in the undertaking. It is only by the organization of stock companies, and the floating of the stock, that a combination of capital can be secured; and it is in this way that nearly all of the great mines of the Pacific Coast have been opened up and developed. Nearly all of the dividend-paying close corporations had, at some time in their history, their stock on the market. When the "strike" was made, a few rich insiders quietly took in the floating stock, and thenceforward the mine virtually sank out of sight, although producing millions of bullion annually. The San Francisco Stock and Exchange Board, although it may have worked great havoc and hardship in individual cases, has, nevertheless been the cradle of Pacific Coast mining, and has placed the mining interests of the Coast at least ten years ahead of where it would have been had the Board not existed.

Now let us compare the opening and development of a mine with the inauguration and carrying out of other material enterprises. And as farming is considered the most legitimate of all industries we will make our comparison of mining with the cultivation of the soil. We will not take you to the wooded regions of the Middle States, where six or eight years of hard labor is required to clear your land of trees and stumps, but to chosen spots in prairie land, where nature has done all she could to assist in the enterprise. Do you expect to open and work your farm without assessments? It does not matter whether the enterprise be of a private character, or an open or a close corporation. Money must be raised to purchase the land, the same as to purchase a mine. Are you through then, and will you sit down and wait for dividends, as a great many people seem to think they ought to do in mining ventures? You don't do anything of the kind. You levy an assessment to fence your land, to plough it, to seed it, to cultivate it, to harvest the crop, and finally to market

the product. You run the risk of drouth—too much rain, or none at all ; of rust ; of mildew ; of grasshoppers ; of storms that shall flatten your fields ; of fire that may sweep away everything in a single night ; of the insidious weevil that inhabits nearly every warehouse. And then, if it so happens that Europe and Asia, and other parts of our own country have produced average crops, and no great wars are in progress in any part of the world, you find, after your product has passed through the hands of the railroad companies and middlemen, that you have cleared about enough for the next year's planting ; with the additional risk that murrain, sheep rot, hog cholera and equine-pneumonia will sweep away a large part of your stock before the year has passed. This is no overdrawn picture, as thousands of farmers in Illinois, Iowa, Minnesota, Kansas and Nebraska will bear witness. And is it not equally true that in the establishment of all other enterprises, whether it be railroading or navigation, merchandizing or manufacturing, the levying of assessments is an absolute necessity, while the risks are innumerable. And it is unjust and unbusiness-like to suppose that mining enterprises, by which so many thousands of people have been made rich and independent, and which promises such grand results in the future, should be carried out without assessments and without risks.

That great frauds have been committed in stock manipulation and mining management, is a disgraceful truth. That there are rich scoundrels walking California, Montgomery, Pine and Leidesdorff streets, in San Francisco, to-day, who, if justice should be meted out, would be the tenants of felons' cells in San Quentin, or hewing stone for the Folsom branch prison, is known to everybody. Thieves, robbers, cut-throats, confidence operators, betrayers of innocence—they still ply their vocation, while Justice sleeps. Shrewd, intelligent men are now, however, seldom caught in their traps. It is upon the distant operator, the country merchant, the mechanic, the laborer, the chamber-maid, the boot-black, the stable-boy, that they live and thrive. Bad, however, as the moral atmosphere must be in a community where such dastardly wretches are allowed to live and riot in their ill-gotten gains, is it not true that evils of an equally aggravating character exist by permit of the people imposed upon, in every part of the country, and in every branch of business? How many houses are there on Fifth Avenue and in other aristocratic parts of New York city, whose owners are rolling in wealth acquired by the manipulation of railroad securities, the manufacture of shoddy goods, and the adulteration of food and drink? "Acquired by Trade Frauds!" should be written over the doors of thousands of aristocratic mansions, not only in New York city, but in all the cities and towns that lie between the two oceans.

One of the notable features of stock speculation and public swindling on the Pacific Coast, through which Eastern people or those unfamiliar with the lay of the land are systematically gulled, is the prolific brood of wild-cats that are born full-haired and long-clawed immediately upon the discovery of a new ore-body on the Comstock. Every claim within five or six miles of the mine in which the new discovery is made, is at once, by false maps and charts, and printed misrepresentations, moved into the immediate vicinity of the supposed bonanza, and thousands of shares of utterly worthless stock thus floated upon the market. The New York, Boston and Chicago victims find relief in bitterly cursing the entire mining management of the Coast, while the blame is entirely in their own careless investigation. If the Boston, Philadelphia or Baltimore merchant purchased goods in the same hap-hazard manner that they and the Eastern public generally purchase mining shares, they would have no greater success in merchandizing than they have thus far had in stock dealing. But you will say that the people of San Francisco and Virginia City are caught and singed quite as often, and perhaps more severely, than the people of the East. Quite true. And it might be added that there are probably more fools in those two cities than exist on the same amount of territory in any part of the habitable globe. For the small operators of San Francisco and Virginia City deal entirely upon "points," and it has been demonstrated over and over again that the only safe thing to do is to "copper" a "point" if you expect to win. There are about five hundred curb-stone sharks in San Francisco, who move their quarters weekly or monthly from boarding-house to boarding-house, and from the first floor front to the attic rear of lodging-houses, whose precarious existence depends entirely upon their ability to gain the confidence and rope into worthless stocks, landladies,

chambermaids, and other half-fledged game that come to their acquaintance. It is not, however, right or just that the sins of these vultures that prey upon society, nor the crimes of wild-cat manipulators, should be visited upon the entire mining management of the Coast, no more than that Trinity Church should be held accountable for the Black Fridays of Wall street, and the thieving and wholesale plundering that takes place under the shadow of her sacred spire.

Another notable feature in stock speculation on the Pacific coast is the unlimited sway of the Bonanza Kings—wielding a power so potent that stocks go up and down at their beck and nod, without regard to development or merit. Up to the time of the death of Mr. Ralston, and the introduction into the Bank of California of the conservative policy of D. O. Mills, there were two great moneyed powers on the coast, each endeavoring to compass the other. Monetary fights for the control of mines and mining companies were of frequent occurrence—stocks rose and fell with marvellous alacrity, and the “boys” got in their work in handsome style. Besides these two great powers, there were a number of other combinations wielding enviable sway. Senator Jones and his friends controlled a number of valuable mines. George Schultz & Co. held the destiny of Justice, Bullion and Exchequer in their hands. The Cook Brothers, “Bob” Graves and Colonel Derby, were a strong company, and held the control of valuable properties. “Lucky” Baldwin belonged to the Bank crowd, and when the Bank failed Baldwin went to building hotels, theatres, market-houses, and to the laying out of forty or fifty magnificent farms in Los Angeles county. George Schultz lost Justice and with it his prestige as a mining manipulator. The Cooks preferred to be kings in Bodie rather than subjects in Virginia City. The Bonanza kings rule with sway undisputed and power uncontested. The masterly mining and engineering ability of John W. Mackay and Colonel James G. Fair is directed solely to keeping the public entirely in the dark in regard to the condition of the mines as ascertained by the diamond drill; and the financial sagacity of Mr. James C. Flood consists entirely in his not letting the left hand know what the right hand is doing, or proposes to do. As the firm hold all the winning cards, it must be evident to the stock dealer that guessing experts are more profitable counsel than mining experts, wherewith to determine whether to “go long” or “short.” That the Bonanza kings have confidence in the future of the Comstock lode is evidenced by the fact that they seem determined to own or control everything from Utah to the Devil’s Gate. And from present appearances it seems to be only a question of time when their aims will be fully accomplished.

The morality of stock dealing is no longer questioned in intelligent business circles. The term “gambling” is now seldom applied to commercial transactions of this character, and never used except by those ignorant of the principles underlying and governing the business. These principles are the same as those governing transactions in real estate, lumber, pork or grain. Reckless speculation in any one of them may transform the operator into a millionaire or a beggar, according to the good or ill luck that attends him.

Two things are essential to successful stock dealing: First, to ascertain if the company’s ground lies upon a well-defined mineral belt or lode, and of what character; second, to know if the managing directors are honest, reliable and capable. These two facts being satisfactorily established, it only remains for the dealer to closely watch the movements of the stock, and as nearly as possible ascertain who is dealing it out and who is taking it in. By thus closely watching the movements of the stock the dealer is almost certain to come into the earliest knowledge of the formation of a pool. When he finds that 80,000 shares of the stock are locked up, and that the management through their brokers and friends are quietly taking in the floating 20,000 shares, it is safe for him to purchase a block of the stock, confident of a sharp rise before the pool unloads. If he finds that the members of the pool have the reputation of possessing good staying qualities, he can hold on to his shares until top figures are reached. But if, on the contrary, some of the members have the reputation of being weak in the backbone and elastic in their moral principles, then it were safer to make an early clean up. For it sometimes happens that one portion of a pool will unload to the other portion. The ruling passion among mining stock manipulators and dealers in San Francisco seems to be to get ahead of each other; and this passion is strong unto death. An old operator was

lying upon his death-bed, in an aristocratic part of the city. His friends gathered around, and, weepingly, asked him if there was anything he wished to say before he died, or anything he might wish done after he had passed in his checks. The old man raised himself a little, and in a squeaking voice, but with a self-satisfied air, replied: "I guess not; I have been on California street for twenty years, and I think during that time I have *bested* about as many as have *bested me!* I die content!"

As a general rule the shares of a dividend-paying mine, are not a good investment. There is little or no speculation in a dividend-paying mine. As long as the regular disbursement continues, the price of the shares does not materially vary. When the mine, however, passes its dividend, then a panic is almost certain to ensue, and the stock very often goes clear out of sight. Very few, if any, of the dividend-paying mines, the stock of which is on the market, have ever returned to stockholders two-thirds of what the shares cost them. The better plan is to go into a stock where an honest management is squarely and expeditiously opening and developing the mine, and then if the company makes a strike you have secured a fortune. Nor does it follow that because a mine has magnificent hoisting works, and a shaft two thousand feet deep, that it is, therefore, a better buy than its neighbor, which has neither shaft nor hoisting works, pumps, or anything else. Because, it must be remembered that it costs a great deal of money to build and maintain the machinery of a mine; whereas, mines like the Alpha and Exchequer can be prospected by drifts from the Bullion and Consolidated Imperial, at a small outlay. So the Ward by a drift from the Julia; Mexican from the Ophir, and Union Consolidated from North Consolidated, Virginia.

The custom of buying mining stocks on margin is attended with a great deal of risk, yet operators frequently find it to their interest to thus double their capital. It is, however, an excellent thing for the broker. For instance, a customer orders 100 Sierra Nevada at \$30. He deposits \$1,500, the margin being 50 per cent. The broker charges $\frac{1}{4}$ per cent for the purchase (\$7.50) and $\frac{1}{2}$ per cent for the \$1,500 unpaid (\$22.50.) He takes the stock to the Bank of Nevada, and it advances him \$20 a share, at $\frac{3}{4}$ per cent, or \$2000 for \$15. Thus the broker gets \$7.50 commission, \$7.50 advantage in interest, and has \$500 interest free to speculate with. And this on a comparatively insignificant transaction.

The officers of the New York Mining Board deserve great credit for the efforts they have made to keep their lists free from wild-cats.

NEW YORK'S OPPORTUNITY.

The City of New York, commercially and financially, stands second to but one other city in the world. And in the magnitude of stock speculation and daring transactions in National and State Bonds, Railroad Securities, and Bank and Insurance Stocks, it is pre-eminently without a rival. The operations on the Royal Exchange of London, the Paris Bourse, and the New York Exchange, affect the commerce and the business of the entire globe. There is, however, a daring impetuosity, a bold speculative passion, a fever of excitement that finds vent in schemes and ventures so wild and of such a colossal nature, that the brain grows dizzy in their contemplation, on the New York Exchange, entirely foreign to the more conservative Boards of Europe. Millions are made and lost in a single day, and plans for the making of millions more concocted on the following night. Not one in a thousand of the successful operators thinks of retiring with a fortune. On the contrary, each successful venture but inspires him to new and grander operations; and the fever is seldom allayed until the heart ceases to beat.

It is strange, however, that the city of New York, with its millions of capital lying idle, and its thousands of shrewd, far-seeing capitalists, business men, brokers and stock operators, should have so long remained indifferent to one of the leading interests and industries

of the United States. Mining for the precious metals has assumed such vast proportions, and the bullion product has reached such a seemingly fabulous amount, that the attention of nations and individuals in all parts of the world has been arrested, and the people living on the mineral belts are themselves amazed.

There are more stamps, furnaces, picks, shovels, pans, rockers, long toms and hydraulic nozzles at work in California to-day than at any previous period in the history of the Golden State. Of the many prosperous camps in the State, Bodie takes the lead. It is situated in Mono County, within a few miles of the Nevada State line, and at an elevation of about 10,000 feet above the level of the sea. Although a comparatively new camp, already six or seven thousand miners have congregated on the side of the mountain, and the work of prospecting is being rapidly pushed forward on all sides. A number of valuable bullion-producing mines have already been opened, and hundreds of others, with prospects equally as fair, are in various stages of development. It is demonstrated beyond all question that an inexhaustible body of ore lies in the mountain, and the future of Bodie is well established. Another important California mining camp is on the side of the Kearsarge Mountain, in Inyo County. The Rex Montis and Independence Companies, both under excellent management, are developing the mines by a series of tunnels, the first being pushed into the side of the mountain at an elevation of 12,500 feet; and others at distances of 200 feet, each below the other. This system of development is not only expeditious but economical, as no hoisting or pumping machinery is required. The ore extracted is being crushed by the Davis Pulverizer. Both Ingersoll and Burleigh drills are being used in the tunnels. Very favorable reports may be expected from this district during the present season. The quartz and placer mines of Amador, Calaveras, El Dorado, Klamath, Mariposa, Nevada, Placer and Tuolumne counties, give most favorable indications of increasing yield and inexhaustible supply.

The various mining camps of Nevada, although not producing bullion to the same extent as in the past few years, nevertheless give promise of great future prosperity. The Comstock mines, lying upon the eastern side of Mt. Davidson and south of the adjacent hills, have produced and paid to stockholders, and for machinery, labor and supplies, fully two hundred and fifty million dollars. Vast as this sum appears, it is the opinion of the best local and government mining engineers, and of prominent superintendents who have been identified with the Comstock from its discovery, that the yield in the future will be far in excess of the past. It is claimed, and by the highest authority, that there are three great deposits of ore now being uncovered on the Comstock, and that a combination exists between their managements to open the ore bodies simultaneously, and thus bring back the old prestige of the district. Be this as it may, it is a fact unquestioned by any one familiar with the underground of the Comstock, that there is enough pay-ore in sight to keep the mills running for the next five years, although a large portion of the ore is of not so high a grade as that extracted during the last three years. The theory of the old miners of the Comstock is that there is but one fissure or lode, and that it extends from Utah on the north, around the base of Cedar Hill and the side of Mt. Davidson, down to the Devil's Gate, near Silver City, with a branch on the Divide between Virginia City and Gold Hill, leading off in the direction of the American Flat District. There are many advocates of a plurality of ledges, but as yet they have found no consolation in underground developments, or in court decisions. Nevertheless, chains of mines have been located east of the fissure and for six miles over the hills and down the six-mile cañon. It is reported, but not officially, that the Sutro Tunnel cut through five distinct ledges of low grade ore, each ledge having clearly-defined walls and giving off a large supply of water. If this be true, it is probable that some of the "east country" property may be more valuable than at present supposed to be. Altogether the outlook for the Virginia City Camp is very favorable. The various districts in Esmeralda County give excellent promise for the future. Some valuable mines are being opened in the vicinity of the Northern Belle, in the Columbus district, and the camp at Aurora, which ten or twelve years ago produced some \$2,000,000, and was then deserted, has again come to the front and is in high favor. The Eureka and Cortez districts, in Eureka County, are producing large quantities of bullion monthly. Developments are

also in progress, with every prospect of satisfactory results, in White Pine, Nye, Lyon and Lincoln counties.

From Idaho the reports are not so favorable. The frauds perpetrated by the leading management of the mines of the Territory, a few years ago, by which Mahogany, Silver Cord, Ida Elmore, South Chariot, War Eagle and other valuable properties, were swamped and ruined, and the stockholders outrageously swindled, so disgusted the public that it has since been impossible to enlist capital in Idaho ventures. There are valuable mines in the Owyhee district, and the Silver City Camp may revive at no distant day.

The reports from Utah are of a character that justifies the prediction that for many years this territory will stand hardly second to any in its bullion product. At Little Cottonwood the Lady Emma, which gave our English cousins so much uneasiness and produced no end of unpleasantness, is again coming to the front, and under its present judicious management (Trenor W. Park), will soon prove itself a mine of wealth. In the same district is the English Flagstaff, paying handsome dividends; and just over the crest of the range in the direction of Big Cottonwood, the Walker Brothers, of Salt Lake City, have a mine of almost fabulous richness. At Parley's Park, about ten miles from Little Cottonwood, and twenty-five miles from Salt Lake City, is the great bullion-producing Ontario, which disburses regular monthly dividends. In its vicinity are other mines in various stages of development. At Bingham Canyon the Telegraph mine is producing its regular supplies of bullion, and many other mines are being opened. In the southern portion of the Territory, in what is known as the 'Frisco district, some wonderfully rich mines have lately been opened, one of which, the Horn Silver, is valued at over five million dollars. One-half of this mine was lately sold to Eastern parties for two-and-a-half millions, the sale involving the extension, early this summer, to the district of the Southern Utah Railroad. For some unaccountable reason the Mormon dispensation prohibited its disciples from prospecting for the precious metals; but this prohibition having been removed after the death of President Young, prospecting began in earnest, and Saint and Gentile now vie with each other in searching for ledges and deposits.

Dakota has stepped forward into the list of bullion-producing Territories, and a number of valuable mines have recently been opened. The most prominent of these is the Homestake, located at Deadwood, in the Black Hills. It has an 80-stamp mill, and will have a new 120-stamp mill soon completed, with powerful hoisting and pumping machinery. It pays a regular monthly dividend to stockholders, and from present indications will continue so to do for years to come. The Territory, in point of mining has a promising future.

In Colorado public interest seems to centre in Leadville, and the greatest possible excitement prevails. The ore-body lies far up the side of the Rocky Mountains, and whether it be proper to call it a ledge or a deposit is a question that seems to puzzle even the courts. The ore-body at Leadville lies differently in the earth from any deposit hitherto discovered on the face of the globe, being almost in a horizontal position. It upsets all the theories of the formation of mineral lodes heretofore presented by geologists and scientists. It confirms, however, the theory advanced in the second part of the work, pages 135 and 136, and leaves no doubt in the editor's mind but that it is simply a mineral lode undisturbed by volcanic, earthquake or other upheaval of nature. The camp has already a population of about 15,000. There are hundreds of other prosperous camps in Colorado, and the State is destined to be a liberal bullion-producer.

Many rich discoveries having been made in Montana during last summer, thousands of miners are only waiting for the melting of the snows, so that prospecting shall be possible, to take up their line of march for that comparatively unexplored region.

Probably no other district in the United States offers so great inducements to the prospector, miner, or capitalists, as does the territory of Arizona. The great silver belt of Arizona extends from the Mexican line in the South Eastern portion of the territory, north to the great bend of the Colorado River, and embraces the chains of hills and mountains lying in the counties of Yavapai, Pima, Maricopa, Pinal and Mojave. Many rich mines have been opened, and are being worked to immense profit. Hundreds of companies have been organ-

ized and incorporated, and the work of development commenced. And thousands of claims have been located and recorded. The ore in some localities is of fabulous richness, and along the entire belt the supply seems to be inexhaustible. The principal districts in Yavapai county, is the Peck, in which the celebrated Peck and Black Warrior mines are located, and the Tiger, in which the Tiger is located. In Maricopa and Pinal counties the principal camps are the Pioneer and Globe, in the former of which the Great Silver King mine has already produced several millions, and in the latter is located the well known Stonewall Jackson, Isabella, Little Mac, Rob't E. Lee, Mexican and Champion mines. In Pima county, the leading district is the celebrated Tombstone, 70 miles south east of Tucson and within 15 miles of the survey of the Southern Pacific Railroad. This is one of the richest mineral districts in the world, and, although of recent discovery has already a large number of bullion-producing mines, including the Tough-nut, Contention, Grand Central, Headlight, Uncle Sam, Merrimac, now fully developed, and many others that will pay to work from the croppings down. The ore is free-milling, and averages about \$200 per ton. The other districts in Pima county are the Aztec, where is located the St. Louis mine; the Tyndall, with the Bushell; the Oro Blanco, which boasts the Idaho Con. owned in Philadelphia; the Santa Rita, with the Aravacca mine; the Pima, having the promising San Xavier mine and the great Calabasas consolidation. The metalliferous regions of Arizona may be summed up as containing nearly 19,000 square miles, or 12,160,000 acres. This large area contains every description of metals known to exist among primitive rocks, and in such abundance, at least so far as surface indications show, as to be beyond comprehension.

Several of the Southern or Atlantic Coast States are stepping forward as bullion producers, and important discoveries and strikes are reported in the mineral fields of Virginia, North Carolina, and Georgia.

From the foregoing brief review, it will be seen that the mining interest is the most important and promising of all our industries, and that it is comparatively in its infancy.

Shall New York City become the great reservoir into which shall flow the vast products of these mineral fields? Shall New York capitalists, bankers, brokers and manufacturers, regulate this mighty industry and make it tributary to the city's greatness and prosperity, and to their personal aggrandizement? Shall New York manufacturers build the machinery that shall disembowel the mountains and crush or smelt the ores of the rich mineral fields of the South and West? Shall the enterprising people of New York own the controlling interest in the grand list of mines now being developed all over the Pacific Coast States and Territories—shall their general offices be located here—shall their supplies be purchased in this market—shall the idle capital of the East and Europe flow to this city for investment in mines and mining stocks? These are the paramount questions of the hour. These are the considerations which called into existence the Bullion Club, the New York Mining Board, and which to-day force themselves upon the attention of the old and powerful New York Exchange.

The telegraph annihilates distance.

Shall the great commercial and financial center of the United States make the prices of the stocks in which its people deal, or shall they continue at the mercy of San Francisco manipulations? The opportunity is presented. Shall it be embraced?

DICTIONARY OF MINING TERMS.

The following definitions of Mining Terms and phrases in common use in the mining camps of the Pacific coast are given by Dr. HENRY DE GROOT, an old "forty-niner," a mining-engineer and expert of acknowledged ability, and one of the best mining writers on the Pacific coast:

ADIT.—A tunnel.

ALLUVIUM.—A deposit of soil formed by the action of water.

- AMALGAM.**—Quicksilver and other metals, usually gold or silver, and sometimes both combined.
- ARRASTRA.**—A Spanish-Mexican ore-reducing machine, consisting of a hard circular platform upon which the ore is deposited, the crushing being by means of a revolving sweep to which huge flat stones are attached.
- BEDROCK.**—The bed of a metalliferous deposit, commonly applied to the slate underlying auriferous gravel.
- BLIND LODE.**—One that shows no surface croppings.
- BONANZA.**—A Spanish term, signifying a large and rich ore-body.
- BOULDERS.**—Huge rocks, weighing from a few hundred pounds to twenty tons, that by the force of water have been carried along the river-beds until the sharp edges are worn away, and they are as smooth as pebbles.
- BREASTING.**—Taking ore from the face of a mine.
- BULLION.**—Gold and silver uncoined and unmanufactured.
- CAGE.**—The elevator used for hoisting and lowering the ore-cars, men and materials of a mine.
- CAP-ROCK.**—The formation overlaying the pay-dirt or ore.
- CARBONIFEROUS.**—Containing coal.
- CHISPA.**—Spanish for nugget; a lump or mass of solid gold
- CHUTE.**—An incline from one level to another through which to slide ore.
- CONGLOMERATE.**—Pudding-stone, composed of gravel and pebbles cemented together.
- CONTACT LODES.**—Intervening veins, or those lying between two different kinds of rock, as for example, slate and porphyry.
- CROPPINGS.**—Ledge matter lying upon the surface, or the out-croppings of a vein.
- CROSS-CUT.**—A drift run at right-angles with the ledge for the purpose of ascertaining its width and to otherwise prospect it.
- CUPRIFEROUS.**—Containing copper.
- DEBRIS.**—Sediment from hydraulic or other mines; masses of rock and other materials detached from the sides of mountains and piled up below.
- DENUDATION.**—Rocks laid bare by running water or other agencies.
- DEPOSIT.**—A body of ore distinct from a ledge; a pocket of gravel or pay-dirt.
- DETRITUS.**—A mass of substances worn from solid bodies by attrition, and reduced to small particles.
- DISINTEGRATED.**—Separated into integrant parts without chemical action.
- DRIFTS.**—Tunnels leading off from the main shaft or from other tunnels.
- DRIFT-MATTER.**—Earth, pebbles and boulders that have been drifted by water and deposited over a country while submerged.
- DUMP.**—The place where ore is deposited after being taken from a mine.
- FACE.**—The extreme end of a tunnel, drift or excavation, where work is prosecuted.
- FIND.**—A valuable discovery of ore or metal.
- FLOAT-ROCK.**—Fragments of a lode that have been floated by water or carried down by other means, and left on or near the surface; ledges are sometimes formed by tracing up the "float."
- FLUME.**—Boxing or piping for conveying water.
- FLUVIATILE.**—Formed by or belonging to rivers.
- FLUX.**—Any substance employed to promote the fusion of minerals.
- FOSSILS.**—Petrified organic remains.
- FOOT-WALL.**—The lower wall or side of a vein.
- GANGUE.**—The matrix. Quartz is commonly called the gangue rock of gold and silver ores.
- GIRAFFE.**—The cages used for running on an incline.
- GRIZZLY.**—Bars set in a flume in hydraulic mining, to screen out the large stones. It derived its name from the dexterous manner in which the grizzly bear casts aside the rocks hurled at him.
- GULCH.**—A ravine.

- HANGING WALL**—The upper wall. The rock resting on the vein.
- HORSE**—A mass of wall rock or other barren matter, obtruding into an ore-bearing lode or fissure.
- INCLINE**—A slanting shaft.
- INCH OF WATER**—About $2\frac{1}{2}$ cubic feet per minute—the water that will run out of an opening one inch square, or section under head of six inches.
- JUMPING A CLAIM**—Taking illegal possession of a mine by force or otherwise.
- LACUSTINE**—Pertaining to lakes or swamps.
- LAMINA**—A thin scale, layer or coat.
- LAVA**—Melted rocks and minerals ejected from volcanoes.
- LEVEL**—Drifts from the main shaft, usually run on the ore body at distances of fifty to one hundred feet.
- LEDGE**—Synonymous with lode or vein.
- LITTLE GIANT**—A movable nozzle attached to hydraulic pipes.
- LOCATE**—The procedure whereby a possessory right is established to a mining claim is called locating the same, the property so secured being designated a claim or location. This method of procedure is under the Spanish law called *denouncing* a mine.
- LODE**—A longitudinal fissure or chasm filled with ore-bearing matter and having well-defined side walls. In our mining parlance, lode, lead, vein and ledge are synonymous terms.
- MICA**—A shining mineral of various colors, and capable of being split into thin parts, sometimes mistaken for gold.
- OPAQUE**—Not transparent.
- PETERING**—The pinching or giving out of an ore body.
- PIPING**—Washing gravel in a hydraulic claim by discharging water upon it through a nozzle.
- PLACER**—Alluvial deposits. Earth containing deposits of gold dust.
- PLATEAU**—A plain or flat surface.
- PORPHYRY**—A barren, unstratified, reddish, purple or greenish rock, in which are imbedded crystals.
- PRIMARY OR PRIMITIVE ROCKS**—Consist of the various kinds of slate, quartz, serpentine, granite and gneiss. They are the lowest group of rocks, are irregularly crystallized and contain few animal relics.
- PROSPECTING**—Hunting for mineral lodes or placers.
- PULP**—Pulverized ore in the lixiviation process.
- QUARTZ**—A silicious rock occurring in glassy crystals and forming a part of nearly all rocks; pure flint. Quartzite containing no valuable mineral is by the miners called “bastard quartz.”
- REDUCING**—Separating from foreign substances. The reduction of ores consists in extracting from them the metals they contain.
- REGULUS**—The impure metal. Melted ore containing all its metallic ingredients.
- SALTING A MINE**—The act of introducing rich ores into a mine, or gold dust into a claim, for deceptive purposes.
- SCHIST**—Clay slate.
- SECONDARY ROCKS**—Those above the primary, and below the tertiary; made up chiefly of sand, clay, and pebbles cemented together, and contain many organic remains. They consist principally of chalk, green sand, clay, limestone, marl, sandstone, &c.
- SHAFT**—A vertical, or incline excavation for prospecting, or working mines.
- SLAG**—Scum, dross, the excrement of a metal; vitrified cinders.
- SLUICES**—Boxes, or troughs through which gold-bearing gravel is washed.
- STOPING**—Breaking down ore from the roof of a tunnel or ore chamber. Ore stopes are the same as ore breasts, except that the former means the ore over head, the latter in front or on the sides.
- STRATA**—A flat bed or layer of rock, earth, mineral, &c.

- STRIKE.**—A find. A valuable mineral development made in a sudden or unexpected manner.
- SULPHURET.**—Combination of sulphur with a metallic earthy or alkaline base.
- SUMP.**—A pit sunk in the bottom of a mine to collect the water.
- SUPERFICIAL DEPOSITS.**—Are composed of such metals and ores as lie on or near the surface, intermixed with soil, sand, gravel, etc. They are also called washings or stream works, these metals and ores being gathered by washing with water. Much gold, all platina, and some tin and cinnabar, are collected in this manner.
- TAILINGS.**—The auriferous earth that has once been washed and deprived of the greater portion of the gold it contained. This term is also applied to the sulphurets and slimes that escape from the ore mills.
- TERTIARY ROCKS.**—Those lying above the secondary and below drift, containing sandstone, clay-beds, limestone, green sand, gypsum, rock salt, lignite, etc., with animal relics.
- UPRAISE.**—Running a drift upwards.
- WINZE.**—A shaft connecting one drift or level with another, but not reaching to the surface.

THE BULLION CLUB.

The Bullion Club, of New York, was organized during the month of November, 1878. Its purpose was to forward legitimate precious metal mining interests on the Atlantic Slope. Its projectors believed that the time had come when capitalists in the East would wish to deal largely in precious metal mining securities.

The object of the Club, as organized, was to discountenance in every way the marketing of spurious or doubtful properties in the city of New York, and to encourage all promising and honest efforts for the development of the mineral wealth of the country. It was believed that this would be best accomplished by an association or club composed of Bankers, Capitalists, Brokers, Engineers, Journalists and others who have given any attention to mining enterprises.

The Bullion Club has no president, and its only executive officers are its Secretary (D. G. Croly) and Treasurer (H. H. Hollister). The Chairman of the Board of Trustees is John McGinnis, Jr.

The Club, within two months, filled up its membership of seventy-five; but it is understood that the Constitution is to be amended, and an additional seventy-five members are to be taken in, who are to pay \$50 initiation fee and \$50 annual dues.

Every Thursday evening there is a lecture delivered at the Club Rooms, No. 19 West 24th Street, by distinguished scientists. Prof. J. S. Newberry, Mr. Prentice Mulford, Mr. H. C. Goodspeed, of Utah; Rev. C. A. Poage, of San Francisco; Mr. B. B. Minor, of Bodie, Cal.; Prof. J. H. McChesney, Prof. W. P. Blake, Prof. Silliman, Prof. Munroe, Prof. Raymond, and others equally noted, have addressed the Club on various subjects of interest.

Officers and Members of the Bullion Club.

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 A. J. JOHNSTON, Publisher of Popular Encyclopedia, Maps, &c., 11 Great Jones Street.
 J. H. JOHNSTON, Jeweler, 5th Avenue and 86th Street.
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- R. P. LOUNSBERY, Vice-Pres. of the Ontario S. M. Co. (L. & Haggin), 31 Broad Street.
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 GEN'L HORACE PORTEK, of the Pullman Palace Car Co., 3 Broad Street.
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 HON. S. F. ELKINS, Hotel Bristol, 5th Avenue and 42d Street.
 HOMER B. HAWKINS, 433 West 57th Street.
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Prof. JAS. E. CLAYTON, Salt Lake City.

Constitution and By-Laws.

CONSTITUTION.

ARTICLE I.—The Title of this Association shall be the BULLION CLUB.

ARTICLE II.—The Officers of this Club shall consist of a Secretary, a Treasurer and a Board of Directors composed of not less than nine or more than eleven regular members. This Board shall consist of the following named gentlemen for the first year: J. McGinnis, Jr., James Francis, D. G. Croly, Wm. D. Snow, C. E. Quincey, W. T. Hatch, W. G. Smith, Platt K. Dickinson, J. W. Brown, J. J. Johnson, Horace White, R. P. Lounsbury.

A Chairman may be appointed by the Board for any stated meeting; in absence of such appointment, the meeting shall select its own Chairman.

ARTICLE III.—There shall be annual meetings of the Club, beginning on the first Wednesday after the first Monday in November, 1878.

The Board of Directors shall be elected by ballot at the second annual meeting, as follows:

Three or four for a term of one year.

Three or four for a term of two years.

Three for a term of three years, and their successors shall be elected for a term of three years.

Upon election of the Board, it shall elect a Secretary and a Treasurer from the regular members, for a term of one year, and annually thereafter their successors.

The Secretary and Treasurer shall be *ex-officio* members of the Board.

Six members of the Board shall constitute a quorum.

ARTICLE IV.—The Board of Directors shall exercise a general supervision over the affairs of the Club, conduct its general business, audit all bills, appoint meetings, and do all things the Club may empower it to do to further the objects of the Club, for which purposes it may elect its own officers, appoint committees and require reports.

The Board may make a semi-annual report of its transactions to the Club, or at any time the Club may require.

All matters to be discussed in the meetings of the Club, outside of its ordinary business, must first be submitted to the Board, which may at its discretion submit same to the Club, provided the Club may by a two-thirds vote require the Board to submit any matter in the hands of the Board. Any trustee unavoidably absent may nominate a substitute to serve at such meetings of the Board as may be held during his absence, provided such substitute is satisfactory to the President of the Board, or to the majority of the Trustees; but not more than two such substitutes can serve in the Board at one time.

ARTICLE V.—Any member may propose names to the Board for membership.

The Secretary shall invite any gentleman to join the Club as a regular member, whose name is recommended to the Club by the Board without more than one dissenting voice in the Board, and the Club elects the party so proposed by ballot without more than five voting adversely, provided that the regular membership of the Club shall not exceed one hundred and fifty at any one time.

ARTICLE VI.—Any gentleman interested, directly or indirectly, in precious metal mining or milling, may, upon recommendation of the Board, without more than two members dissenting, and a ballot of the Club, without more than five votes adverse, be invited to become an associate member of the Club, and upon payment in advance of an annual fee of one hundred dollars, be entitled to all the privileges of the Club, except voting in elections or management of the Club's business.

ARTICLE VII.—In like manner to the election of an associate member, any expert in precious metal mining or milling may be elected a corresponding member of the Club for one year upon such terms as may be by By-Law provided. Any member contributing \$500 will be constituted a "life member," and shall not be required to pay annual dues. The money contributed by life members shall be set aside as a fund for the purchase, leasing or equipment of a "Club House."

ARTICLE VIII.—The title to all property or franchises belonging to or hereafter acquired by this Club shall be vested in the Board of Directors in trust for the Club, and subject to the exclusive control of the regular membership.

ARTICLE IX.—The Club shall not lend its name to nor indorse or reject, in its corporate capacity, any particular enterprise or movement.

ARTICLE X.—The initiation fee of regular members admitted by election, as per Art. V., shall be fixed by By-Law.

In all cases where the initiation shall not be paid within thirty days after the election of a member, and his notification by the Secretary, such election may be declared void by the Board.

ARTICLE XI.—The Board of Directors shall have full power to fill any vacancies in the Board of officers, and to suspend or summarily expel from the Club any member for knowingly aiding or abetting in any manner any enterprise of questionable character, or for being guilty of any act unworthy of a gentleman and derogatory to the fair fame of the Club; provided, the Board shall proceed against any member only upon charges preferred in writing, and signed by at least three members, in which case the Board shall refer the charges to a committee or referee, and said committee or referee shall notify the accused in writing, stating charges; and appointing time, at least thirty days thereafter, and place for hearing the evidence for and against said charges; said committee or referee shall make report to the Board at its next regular meeting after hearing the evidence, and thereupon the Board shall vote *viva voce* upon the question of suspension or expulsion of said member, and such vote shall be final and conclusive.

ARTICLE XII.—These Articles may be amended at any regular meeting of the Club upon a two-thirds vote of those present, and after thirty days' notice in writing of proposed amendment.

BY-LAWS.

MEETINGS.

SECTION 1. Cushing's Manual shall be the parliamentary authority when not inconsistent with the Club's Constitution or By-Laws.

SEC. 2. Any two members of the Board may call a meeting of the Board at one day's notice.

The Board or any five regular members may call a meeting of the Club at three days' notice.

SEC. 3. The Secretary shall serve notice of the meetings by mail, to the address of each member of the Board or Club, as the case may be.

SEC. 4. Eleven of the regular members shall constitute a quorum of the Club.

SEC. 5. Any motion or resolution shall be reduced to writing at the request of any member.

SEC. 6. Regular meetings of the Club shall be held on Thursday evening of each week, unless a recess be ordered by the Board of Trustees,

INITIATION FEES.

SECTION 1. The regular members shall pay an initiation fee of \$50 within 30 days after election.

ANNUAL FEES.

SECTION 1. Every regular member shall pay an annual fee of \$50.

SEC. 2. Annual fees shall be paid on the second Thursday in January, each year.

SEC. 3. Every regular member coming into the Club at any time after the second Thursday in January, each year, shall pay his annual fees at the same time he pays his initiation fee.

DEBTS.

SECTION 1. The Board shall contract no debts beyond the amount in the Club's Treasury. No salary nor compensation shall be paid to any officer or member of this Club for services rendered.

TREASURER.

The Treasurer shall be custodian of the Club's funds, and pay out same only on order of the Board, countersigned by the Secretary.

SECRETARY.

SECTION 1. The Secretary shall keep the books and records of the Club, conduct the Club's correspondence, and be custodian of all its papers, which books, records and papers shall at all times be open to, and only open to members of the Club.

SEC. 2. The Secretary may employ one or more assistants, subject to confirmation by and order of the Board, and at such rate of compensation as the Board may fix.

CORRESPONDING MEMBERS.

SECTION 1. Any nominations for Corresponding Members reported unanimously by the Board before December 6th, 1878, shall be acted upon by the Club at the meeting to which such nominations are reported. After December 6th, 1878, such nominations shall be posted in the Club, and not be acted upon within less than thirty days after being so reported and posted by the Board.

VISITORS.

SECTION 1. Members may introduce visitors to the Club, providing the same person shall not be introduced more than once in thirty days, except by and with consent of the Board. Every visitor must be registered in the book kept by the Club for that purpose, by the member introducing.

THE NEW YORK MINING STOCK EXCHANGE.

The New York Mining Stock Exchange dates from the 22d day of September, 1875. The organization of the Board was perfected on the 26th day of October, 1875, and on the 28th day of October, the Stock Committee submitted a list of about twenty mines, nearly all of which were "copper mining companies," and the chairman rapped his gavel for the first time. On the 13th day of January, 1876, the Board had but twenty-five members. At this time a new constitution was adopted, and the membership increased to forty. On the 2d day of October, 1876, the Board was formally recognized by the New York Stock Exchange, and one hundred and sixty of that old and powerful organization became members of the New York Mining Stock Exchange, swelling the roll to two hundred and ten. There were some sales daily, yet not a few of the members advocated dissolution. On the 1st of May, 1877, the Exchange removed to the basement of No. 16 New street, about which time negotiations were opened to allow the members of the American Mining and Stock Exchange, (an institution organized in the fall of 1876), to become members of the New York Mining Stock Exchange, which finally consummated by amending the constitution of the latter Board, so as to permit of an amalgamation with the former. This being accomplished, the two Boards, as previously stated, were formally united, retaining the old name, July 20,

1877. The Board then took up its quarters and now occupies spacious and handsomely fitted-up rooms at 60 Broadway, extending through to New street. The membership consists at this time of about five hundred gentlemen—representatives of the leading financial, commercial, and mining interests of New York and San Francisco. The vast wealth represented, the integrity and high character of its members, its strict rules of government, and the ability of its officers and governing committees combine to inspire confidence in its operations among stock dealers throughout the world. Notwithstanding the difficulties that surrounded the Board at its opening, already its business has assumed a creditable figure, and is rapidly on the increase. The fact has been demonstrated that mining stocks can be bought and sold as expeditiously, and upon as favorable terms to dealers, through this Board, as in the Mining Stock Exchanges of San Francisco, with additional safeguards to operators. The regular list embraces a large line of dividend-paying and other promising mines, and new companies are being placed on the Board daily.

Mr. G. B. Satterlee, President of the New York Mining Stock Exchange, is a New Yorker, born in 1833, and trained to the business of banking and brokerage. In the earlier mining investments of 1864 to 1867 Mr. Satterlee is supposed to have "bought much experience," of which he has availed himself in the renewal of the interests under the more intelligent and economical results of to-day, and he is now one of the "authorities" in the East on mining matters. He has been for many years an active director in copper and coal mines.

Mr. Satterlee was one of the first to urge the consolidation of the elements of Mining Boards, which existed, into an Exchange in harmony with and including members of the New York Stock Exchange, and in recognition of his impartial devotion to the interests of this Mining Exchange he was elected to the honorary office of President and re-elected in June, 1879, by a practically unanimous vote. Mr. Satterlee is known as a broker who has deprecated investments here in stocks controlled on the West Coast, believing that the increased experience of Eastern Boards of Managers will give a class of stocks that will be held here in larger lines. He is a "conservative" in mining, and believes that the interests in precious metal mines should grow slowly and intelligently to avoid checks and revulsions. He is not the representative of any company or clique.

Mr. J. Wyman Morris, the Founder and Ex-Secretary of the New York Mining Stock Exchange, was born in 1823. Through a long and experienced business career in New York city, he has ever been closely connected with mining interests in the East throughout the many vicissitudes and convulsions sustained here by mining enterprises, which has given him a splendid knowledge of the business. He has been an officer and trustee in numerous companies, and holds now many positions in different mining corporations. Mr. Morris was the Secretary of the old Mining Board, and in June, 1875, a number of the old members came to him to use his influence in re-organizing the association. Considering that there was hardly enough interest manifested in mining stocks at that time to warrant a success in the undertaking, Mr. Morris at first declined making the attempt, but, being repeatedly urged, he finally, on September 22, 1875, personally undertook the organization of the present New York Mining Stock Exchange. A meeting was held on the above day in the restaurant of Mr. Frederick Kurtz, No. 23 New street, at which time there were but fifteen members present. Mr. Morris was elected Secretary, and the constitution of the old organization was amended in pencil, and adopted, until a new one could be prepared. Out of the principal officers elected, four resigned immediately after, leaving Mr. Morris with the entire responsibility resting upon him. With indefatigable zeal, and absolute faith in the future of the organization, he prepared a new ticket, which was elected October 26, 1875. The Exchange then met at No. 24 Pine street. The Board from this time slowly and surely grew in business and importance, and Mr. Morris succeeded finally in getting a number of wealthy and influential men to interest themselves in the organization. When the Boards were consolidated, he was elected Secretary of the united organization, a position he held with entire satisfaction until last March, when he resigned, receiving many testimonials from the members of their appreciation of his ability and fidelity.

The present Secretary of the New York Mining Stock Exchange is Mr. John F. Scott, a son of Mr. Wm. B. Scott, of the firm of W. B. Scott & Co., Bankers and Brokers, in Pine

street. He was born in 1853, and commenced his business career in 1870. After leaving college, he accepted a position in the banking house of Morton, Bliss & Co., and while that firm were the financial agents of the Union Pacific Railroad, he was the transfer clerk, and later became their assistant cashier. In 1872 Mr. Scott crossed the Atlantic, and went with the house of Jay Cooke, McCulloch & Co., of London. He remained with them for two years, and he is always ready to speak in the highest terms of the uniform kindness and courtesy for which that firm were at all times conspicuous. Early in the year 1875 Mr. Scott returned to the United States, and went west to San Francisco, making an extended tour of many of the mines on the Pacific coast. In the Summer of 1875 he visited Europe a second time, and traveled through England, Holland, Germany, France, Switzerland and Italy, returning about the close of the year. In June, 1876, he became interested in his father's house, where he has remained up to this date. He was elected Secretary of the Mining Exchange in February, 1879, on the resignation of Mr. J. Wyman Morris. Mr. Scott was one of the original members of the American Mining Exchange, and was one who strongly urged consolidating with the New York Mining Board, and now they are united he takes a deep interest in the welfare of the organization.

Mr. A. Winniett Peters, the Chairman of the New York Mining Stock Exchange, was born in St. John, New Brunswick, Canada, in the year 1844, and came to New York in the year 1867, representing the firm of Ralph King & Hallock as their attorney in the "Gold Exchange," until appointed Assistant Secretary of the "Government Stock Exchange," in connection with the "Open Board of Brokers;" and when the "Regular Stock Exchange" and "Open Board" consolidated, represented W. B. Sancton as his attorney in the "Gold Exchange," till 1875, when he was elected to membership in the "Gold Exchange," and later in the "Mining Exchange." In 1876 he was elected Secretary of the "Gold Exchange," which position he held until it became a Department of the "Stock Exchange." Turning his attention to mining stocks he operated as a broker until the election on June 3, 1878, when, running on an independent ticket, he was elected Chairman of the Exchange, which position he now holds.

For the information and guidance of the stock dealing public we publish a full text of the Constitution and By-Laws of the Board, together with the roll of officers and members.

Officers of the New York Mining Stock Exchange.

President—GEORGE B. SATTERLEE.

Vice-President—H. C. HARDY.

Treasurer—JOHN STANTON, JR.

Chairman—A. W. PETERS.

Secretary—JOHN F. SCOTT.

Ass't Secretary—R. H. GALLAHER, JR.

GOVERNING COMMITTEE.

Class 1, to serve One Year.

R. J. KIMBALL,
C. M. STEAD,

J. M. BROWN,
H. TRACY ARNOLD,

WM. A. SHEPARD,
CARL H. DE SILVA.

Class 2, to serve Two Years.

R. M. SHAW,
WM. H. MATTESON,

WM. M. VAN SCHAICK,
H. S. STEELE,

S. W. LAPSLEY,
WM. T. WHITING.

Class 3, to serve Three Years.

J. C. GODFREY,
R. M. McJIMSEY,

JAMES FRANCIS,
JAS. T. SOUTTER,

RUFUS HATCH,
D. A. BOODY.

In addition to which the President, Vice-President, Treasurer and Chairman of Arbitration, Finance, Membership and Securities Committees are members *ex officio*.

FINANCE COMMITTEE.

C. O. MORRIS, *Chairman*,
JNO. A. MACPHERSON, *Sec'y*,

J. B. NEWCOMBE,
GEO. H. KENNEDY,

THOS. B. ATKINS,
and *Pres't and Treas.*

ARBITRATION COMMITTEE.

E. S. MUNROE, *Chairman*,
H. LIVINGSTON ROGERS,

B. F. MUNROE,
HENRY S. STEELE,

R. P. LOUNSBERY.
H. TRACYARNOLD, *Sec'y*.

MEMBERSHIP COMMITTEE.

J. J. THOMAS, *Chairman*,
GUSTAVE LEO,

A. J. F. VANDEVENTER, *Sec'y*,
CHAS. H. MEIGS,
J. W. BURNHAM.

LOUIS HAIGHT.
W. H. BARBOUR,

SECURITIES COMMITTEE.

SPENCER TRASK, *Chairman*,
P. K. DICKINSON,

JOHN F. SCOTT, *Sec'y*,
HENRY J. ROGERS,
R. K. COOKE.

S. V. WHITE,
FRED'K HARDY.

 Members.

NAME.	FIRM.	OFFICE.
Ahrens, C. H. F.,		429 Broome street
Alberton, Rufus K.		30 Pine street
Alexander, H. E.	Latham, Alexander & Co.	39 Wall street
Allardice, Chas.		6 Wall street
Allen, A. H.		22 William street
Allen, Chas. C.		17 New street
Allen, Harry	Allen & Stead,	62 Broadway
Altman, Henry		40 Bowery, Room 54
Amory, R. G.		29 William street
Anderson, John J.		18 West 9th street
Anthony, J. L.	Anthony & Oliphant,	19 Broad street
Armstrong, John L.		San Francisco
Arnold H. Tracy	H. Tracy Arnold & Co.	57 Broadway
Ash, Jacob	Ash Bros., S. F., Cal.	56 Murray street
Ashley, Ossian D.		52 William street
Atkins, Thos. B.	Chase & Atkins,	18 Broad street
Bachman, Joseph	Jos. Bachman & Sons,	3 Maiden Lane
Bacon, Francis W.		San Francisco
Badeau, Chas. H.	Badeau & Co.	60 Broadwuy
Badger, George K.		40 Wall street
Badger, Luther W.		40 Wall street
Bailey, J. K.		60 Broadway
Baker, Cyrus O.		15 Wall street
Baldwin, Simeon	Baldwin & Weeks.	90 Broadway
Baldwin, A. H.	A. H. Baldwin & Co.	66 Broadway
Barbour, William H.	H. Tracy, Arnold & Co	57 Broadway
Barnes, Edwin D.		161 Broadway
Bartlett, Josiah		30 Drexel Building
Bayne, Lawrence P.	L. P. Bayne & Co.	54 Broad street
Bee, Frederick A.		San Francisco
Benedict, Coleman		15 Wall street
Berdan, D. W.		17 New street
Berdell, Chas. P.		43 New street
Betts, E. R.		11 Wall street
Billing, F. W.	Hagan & Billing,	1 Wall street
Blacque, V. A.	at Johnson & Bell.	54 Wall street
Blair, A. J.		Pioche, Nevada
Blakeman, W. N., Jr.	at McKim Bros. & Co.	47 Wall street
Blood, S. L.		70 Broadway
Blount, Duncan F.		146 East Thirty-third street
Bonacina, Fernando		San Francisco

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Bond, George W.		16 New street
Boody, D. A.	D. A. Boody & Co.	58 Broadway
Borg, Simon	Levy & Borg,	36 Wall street
Boyle, William G.		Tucson, Arizona
Bradford, Thaddeus D.		San Francisco
Bradford, H. S.		57 Broadway
Brandreth, William		52 Broadway, Room 52
Brown, Fred. T.	H. L. Horton & Co.	56 Broadway
Brown, Geo. L.	Brown, Gold & Brown,	92 Broadway
Brown, J. M.	A. H. Brown & Co.	7 Wall street
Bruns, Phil.		14 New street
Budd, Wyman C.		San Francisco
Bullock, Frank D.		San Francisco
Bunnell, Henry H.		New Haven
Burgoyne, Wm. M.		67 Exchange Place
Burgoyne, Wm. M., Jr		67 Exchange Place
Burnham, J. W.	Hotchkiss & Burnham,	36 Broad street
Butler, Charles G.		San Francisco
Campbell, James		Iron Junction, N. Y.
Camp, Wm. S.		70 Broadway
Cantin, J. P.	Cantin & Everett,	San Francisco
Cantoni, Salvatore	Cantoni & Co.	35 Wall street
Carey, H. T.		29 New street
Cassin, P. J.		Front street, San Francisco
Cayton, Wm. W.		60 Broadway
Cecil, J. R.		15 West Fifty-second street
Chandler, H. R.		10 Pine street
Chapman, Chas P.		Auburn, Cal.
Chapman, Henry P		20 Broad street
Chisolm, Alex. Robert		61 Broadway
Clark, H. J.	H. & J. Clark,	62 Broadway
Clarkson, E. L.		48 Pine street
Cohen, Rudolph		San Francisco
Cohn, Jacob		San Francisco
Colgate, Josiah S.		70 Liberty street
Comings, Wm. L.		52 Broadway, Room 7
Comstock, C. A.		Catskill, N. Y.
Congdon, John G.		25 Broad street
Conklin, Aaron	Conklin, Waterman & Co,	26 Pine street
Cooke, Henry M.		64 Broadway
Cooke, R. K.	at Ketchum & Belknap,	24 Broad street
Cooke, S. E.	Amerman & Cooke,	80 Broadway, Room 21
Cornish, Chas. L.		769 Fifth avenue
Cornwall, George		18 Warren street
Courtney, Robert		54 William street, Room 1, fifth floor
Cummings, Geo. F.	Cummings & Co.	4 Broad street
Curphey, Jas.		64 Exchange Place
Cushman, W. H		Georgetown, Col.
Daley, Joseph B.		64 Gold street
Daly, Wm. H.		49 New street
Davis, J. M.	Davis & Freeman,	53 Exchange Place
De Agüero, J. W.		1½ Maiden Lane
Deas, Z. C.	Z. C. Deas & Co.	32 New street
DeCoppet, F.	Jacquelin & DeCoppet Bros.	4 Wall street
DeCordova, Alfred		36 New street
De Crano, E. G.		San Francisco
Dederick, Zachariah	Dederick & Co.	18 Maiden Lane
De Fontaine, F. G.		56 Drexel Building
De Forest, L. V.		70 Broadway
De Forrest, John		78 Broadway
De Jonge, S.	De Jonge & Co.	46 Exchange Place
Denny, Thomas, }	T. Denny & Co.	30 Pine street
Denny, John T. }		

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Denslow, E. H.		58 Broadway
De Silva, C. H.		26 Broad street
Dickerman, W. B.	Dominick & Dickerman,	19 New street
Dickinson, Frank F.	J. C. Walcott & Co.	29 Broad street
Dickinson, Howard C. }		
Dickinson, Platt K. }	H. C. & P. K. Dickinson,	25 Broad street
Dimock, Geo. E.		7 Exchange court
Dimon, Chas.		115 Liberty street
Dinsmore, Robert	R. Dinsmore & Co.	San Francisco
Doane, Geo. A.		38 Water st., Boston, Mass.
Drake, A. A.		9 New street
Drake, Horace K.		Palace Hotel, S. F., Cal.
Dunham, Heber		40 Wall street
Duryea, J. J.		195 West street
Earle, Henry	Putnam & Earle	5 Wall street
Edey, A. R.		48 Wall street
Embrey, Judson J.		Fredericksburg, Va.
Eldred, O. P.		Princeton, Ky.
Elliot, Richard		San Francisco
Elliott, R. S.		32 New street
Elsassar, Seligman,		15 Broad street
Emerson, Jno. R.		15 Broad street
Estee, W. M.		45 E. Sixty-fifth street
Faile, Samuel	at Petty & Bostwick,	13 Broad street
Fanshawe, Geo. A.	Fanshawe & Milliken,	3 Nassau street
Faris, A. L.		29 New street
Faris, Henry L.	H. T. Godet & Co.	25 New street
Fellows, J. W.		30 Broad street
Fisk, D. C.		5 Nassau street
Fitch, Henry, Jr.	P. W. Gallaudet,	3 Wall street
Flamant, Adolph	Frank & Flamant,	149 Broadway, Room 18
Fleming, J. Pressly		
Flower, R. P.	R. P. Flower & Co.	84 Broadway
Fogg, Francis H.		59 Drexel Building
Follett, Alonzo		11 Wall street
Foote, C. B.	Hatch & Foote,	12 Wall street
Foote, Randal H		70 Broadway
Ford, Chas. E.		Drexel Building, Room 35
Foster, Wm. Jr.	at M. K. Jesup, Paton & Co.	52 William street
Fowler, Chas. C., Jr.		P. O. Box 4254
Francis, James	Trask & Francis,	70 Broadway
Friedman, Henry C.	Friedman & Co.	146 South Third st., Phil.
Gallaher, R. E.		54 Broad street
Gallaher, R. H., Jr.		60 Broadway
Gandolfo, James		11 Old Slip
Gardenhire, Wm. C.		San Francisco
Gay, Jos. E.		32 Pine street
Geiger, J.		60 Broadway
Gelston, W. J.	Gelston & Bussing,	16 Wall street
Germond, H. S.	Forrester & Germond,	30 Broad street
Gildersleve, Chas. H.		Santa Fe, New Mexico
Giles, O. H.		52 Broadway
Gill, Andrew W.		57 Broadway
Godfrey, Edward A.		San Francisco
Gillett, L. W.		54 Wall street
Godfrey, James C.		25 Broad street
Gold, C. B.	Brown, Gold & Brown	92 Broadway
Goldberg, Max		324 Kearney st.,
Goldsmith, Amson		San Francisco
Gould, E. W.		San Francisco
Granberry, W. H.	W. H. Granberry & Co.	25 New street
Gregory, Chas.	Gregory & Ballou,	14 New street
Griffin, Hobert R.		6 Wall street
		62 Broadway

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Guion, S. W.		29 Broadway
Gwynne, Wm.		37 Exchange place
Haar, John H.	Haar & Co.	8 Broad street
Haggin, Louis T.		San Francisco
Haight, Louis	G. L. & L. Haight,	26 Broad street
Haight, Ogden	Haight Bros.	38 Broadway
Hall, R. B.		60 Broadway
Hanly, Wm. W.	W. W. Hanly & Co.	60 Broadway
Hannah, Henry, Jr.		30 New street
Hard, Samuel B.	Warren, Hard & Co.	31 Broad street
Hardy, Fred'k	H. C. Hardy & Son,	10 Wall street
Hardy, H. C.	Henry C. Hardy & Son,	10 Wall street
Harriman, E. H.	E. H. Harriman & Co.	30 Broad street
Harriot, S. J.	Harriot & Noyes,	10 Wall street
Harris, C. H.		25 New street
Hart, Julius		76 Franklin street
Haskins, W. E.		6 Exchange Court
Hatch, D. B.	Hatch & Foote,	12 Wall street
Hatch, N. W. T.	W. T. Hatch & Son,	34 Wall street
Hatch, Rufus	Rufus Hatch & Co.	47 Exchange place
Hawkins, Homer B.		35 Broad street
Hay, Silas C.		31 Broad street
Hays, Jacob	Closson & Hays,	3 Nassau street
Heath, William	Wm. Heath & Co.,	19 Broad street
Hendrickson, A. C.		Gautamala, Cal.
Hengstler, Julius		8 Broad street
Heydenfeldt, Solomon, Jr.		Troy, N. Y.
Hibbard, S. M.		29 Broad street
Hill, F. F.		Drexel Building
Hinckley, Elihu G.		Troy, N. Y.
Hine, Ethel C.		581 Broadway
Hirshfeld, Julius	Hirshfeld Bros.	San Francisco
Hitchens, James		San Francisco
Hoagland, Geo. W.		120 Broadway
Hollenbeck, David M		Turners, Orange Co. N. Y.
Hollister, H. H.		43 New street
Hooper, H.	Dewing & Son,	11 Broad street
Hopcock, W. Howard		125 Pearl street
Horton, H. L.	H. L. Horton & Co.	56 Broadway
Howell, Geo. R.	Leonard, Howell & Co.	58 Broadway
Hubbard, G. W.	Hubbard Bros.	43 New street
Hubbard, Henry J.	Hubbard Bros.	43 New street
Hubbell, W. F.		44 Broad street
Huestis, C. H.	at Wood & Davis,	31 Pine street
Hurlbut, H. A., Jr.	Cushman & Hurlbut,	54 Wall street
Hull, J. C.		Cor. William & Exchange place
Hungerford, Henry		Norwalk, Conn.
Hussey, Erwin A.		66 Broadway
Hutchinson, John		San Francisco
Hyneman, Moses		942 North Seventh street, Phil.
Jameson, Wm. H.		54 Wall street
Jerome, Augustus S.		36 Dey street
Jessurun, Solomon		162 West Forty-Fourth street
Johnson, Davis	H. L. Horton & Co	56 Broadway
Johnson, F. M.	Johnson & Bell,	54 Wall street
Jones, Ed. Renshaw,	Davidson & Jones,	56 Wall street, Room 8
Jordan, Thomas	Alex. R. Chisholm,	61 Broadway
Jung, Chas. T.	office of A. G. Heminway,	11 Wall street
Kauffman, Luther S.		Denver, Col.
Keefer, Windser A.		San Francisco
Keene, G. W.	office of A. H. Brown & Co.	7 Wall street
Kennedy, Geo. H.	Kennedy, Hutchinson & Co.	40 Wall street
Keown, James H.		San Francisco

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Keppler, Chas. F.	Keppler & Sancton	49 Exchange place San Francisco
Kerr, Walter M.		
Kimball, R. J.	R. J. Kimball & Co.	4 Exchange court 16 Broad street
Kimball, Wm C.		60 Broadway
King, A. W.		31 Broad street
King, R. W.	Richard W. King & Co.	53 Exchange place
Kingdom, James	Jas. Kingdom & Co.	8 Broad street San Francisco
Knapp, Shepherd		57 Exchange Place 60 Broadway
Koopmanschap, Cornelius		463 West 71st street San Francisco
Krohn, Albert	Krohn & Hoffman,	
Krug, William		
Kuchnemundt, C. F.		
Kuhl, H. G.	Kuhl, Steele & Co.	
Lande, Bernard		San Francisco
Lane, Ker Boyce		
Lapsley, S. W.		15 Broad street
Lathrop, Benj. G.		Healdsburg, Cal.
Lawrence, Chas. Wallace		54 William street
Lawrence, Chas. Wilson		22 Monroe street
Lawrence, Cyrus J.	Lawrence Bros. & Co.	31 Broad street
Lawrence, De Witt C.	Lawrence Bros. & Co.	31 Broad street
Lawrence, Wm. H.		San Francisco
Lawton, Franklin	Lawton & Deane,	San Francisco
Leo, Gustave	at Arnold Leo Co.	58 Exchange Place
Lewis, Chas. H.		5 New street
Lewis, Martin		
Livermore, Wm. F.		2 Exchange court
Lockwood, J. S.		57 Broadway
Lounsbery, Henry R.	Kimber & Lounsbery,	33 Broad street
Lounsbery, R. P.	Lounsbery & Haggin,	31 Broad street
Lowe, Dewitt B.	at Robbins & Robinson	31 Broad street
Lubeck, Samuel		San Francisco
Macpherson, Jno. A.		78 Broadway
Maltbie, F. A.	Maltbie & Beers,	36 Broad street
Mann, G. F.		64 Broadway
Manning, Wm. S.		San Francisco
Martin, M. L. B.		58 Exchange Place
Marrin, Charles C.	Marrin & Jordan	24 New street, Room 7
Marvin, Geo. H.		35 Wall street
Mason, T. Henry	Mason & Smith	Exchange court
Mathez, F. L.		60 Broadway
Mathez, F. L. Jr.,	with W. E. Conner	80 Broadway
Matteson, W. H.		60 Broadway
Maxwell, James E.		25 New street
McCallum, John G.		San Francisco
McClure, Wm.		N. Y. Stock Exchange
McGowan, Henry D.	Hilmers, McGowan & Co.	63 Wall street
McGowan, P. H.	Bunker & McGowan	San Francisco
McJimsey, R. M.		64 Wall street
McKim, Clarence	at McKim Bros. & Co.	47 Wall street
McKinley, John		34 New street
McMicken, J. A.	J. A. McMicken & Co.	13 Broad street
Meigs, Chas. H.	Bartlett & Meigs,	1 Broad street
Mendel, H.	Marx & Co.	50 Exchange court
Mendels, E. S. Jr.		15 Wall street
Mercado, Felix		San Francisco
Merriam, Henry		119 Devonshire street, Boston
Mertens, Edward	M. C. Klingensfeld & Co.	52 Exchange Place
Miller, C. W.		2 Nassau street
Miliken, D.	Fanshawe & Miliken	3 Nassau street
Minzesheimer, Chas.		14 New street
Mitchell, A. M. }	A. M. Mitchell & Co.	} 64 Wall street
Mitchell E. P. }			San Francisco
Molera, E. J.		

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Montgomery, F. L.		134 East Seventy-First street
Moon, Andrew J.		San Francisco
Morrison, John C., Jr.	J. C. Morrison & Co.	San Francisco
Morris, C. O.	White, Morris & Co.	6 Wall street
Morris, J. Wyman		60 Broadway and 23 New street
Morse, Amos C.		San Francisco
Morton, John	20 Webb street,	Merced, Cal.
Moss, E. W.		32 Broad street
Moss, Joseph L. Jr.		28 Broad street
Munroe, B. F.	Ham & Munroe.	23 Nassau street
Munroe, E. S.		60 Broadway
Munroe, G. D.		68 Broadway
Nathan, Edward	Julius Wehl & Co.	51 Exchange Place
Nathan, Julian	at Wolf Bros.	44 Exchange place
Nathan, Julius	at I. & S. Wormser,	1 Broad street
Neff, J. M. W.		Cincinnati, Ohio
Neu, G. S.		60 Broadway
Newcombe, I. B.	I. B. Newcombe & Co.	6 Broad street
Newhouse, Chas.		18 New street
Newman, Edward		20 Broad street
Nevius, Theodore M.		104 Broadway
Nichols, F. L.		3 Exchange court
Nicolay, A. H.	A. H. Nicolay & Co.	43 Pine street
Nicolay, A. H. Jr.	A. H. Nicolay & Co.	43 Pine street
Norris, Jno. B.		
Offenbach, Joseph		51 Exchange Place
Offenbach, Louis		42 Broadway
Olcott, H. L.	Olcott & Co.	40 Broad street
Openhein, Edward L.		66 Exchange Place
Orr, Samuel L.		San Francisco
Osborn, C. J.	C. J. Osborn & Co.	34 Broad street
Palmer, Frank T. W.		54 Broad street
Palmer, Geo. H.		27 New street
Parkhurst, D. L.		San Francisco
Parrish, Wm. W.		San Francisco
Patchen, E. F.	Patchen Bros.	51 New street
Patchen, S. W.	Patchen Bros.	51 New street
Patterson, H. A.		14 New street
Patton, Ludlow		6 Wall street
Pearl, William E.		64 Broadway
Peckham, Alfred	at J. L. Hathaway,	80 Wall street
Perkins, H. W.	H. Knickerbacker & Co.	15 New street
Peters, A. W.		4 Broad street, room 14
Phillips, Samuel		San Francisco
Phillips, Spencer R.		36 Broad street
Pray, E. E.		16 Broad street
Price, Merrick		Philadelphia
Purss, J. D.	Purss & Young,	40 Wall street
Quincey, C. E.	Wm. Heath & Co.	19 Broad street
Rasmus, Wm.	Rasmus & Lissignoh,	41 Exchange place
Raum, Geo. E.		San Francisco
Raven, R. M.		4 Broad street
Rebello, Chas. H.		60 Broadway
Reichelt, A.	at Taaks & Lichtenstein,	50 Exchange Place
Renville, Geo. G.		
Reynolds, Albert W.		65 Horatio street
Reynolds, Jas. E.		58 Broadway room 5
Richardson, Henry A.		234 Water street
Rickard, R. H.		30 Pine street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Riechelt, A.		
Riker, N. W.		
Robinson, Sidney S.	Robinson & Co.	55 Liberty street Albany, N. Y.
Robinson, Wm. H.		35 Wall street
Rogers, Henry J.	L. P. Bayne & Co.	54 Broad street
Rogers, H. Livingston	Rogers & Deghueue,	39 Exchange Place
Rogers, Richard W.		24 New street
Rolston, Jno. H.		William street, corner Exchange Place
Rook, J. T.		2 Exchange Court
Russel, Salem T.	Salem T. Russel & Co.	6 Wall street
Rutsky, Samuel S.		70 Broadway, room 14
Ryan, Edward J.		San Francisco
Ryerson, G. W.	Hewitt & Ryerson,	34 Wall street
Salomon, E.		57 Broadway
Saltonstall, F. G.	Greenleaf, Norris & Co.	Chicago, Ill.
Satterlee, G. B.		66 Broadway
Satterthwaite, J. Fisher		Cor. Park Place and Church street
Saunders, Cole		Jefferson City, Montana
Saunders, Howard		58 Broadway
Schafer, Herman H.	Schafer & Co.	49 East 15th street, San Francisco
Scharff, W.		66 Broadway San Francisco
Schmitt, Henry		373 Broome street
Schuetz, Henry C.		24 Pine street
Scott, A. E.	W. B. Scott & Co.	24 Pine street
Scott, John F.	W. B. Scott & Co.	16 New street
Seymour, J. C.		5 Pine street, Room 2
Shaw, R. M.		25 Broad street
Shaw, W. M.		52 Broadway
Shepard, Wm. A.		49 New street
Silsby, John		49 New street
Silsby, John, Jr.		San Francisco
Simpkins, C. H.		N. Y. Stock Exchange
Skinner, Samuel T.		19 South William street
Slaughter, W. H.		53 Exchange place
Smalley, W. E.	Smalley & Hone	26 Broad street
Smith, A. O.		104 Broadway
Smith, Ed. R.		65 Exchange place
Smith, Henry N.		14 Broad street
Smith, Jas. D.	Jameson, Smith & Cotting,	29 Wall street
Smith, N. K.		67 Exchange place
Smith, W. B.		52 Broadway
Snow, Whiting G.		San Francisco
Solomon, Seixas		78 Broadway
Soutter, Jas. T.	Soutter & Co.	Virginia, Nevada
Speyer, Leo	Speyer Bros.	19 Broad street
Speyers, A. G. P.		76 Wall street
Stanton, Jno., Jr.		San Francisco
Staples, J. J.		62 Broadway
Stead, C. M.	Allen & Stead,	Philadelphia
Stead, Francis D.		80 Broadway
Stedman, F. S.		13 Broad street
Steel, Henry S.	at Petty & Bostwick,	17 Broad street
Sternberger, Simon	M. & S. Sternberger,	17 Broad street
Sternberger, Maurice M.	M. & S. Sternberger,	60 Broadway
Stocker, H. W.		San Francisco
Sturges, Ira B.	J. A. Folger & Co.	36 Broad street
Sturgis, F. K.	Work, Strong & Co.	72 Broadway
Stuyvesant, Robt.		54 Broad street
Sutton, W. M.	at L. P. Bayne & Co.	
Taaks, W. G.	Baltzer & Lichtenstein,	50 Exchange place
Taylor, Arthur C.		San Francisco
Taylor, H. A.		P. O. Box 203
Taylor, Matt.		70 Murray street

Members—CONTINUED.

NAME.	FIRM.	OFFICE,
Thayer, N. W.		663 Madison avenue
Thayer, R. S.		663 Madison avenue
Thomas, Jno. J.		49 Nassau street
Tibbey, Henry J.		San Francisco
Timpson, Arthur T.		413 Broadway
Tinney, J. H.		Port Jervis, N. Y.
Tobey, S. H.		6 Broad street
Tobias, Henry H.	at Wolff Bros.	52 Broadway
Todd, E. W.	E. W. Todd & Co.	46 Broad street
Townsend, George P.		60 Broadway
Trask, Spencer	Trask & Francis,	70 Broadway
Trask, Wayland	A. M. Kidder & Co.	4 Wall street
Tripple, Alexander		Danville, Nye County, Nev.
Truman, H. H.		14 Wall street
Truman, James C.		Binghamton, N. Y.
Tucker, Joseph H.		63 Drexel building
Turner, Archd.		22 Nassau street
Turner, James		48 Broad, Room 13
Tuthill, George		52 Broadway, Room 65
Upton, F. C.		285 Broadway
Utley, W. R.		31 Pine street
Vandeventer, A. J. F.		57 Broadway, Room 18
Van Schaick, W. M.	Van Shaick & Co.	32 Broad street
Verdenal, D. F.		San Francisco
Verplanck, Wm. M.	Verplanck Bros.	82 Chambers street
Vimont, Joseph N.		San Francisco
Wade, Albert P.	Jos. Q. King & Co.	San Francisco
Wagstaff, Thos. H.		Room 15, 57 Broadway
Wakeman, W. W.	W. W. Wakeman & Co.	42 Pine street
Waller, L. P. F.		San Francisco
Walsh, J. Lawrence	J. Lawrence Walsh & Co.	19 Broad street
Ward, Edgar W.		93 Nassau street
Ward, William	Wm. Ward & Co.	52 Broadway
Ward, Walworth	Wm. Ward & Co.	52 Broadway
Waterman, Edwin S.		26 Pine street
Watson, T. L.	Hatch & Watson	Bridgeport, Conn.
Webster, Horace	H. Webster & Co.	22 Monroe street
Weeks, James	Baldwin & Weeks	90 Broadway
Wehl, Julius		51 Exchange place
Wells, H. H.		Cranford, N. J.
Werner, Leopold J.		26 Broad street
West, D. W.		San Francisco
Weston, Rensselear,		61 Wall street
White, Creda E.		Omaha, Neb.
White, Francis A.		52 Broadway, Room 52
White, Fredk.	White, Morris & Co.	6 Wall street
White, R. K.	at Drexel, Morgan & Co.	1 Broad street
White, S. V.		8 Wall street
White, W. E.		429 Broome street
White, W. R.	White & Randolf,	36 Broad street
Whitfield, Frank B.		9 New street
Whiting, Wm. T.		60 Broadway
Whitlock, A. M., Jr.		17 New street
Whittingham, W. H.	Whittingham & Washburn,	11 Wall street
Wibirt, Henry H.		Buffalo
Wilcox, C. H.	Wilcox & Baird,	64 Broadway
Willard, E. K.	Scranton & Willard,	30 Broad street
Willet, Edward W.		11 Nassau street
Williams, Theodore		132 Wayne street, Jersey City
Winchester, J. T.		78 Broadway
Wiswell, E. R.		20 Nassau street
Wolfe, J. R.	Wolfe Bros.	44 Exchange place

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Wollberg, S.		Room 11, 60 Broadway
Wood, E. A.	Parker & Wood,	15 Broad street
Worden, D. T.	Worden & Leverich,	48 Wall street
Wormser, Isidor,	I. & S. Wormser,	cor. Broad and Wall streets
Worrall, Joseph		San Francisco
Young, E. R.	at Martin & Runyon	40 Wall street
Young, J. L.		16 Wall street
Young, W. E.		60 Broadway, Room 1

Constitution and By-Laws.

CONSTITUTION.

ARTICLE I—*Name.*—The name and title of this Association shall be "THE NEW YORK MINING STOCK EXCHANGE," and its business shall be limited to furnishing facilities to its members for the purchase and sale of the stocks and other securities of Mining, Manufacturing and Insurance Companies.

ARTICLE II—*Officers.*—The officers of this Association shall be a President, Vice-President, Chairman of Arbitration Committee, Treasurer, and Secretary. They shall be elected annually, and shall receive such compensation as the Association may determine.

ARTICLE III—*Standing Committees.*—The regular Committees shall be:
1st. An Executive Committee, which shall consist of thirteen members of the Association, in addition to which the President shall be a member *ex-officio*.

2d. A Finance Committee, which shall consist of five members of the Association, in addition to which the President and Treasurer shall be members *ex-officio*.

3d. A Committee on Membership, which shall consist of seven members of the Association, in addition to which the President and Treasurer shall be members *ex-officio*.

4th. A Committee on Securities, which shall consist of five members of this Association.

The members of the several Committees above named shall be elected annually, at the same time as the officers of the Association, and a majority of the members of any Committee shall constitute a quorum for the transaction of business.

ARTICLE IV—*Election of Officers, etc.*—The annual election of Officers of the Association, and members of the several Committees, shall take place on the first Monday in October, in each year. All candidates shall be voted for by ballot, and the person receiving the largest number of votes shall be declared duly elected; they shall enter upon their duties forthwith, and shall hold office until their successors shall be elected. In case of vacancy by death, suspension or otherwise—except in the Standing Committee—the Executive Committee shall at once order an election to fill the same, but whenever a vacancy occurs in any of the Standing Committees, the President of the Association shall have power to fill the same by appointment, and shall do so as soon as practicable, the appointee to hold office until the next annual election.

The Chairman of the Executive Committee shall preside at the annual election of officers.

ARTICLE V—*Duties of Officers.*—*Duty of the President and Vice-President.*—It shall be the duty of the President to enforce the several provisions of the Constitution and By-Laws, and have a care of the general interests of the Association. He shall preside over the Association during debate whenever he may elect to do so.

The Vice-President shall perform the duties of the President in his absence, and he shall preside over the Association during debate in the absence of the President, or when the President may elect not to do so. In the absence of the President and Vice-President, the members present may choose a President *pro tem.*, who shall exercise all the duties of the office.

Duty of Treasurer.—The Treasurer shall collect and receive all moneys due the Association, and shall hold the same subject to the order of the Finance Committee.

And he shall on the first Monday in October, in each year, and also at any other time that the Association may direct, render to the Association a detailed account of the receipts and expenditures of the Association since the date of the last account rendered by him.

And he shall also on the first Monday in January, April, and July, in each year, render a like account to the Executive Committee. He shall specify particularly from what source or sources the receipts have been derived, and for what purpose or purposes the expenditures have been incurred. He shall also state the balance then in the treasury, and how the same is invested. He shall invest the surplus funds of the Association in such securities, and at such times as the Finance Committee shall direct; and all such securities shall be immediately deposited to the order of THE NEW YORK MINING STOCK EXCHANGE, in the United States Trust Company—or some other Trust Company to be designated by the Finance Committee—for safe keeping, to be withdrawn only on the joint order of the President, the Treasurer, and the Chairman of the Finance Committee.

Duties of the Secretary.—It shall be the duty of the Secretary, or his assistant, to record all purchases and sales made at the business sessions of the Association, and to prepare a report of the same for the press; also to keep a faithful record of all proceedings of the Association in a book of minutes prepared for the purpose; also carefully to keep and preserve all books and papers of the Association, and of the several Committees thereof, not properly belonging to the department of the Treasurer.

He shall prepare and keep a record of all the members of the Association, the place of business of each, and the name of the firm, if any, to which each belongs; and shall also record and charge all fines, dues, and fees which may be imposed, and report to the Treasurer on the first day of each month the amount charged against each member for the preceding month. He shall also during the first week in each month, collect and pay over daily to the Treasurer all fines; and if any member shall neglect or refuse to pay the fines, dues, or fees charged to him, he shall report the same to the Treasurer, who shall, after giving reasonable notice to the delinquent, report the fact to the President of the Association, who shall at once suspend such member until such dues, fees, or fines are paid. He shall also act as secretary to the Executive Committee, when required so to do.

Duties of the Chairman of the Arbitration Committee.—The Chairman of the Arbitration Committee shall have power, and it shall be his duty, to call meetings of that Committee, for the settlement of differences or disputes between the members, and he shall preside thereat.

ARTICLE VI—Duties of Standing Committees.—The Executive Committee, the Finance Committee, the Committee on Membership, and the Committee on Securities, shall each at their first meeting and within one week after their election, choose a Chairman and Secretary; the Secretary of each Committee shall keep in a separate book a true and faithful record of the proceedings of the Committee, which shall be open to the inspection of the members thereof, and when not in use shall be deposited with the Secretary of the Association.

Executive Committee.—The Executive Committee, shall have general supervision over the affairs of the Exchange, and shall have full jurisdiction over all matters not referred by this Constitution to any of the other Standing Committees. They shall take cognizance of all cases of appeal from the decisions of the Arbitration Committee, and their decision in such cases shall be final.

They shall have the power to make such appropriations from the funds of the Association as shall in their judgment be for its interests, but for an appropriation intended to cover any single expenditure exceeding the amount of two thousand dollars (\$2000), (excepting for the salary of an officer or the Association,) they shall obtain the consent of the Finance Committee thereto, and failing in this, they shall submit the same to the Association for final action. They shall have no power to donate the funds of the Association, neither shall any donation of its funds be made, except by the vote of three-fourths of the members of the Association, said vote to be taken at an executive meeting called for that purpose.

They shall have power to fix the amount of salary that shall be paid to any officer of the Association, and shall have power to terminate the contract of the Association with any such salaried officer by a vote of two-thirds of their number.

They shall also appoint a suitable person, a member of this Association, who shall call the stocks at each business session thereof, and who shall preside over the Association during debate in the absence of the President and Vice-President, or when they shall elect not to preside.

They may employ legal assistance, or counsel, whenever in their judgment it is demanded by the interests of the Association.

Finance Committee.—It shall be the duty of the Finance Committee to supervise the finances of the Association, to audit the accounts of the Treasurer, and to direct the investment of any surplus funds in his hands as they may deem advisable for the interests of the Association.

Committee on Membership.—The Committee on Membership shall take cognizance of all applications for membership in the Association, which shall be made in the following manner, to wit, the applicant shall address his communication to the Chairman of the Committee; it shall be endorsed by two members of the Association; it shall be read by the Chairman during open session of the Association, and by him referred without debate to the Committee on Membership, whose duty it shall be to cause the name of the applicant, and the names of his endorsers to be conspicuously posted in the business room of the Association, and also to make diligent inquiry as to the qualifications of the applicant, and if at the expiration of not less than ten (10) business days, five (5) members of said Committee shall be in favor of admission, they shall so report to the Association, and the President, or in his absence, the Chairman, shall declare the said applicant duly elected a member of this Association, and after he shall have signed the Constitution, and paid his initiation fee, he shall be entitled to all the rights and privileges of membership, but if default be made in compliance with this provision for more than ten business days after the said election, the same shall be void.

Sale and Transfer of Membership.—Whenever any member of this Association shall desire to discontinue his membership and to dispose of the same to any person not already a member, he shall send a written communication to the Chairman of the Committee on Membership, stating the fact, and furnishing the name, place of business, and references of the person to whom he proposes to transfer the same. The Secretary of this Committee shall thereupon post the name of the transferee in a conspicuous place in the business room of the Association, with a notice requesting the members to inform this Committee in writing, of any objections they may have to the person named, such communications to be duly considered in the Committee, and held confidential; and if after the lapse of ten (10) days from the first posting of the name, five (5) of the members of this Committee shall vote in favor of the proposed transfer, the said transferee, upon filing his bill of sale in proper form with the Secretary of this Committee, paying the initiation fee to the Treasurer, and signing the Constitution, shall be and become a member of this Association, and shall be entitled to all the privileges, and become subject to all the rules and obligations of membership; provided, that neither of the parties shall be in arrears, for dues or in default to any member of the Association.

No minor shall be eligible for membership.

Restoration of Suspended Members.—The Committee shall have power by five (5) affirmative votes to restore to full connection with the Association, any suspended member, upon satisfactory evidence being furnished that he has settled with his creditors; provided however, that this rule shall not be construed to bind the Committee to restore any suspended member who in their judgment should not be restored; but the said Committee shall be entirely free and untrammelled, with power to act in each individual case on its own merits.

If any suspended member fails to settle with his creditors within one year from the time of his suspension, his rights of membership shall be sold by the Secretary of the Committee on Membership, and the proceeds thereof paid *pro rata* to such of his creditors in this Association as shall prior to the sale have filed their claims with the said Committee, and proved them to the satisfaction of the Committee.

When a member dies, his seat shall be sold by the Secretary of the Committee on Membership under the direction of the said Committee, and after satisfying the claims of the members of this Association, the balance shall be paid to his legal representatives.

Committee on Securities.—The Committee on Securities shall examine and report upon all stocks, or other securities entered on the lists of the Association, and all applications to place securities upon this list shall be made to them, and no stock or other security shall be dealt in under the call of stocks that has not been favorably reported upon by them.

The Committee shall decide all disputed questions as to the regularity of stock certificates, bonds, &c., dealt in by the Association.

ARTICLE VII—Arbitration Committee.—The Arbitration Committee shall consist of a Chairman (as provided in Article II of this Constitution), who shall be elected annually, and six (6) members of this Association, who shall be appointed on Monday of each week by the presiding officer, and it shall be the duty of the Committee to take cognizance of, and exercise jurisdiction over all claims, and all matters of difference between members of the Association, and their decision shall be binding; provided, however, that an appeal from the judgment of the Arbitration Committee may be taken to the Executive Committee, upon the condition that notice shall be given by the appellant to the appellee, within one week of the rendition of the verdict of the Arbitration Committee, of his intention to appeal the case; and that he has deposited with the Treasurer of the Association a sum, which in the judgment of the said Treasurer, is sufficient to secure the claim, together with the costs of appeal.

The Chairman of the Arbitration Committee shall be entitled to a fee of ten (10) dollars for every case tried, which shall be paid by the losing party.

ARTICLE VIII—Fictitious Sales.—No fictitious sales shall be made by any member of this Association, and any member contravening this Article shall upon conviction be expelled.

ARTICLE IX—Offers and Bids.—During the call no member shall offer to buy or sell, on an option of over sixty days.

ARTICLE X—Deposits May be Called.—On all time contracts either party may call at any time during the continuance of the contract for a mutual deposit of twenty per cent on the contract price, and whenever the market price of the stock shall change so as to reduce the margin of said deposit either way below twenty per cent, either party may call for a deposit sufficient to restore the margin again to twenty per cent, and this may be repeated as often as the margin may be so reduced.

In all cases where deposits are called for before two o'clock, they shall be made at, or before three o'clock of the same day; if called after two o'clock they shall be made before noon of the next day.

In case either party should fail to comply with a demand for a deposit, in accordance with the provisions of this Article, it shall be at the option of either party to elect whether to close in the manner provided in Article XI of this Constitution, or to continue said contract, and if no deposit shall have been made previously on the contract, he may even elect to annul the contract, which election shall be announced to the Association in open session, and a minute made thereof in the records. Whenever there is a difference between contractors as to the place of deposit, it shall be made in the Farmers' Loan and Trust Company.

Whenever the seller of a stock shall deposit in the Trust Company a margin equivalent to one hundred per centum of the contract price, and a further deposit is called, it shall be at his option either to deliver the stock or to make further deposit.

ARTICLE XI—Where Contracts are not Fulfilled.—Should any member refuse to fulfill his contract on the day it becomes due, the party contracting with him may employ the presiding officer to buy or sell the stock, as the case may be, at the business room of the Association during open session, and he shall in all cases where the stocks are bought or sold under this rule, buy in such a manner as in his judgment will secure the stock at the lowest price; and when instructed to sell stock under the rule, to sell in such a manner as will in his judgment secure the highest price, providing that such contracting party shall first have notified the other party personally, or by leaving written notice at his office, of the intended time of sale or purchase; accounting to the member in default for any surplus, or charging him with any deficiency, including commission to the officer employed to buy or sell the same, at the rate established by the Association.

If such party has no office, and cannot be found after suitable search, then such stock may be bought or sold without notice.

"Puts" and "Calls" are recognized in the same manner as other contracts; but bids or offers on them during the call are prohibited.

ARTICLE XII—Suspension of Members.—When it comes to the knowledge of the Executive Committee that any member of this Association shall have failed in his contracts, it shall be their duty to report the same to the President of the Association, who shall declare the said member to be suspended.

Before such suspension or notification, the reported member may appear and demand a hearing before the Executive Committee, and if it shall appear that the complaint is just, the declaration of suspension shall be confirmed; otherwise it shall be annulled.

Time contracts existing with members who have failed may be closed under the rule stated in Article XI, on the day of such failure, or at the first regular session of the Association following, unless the said failing party shall give up a satisfactory principal who will assume the contract, and shall deposit a sufficient margin in the Farmers' Loan and Trust Company before two o'clock P. M. on the day of failure.

Any suspended member applying to the Committee on Membership for re-admission shall furnish to the Chairman of said Committee a list of his creditors at the time of his suspension, a statement of the amount owing to each, and the nature of his settlement in each case.

ARTICLE XIII—Partnership of Members.—No member of this Association shall be allowed to take as partner any suspended member thereof, during the period of his suspension, or to form a partnership with any insolvent person.

ARTICLE XIV—Initiation Fee.—The initiation fee of new members admitted by election, shall be five hundred dollars, or such sum as the Executive Committee may decide upon.

The initiation fee to purchasers of membership shall be fifty dollars.

ARTICLE XV—Annual Dues.—Each member of this Association shall pay annually the sum of ten dollars to the Treasurer of the Association, on or before the first Monday in January. Any member

neglecting or refusing to make this payment at the time named, unless for some reason that may be satisfactory to the Executive Committee, shall be suspended from the privileges of this Association.

ARTICLE XVI—*Commissions*.—The rates of Commissions shall be such as may be fixed from time to time by the Executive Committee.

ARTICLE XVII—*Legal Interference with Officers or Committees*.—Any member of this Association who shall himself, or whose partners shall apply for an injunction or legal process restraining any Officer or Committee of the Association from performing his or their duty under the Constitution and By-Laws shall by that act cease to be a member of the Association.

ARTICLE XVIII—*Expulsion for Fraud*.—Should any member of this Association be guilty of obvious fraud—of which the Executive Committee shall be the judge—he shall, upon conviction thereof by a vote of nine (9) of the members of the said Committee, be expelled, and his membership shall escheat to the Association, subject, however, to the provisions of this Constitution regarding claims of members of the Association who are creditors of such member.

ARTICLE XIX—*Constitution*.—The signing of the Constitution of this Association shall be construed as an obligation and pledge of each member to abide by the same, and also by all By-Laws, Rules or Regulations which may be hereafter adopted; and any member refusing to comply with the Laws of the Association, shall be reported to the Executive Committee, and may have a hearing, and if said Committee decide, by a vote of nine (9) of their number, that the complaint is proved, they may declare him no longer a member of the Association. No expulsion or suspension of a member shall affect the rights of creditors, as provided by this Constitution.

ARTICLE XX—*Provision for the Families of Deceased Members*.—The Executive Committee of this Association shall, as soon as the surplus funds invested by the Treasurer, under the direction of the Finance Committee, amount to the sum of one hundred thousand dollars, prepare and submit to the Association a plan for making provision for the families of deceased members, similar to that adopted by the New York Stock Exchange.

ARTICLE XXI—*Constitution May be Amended*.—This Constitution shall be amended only by action of the Executive Committee, but any member may propose an amendment in writing at a business session of the Association, which amendment shall be referred by the Presiding Officer to the Executive Committee without debate, and it may, at the option of said Committee, be reported back to the Association, amended or otherwise; and whenever the Executive Committee shall report an amendment of the Constitution, it shall stand as the Law of the Association, unless within one week it shall be disapproved by a majority of the members.

ARTICLE XXII—*Quorum*.—Twenty-five members of the Association must be present to constitute a quorum for the transaction of any business, excepting the regular call of stocks and dealings therein.

BY-LAWS.

ARTICLE I—*First Session*.—The first session shall commence at twelve o'clock, and continue as long as business may require.

Order of Business.—1st. Notice of election and name of the candidate of the day.

2d. Calling the list of stocks.

3d. Calling stocks not on the regular list.

4th. Result of election.

5th. Miscellaneous business.

Second Session.—The second session shall commence at two and one-half o'clock P. M., and continue as long as business may require.

Order of Business.—Calling the list of stocks.

ARTICLE II—*Contested Claims*.—The presiding officer shall decide all contested claims for sales or purchases, when he has sufficient cognizance of the transaction to form an intelligent opinion; but an appeal from his decision shall be entertained, provided it be seconded by a disinterested member, and the question shall be for sustaining or reversing the decision of the Chair. If the presiding officer has not a sufficient knowledge of the transaction to decide the case, he shall take the vote of the Association.

During the settlement of disputes, as to claims of purchases and sales, only claimants shall be allowed to speak without the consent of the presiding officer, and all others who may interrupt shall be fined.

Any conflicting claims for the purchase or sale of stocks on the call, between members buying and selling at their seats and those away from them, the purchase or sale shall be awarded to the member making transaction at his seat.

ARTICLE III—*Offers and Bids*.—All offers to buy or sell securities are binding, and no member may withdraw an offer, except in an audible voice to the presiding officer; but a sale shall take all offers off the floor.

No offer or bid shall be recognized between partners or members of one firm.

All offers to buy or sell, and not otherwise expressed, shall be considered as made for the regular way, and for lots of one hundred shares.

ARTICLE IV—*Interest*.—All contracts over three days shall bear interest at the rate of six per cent per annum; all other contracts shall bear no interest.

ARTICLE V—*Deliveries*.—All securities shall be delivered at or before two o'clock and fifteen minutes on the day they are due, or if presented after that time, the party to receive the same may require them to lie over till next day, without interest, and all contracts over three days shall require one day's notice, at or before two o'clock.

All contracts maturing during the regular closing of the transfer books, shall be delivered by power and certificate in lots of one hundred shares.

Deliveries shall be made either by transfer, or by power and certificates of stocks when more than one transfer a day is allowed of the same stock, and in lots of one hundred shares.

Of stocks when only one transfer a day is allowed, deliveries shall be made by power and certificate only, unless the receiver should require a transfer, in which case, if the transfer books are open at the time, the transfer on the books shall constitute a delivery.

In the delivery of stocks by power and certificate, the receiver shall have the right to demand that the certificate be in the name of, witnessed, or guaranteed by a member of the Association, or a member of a firm represented in the Association.

In all sales of stocks which are transferable in this city, either party shall have the right to require that the purchase money be paid or received at the time and place of transfer.

In the delivery of any security dealt in by the Association, the seller may require a duly certified check on a city bank, or lawful money, upon delivery.

ARTICLE VI—*President may Inflict Penalties.*—No member shall use indecorous language to the Presiding Officer or any fellow member; nor shall any member interrupt the Presiding Officer while performing the duties of the chair, or any other member, while speaking.

As a means of preserving order, the Presiding Officer may inflict a fine of twenty-five cents for all cases of infractions of the rules, or of disorder of any kind, from which there shall be no appeal; and no member shall be permitted to consume the time of the Association by questioning the propriety of the fines inflicted.

It shall be the duty of every member, by the practice of order and decorum, to do all in his power to facilitate the transaction of business; and any member who shall habitually violate this duty, and indulge in acts of insubordination and unseemly conduct, to the injury of the interests of the Association, shall be admonished before the Association by the President, of the necessity of a reformation; and if, after that, he shall continue the obnoxious conduct, the President may suspend him from the privileges of the Association for a period not exceeding one week.

ARTICLE VII—*Resolutions, etc., Referred to Executive Committee.*—All resolutions submitted to the Association shall be in writing, and all such, and all other matter for legislation, not emanating from a Committee of the Association, and not requiring immediate action, of which the Presiding Officer shall be the judge, shall be referred without debate to the Executive Committee.

ARTICLE VIII—*Members to Keep Their Seats, etc.*—Every member shall remain in his seat while dealing in stocks, and no member shall be permitted to deal during any call of stocks, unless he be within the area appropriated to members; and no members, except officers on duty, shall be permitted on the rostrum during any session of the Association.

Members defacing or destroying the furniture of the Association room by placing their feet upon the chairs, shall be fined not less than one dollar.

No smoking shall be allowed at any time in the Association room; members shall be fined five dollars for each offence.

No person other than the regular members of the Association will be allowed to buy or sell stocks or other securities within the Association room at any time; and all persons, not members, at any time admitted to the room, desirous of buying or selling stocks, must do so only through a regular member of the Association; and any member of this Association violating this last Section, shall, for each offence, upon satisfactory proof of the same before the Executive Committee, be fined one hundred dollars (\$100), to be paid to the Treasurer of the Association.

No person other than members shall at any time be admitted within the area without the consent of the Presiding Officer.

ARTICLE IX—*Black List.*—Any person giving an order to a member of this Association to buy or sell any stocks, and who shall default in said order or contract, it shall be the duty of said member to report the name of the person to the Association, and the Secretary shall keep a black list of such parties, which list shall always be open to members of the Association only, and any member failing to comply with this article, upon notice to that effect being given to the President or Vice-President, he shall be suspended for the space of one week from the privileges of the Association.

ARTICLE X—*Amendment of By-Laws.*—Any By-Law may be altered, amended or rescinded by a vote of a majority of the members present, should there be a quorum.

ARTICLE XI—*Other Stock Boards.*—No member of this Association shall be a member of any other association or organization whose members deal in stocks, bonds, &c., in this city, and any member uniting, directly or by partner, with such an organization, shall cease to be a member of this Association.

This rule shall not apply to the New York Stock Exchange or to the New York Gold Exchange.
NEW YORK, March 2, 1876.

NEW YORK STOCK EXCHANGE.

The New York Stock Exchange was founded in 1792. The following agreement, signed by the charter members and others subsequently admitted, was the basis of business until 1820:

We, the subscribers, brokers for the purchase and sale of Public Stocks, do hereby solemnly promise and pledge ourselves to each other, that we will not buy or sell from this day, for any person, whatsoever, any kind of Public Stocks at a less rate than one quarter per cent commission on the specie value, and that we will give a preference to each other in our negotiations. In testimony whereof, we have set our hands this 17th day of May, at New York, 1792.

Lem Bleekez.
Hugh Smith.
Armstrong & Barnewall.
Samuel Marsh.
Bernard Hart.

Sutton & Hardy.
Benjamin Seixas.
John Heary.
John A. Hardenbrook.
Amurt Beebee.

Alexander Zunty.
 Andrew D. Barclay.
 Empn. Hart.
 Julian McIvers.
 G. N. Bleecker.
 Peter Inspach.

Benjamin Winthrop.
 James Ferrers.
 Isaac M. Goomez.
 Augustine H. Lawrence.
 John Besly.
 Charles McIvers, Jr.

David Reedy, November 13, 1792.

Robinson & Hartshorn, November 13, 1792.

Daily meetings and the regular call of stocks commenced in 1820. The sessions of the Board were held at various places—first, in a room in the neighborhood of Chancery Court; then in the room of some broker; with occasional out-door meetings under a button-wood tree on Wall street, near Pearl. Finally, the Board established itself in the Merchants Exchange, where it continued to hold its sessions until 1853. It then moved into a room in the Commercial Exchange Bank building, where it remained until 1858. From 1858, until December, 1865, it occupied rooms in Lord's Building, with entrances on William and Beaver streets. It then moved to its present quarters. The present Exchange Building, although commodious and well located, is far from meeting the requirements of the Board, and it is probable that a new building will, at no distant day, be erected.

A parchment book, containing the signatures of the members of the Stock Exchange from the date of organization, shows the autographs of Mr. Charles Marvin, one of the oldest and staunchest members now living; Mr. Charles Graham, also living at the present time; and many other prominent gentlemen who are still connected with the Exchange, among whom we noticed the name of Mr. Henry G. Stedman, the oldest and one of the most esteemed members living, who has just been made President of the Rapid Transit Committee. Mr. Stedman is widely noted for his brilliant oratorical powers and remarkable talents as a public speaker.

The three boards—the New York Stock Exchange, the Open Board of Brokers, and the United States Government Board were consolidated in May, 1869. The first president elected was Mr. William Nelson; next in successive order were Messrs. William Seymour, Jr., William B. Clarke, Edward King (who is now President of the Union Trust Company), Henry G. Chapman, George M. Broadhead, George W. McClean, Salem T. Russell, Henry Meags, and lastly Brayton Ives, now presiding. These gentlemen were elected in the month of May of each consecutive year, in the order in which they are mentioned.

No president has ever been re-elected, each having served for a single term of one year; a new departure will be made this year, however, in the nomination of Mr. Brayton Ives, the present incumbent, for a second term.

During the war, the Stock Exchange, for the purpose of sustaining the Government, passed a resolution prohibiting members from selling Government bonds "short," and another forbidding all dealings in gold. The passage of these resolutions cost the members of the Exchange millions of dollars, but was of incalculable value to the Government. It was through this action of the Stock Exchange that the formation of the Gold Exchange was brought about.

The New York Stock Exchange is one of the most important financial organizations in the world. It may be likened to the great balance wheel, governing and regulating a gigantic power which moves all the intricate machinery of capital in this country, and largely affects all the monetary interests of great foreign centres of trade. Its membership comprises a class of men in whom immense wealth, extraordinary enterprise, unusual alertness, and exceptional abilities, are respectively leading characteristics. The operations are of mighty import, the transactions leap to and fro instantaneously, and almost lightning calculations must flash through the brain to meet emergencies. At any hour, the even tenor of the always stirring events may be changed to a whirlwind of excitement. A crisis in certain stocks is a periodical occurrence, and panics may rage at almost any season. Men who pass their days and lives in this atmosphere have a constant tension of nerve and sudden shocks of mental excitement that can only be appreciated by realization; description of the strain on vitality is simply impossible. It seems like a rapid transit to death. But on an average they are healthy men, because their nerves, minds, and bodies are trained to it, and fortified for its emergencies.

To-day the New York Stock Exchange has a membership of over one thousand, and for wealth it exceeds all other stock organizations in the world. The daily deposits and credits of brokers in city banks and trust companies, are estimated in hundreds of millions, and the par value of annual sales made at the boards and "over the counter" is computed as considerably exceeding \$22,000,000,000.

The Government and the Open Boards were consolidated with the old historic Stock Exchange in May, 1869, and its organic law is marked by a conservatism that imparts character and strength to the Association, as its high representative position demands.

The office of the president is mainly executive, and there is a Treasurer of semi-annual importance; there is one Vice-President, a Secretary with his assistants, and the Roll-Keeper, severally intrusted with the duties appertaining to similar officers in every organization, and with the special and extremely arduous work incident to the daily sessions. The real executive control, however, now rests with a Governing Committee, consisting of forty members selected from the whole body, together with the President and Treasurer, in their unofficial capacity. All duties of administration, of legislation, devolve on this committee, which is divided into four classes, one of which goes out each year; and the committee, like its associate officers, is subject in a certain degree to the will of its constituency. But beyond its right of election at the annual meeting, the Board is nearly powerless.

The Governing Committee may make or unmake, suspend, expel, or re-admit. It may even alter the entire letter of the constitution or by-laws, and unless two-thirds of all the members of the Association disapprove thereof within one week, the changes become final law. So full an attendance of this Board as is required by this rule is almost unexampled, and the committee is therefore as practically as autocratic as the Venetian Council of Ten.

This Governing Committee, in reference to its varied functions, consists of seven subdivisions, whose duties correspond to the distinct objects for which the Association was created. The most vital of these objects are:

First, the rigid scrutiny of all securities liable to be dealt in by the Exchange.

Second, a proper surveillance over members in respect to their fidelity to contracts, and a stringent examination of the good character and responsibility of candidates for membership.

Third, a systematization of brokerage, so far as it relates to the intercourse of member with member.

No stock, bond or other security can be dealt in by the Board, unless all the financial conditions, capital, number of shares, resources, etc., have been searchingly examined. As an additional safeguard the Exchange binds itself to exclude any active speculative stock of any company which fails to keep a registry of shares in some responsible trust company, bank, or similar agency, and to give due public notice of every intention to increase its capital, either through the conversion of bonds, or by direct issue, with the grounds for such increase.

The rules for the admission of members, and for the government of those already enrolled in the organization, are necessarily very strict. In an arena where a mere nod may seal a contract involving hundreds of thousands of dollars, and a whisper is as binding as the longest and most cunningly phrased agreement of all the lawyers, men must have keen intellects, vast experience, and spotless business reputations. Every debt, as well as every offer made and accepted, must be rigidly fulfilled. A member who fails must notify the President at once; he, in turn promptly announces it to the Board; the Secretary records the name on the fatal list; the stock which has occasioned the default is sold, or bought, in open market *under the rule*; and the broker loses every privilege of the Exchange until his creditors are satisfied and the Governing Committee consents to his reinstatement.

The Exchange has guarded itself against the hazards of failure, compelling "weak" members to supplement their contracts by a heavy money deposit, punishing fraud by expulsion, rendering suspension a severe penalty by its network of rules framed out of extreme solicitude for the rights of the creditor. Not less exacting are the provisions for

new membership. Brokers' clerks—representing that alert, quick-witted, agile class which has grown up under the rough tuition of the street, knows its laws, comprehends the abiding sacredness of its verbal contracts—find the doors of admission open much more readily than do men whose experience is limited to two or three years as capitalist, brokers, or bankers. The latter indeed must show a very clean record, and submit to a scrutiny in its very nature extremely irksome.

In former years the black-ball played an efficient part in winnowing out candidates, and the new regimen, although probably free from the influences of personal dislike, is likely in other ways to be not less exacting.

That portion of the government which concerns itself with the terms of each several class of contracts and the regular order of business, is a curious blending of law and usage; the latter being as strictly enforced as the former, although finding no place in the By-laws.

One point, however, is worthy of particular consideration. In all the great European share-marts, there is a general executive organization, differing only in local details from that by which the New York Exchange is regulated. But the functions of the officers cease at the moment when the real business of a stock-market begins. The syndic of the Paris Bourse, it is true, presides over the daily sessions; but his duties are wholly subordinate, and the *agens de change* in the Corbeille—that basket-like chamber where the *parquet* assembles—direct the market quite at their pleasure. In the London Stock Exchange even this semblance of authority is wanting. The daily meetings are simply the confluence of a mob, in which everybody bargains with everybody, where there is no order, no system, and no record of transactions.

The New York Stock Exchange in this regard has a completeness to be found in no similar transatlantic organization. The securities dealt in by the Board are divided into two classes, known respectively as the Regular and the Free List. No bond or stock has been, or can be enrolled, in either of these classes, without due scrutiny in committee; and the ground of separation is simple. The regular list must be called in sequence by the Chairman in the chair; the free list may, or may not be called, at the option of members; of course the former is the important class, and includes nearly three hundred distinct securities, comprising all the great railway shares and bonds, State and city securities, bank stock, and a curious *mélange* of express, telegraph, mining shares, etc., enumerated as "miscellaneous."

At half-past ten o'clock in the morning, daily, the Chairman ascends the rostrum in the official chamber of the Stock Exchange, and goes through with the selected list thus: Miscellaneous stocks; railroad stocks; State bonds; city stocks; railroad bonds. The assembled brokers, with their budget of orders, wait expectant, and the instant a stock is reached that is in their day's book, they spring into the arena with their bid or offer. When a "speculative," or favorite stock is called, the excitement heightens, and the air is rent with their rival shouts. The presiding officer repeats the transactions to the Assistant Secretary at his side, who promptly records them, while the "marker," or blackboard clerk, writes off the prices upon the table at the head of the room. Where there is a doubt regarding buyer or seller, the Chairman decides, subject to immediate appeal in case of dissatisfaction, such brokers only as witnessed the transaction voting.

As soon as the regular call is completed, the free list is in order, and the Chairman repeats the name of such stocks as the members may select for dealings, the Assistant Secretary recording every bid, and the accompanying details. After this the session closes, unless the members in attendance wish to call up anew particular stocks on the regular list; this provision allows of dealings in those securities which were hastily passed over in the routine morning call.

At one o'clock the afternoon session is held, over which the second Vice-Chairman usually presides. The usages of the morning board prevail here as well. The Vice-Chairman holds the market in his hands, directs all movements, announces each transaction, and arbitrates all disputes. The Assistant Secretary also renews his record of all bidding, and in his book at the close the whole history of the day appears.

Fifteen minutes before the first meeting of the Regular Board the Government Board begins its sessions in an adjoining chamber. The same routine is observed: a Vice-Chairman

directs the market ; an Assistant Secretary notes down against each class of national securities, as it passes the gauntlet of the brokers, the prices offered and demanded, and every important feature of a transaction, in case of positive sale. Were the stock dealings of Wall street limited to these two rooms, an efficient safeguard would exist against some of the most perilous phases of speculation. But it has happened, partly on account of the great volume of daily business, that members may bargain with members for the sale and purchase of active stocks through the day, and which is continually done by groups about the room or main hall.

Next in usefulness, of the officers, is the Roll Keeper, who records the fines ; and no body of men, to all appearance, are more fond of breaking over all minor rules and promptly meeting the penalty than New York stockbrokers. The annual dues of the Exchange are only fifty dollars, but the fines of individual members sometimes aggregate to nearly ten times that sum. Any interruption to the presiding officer, while calling stocks, renders a broker liable to a penalty of " not less than twenty-five cents " for each offence. To smoke a cigar within the Exchange costs five dollars. The same fine, or less, at the discretion of the President, is imposed for non-attendance at special meetings. A broker cannot stand on a table or chair without paying a fine of a dollar, and if he innocently flings a " paper dart " at a neighbor, he is fined ten dollars, and all the way from one to five dollars to do anything, not enumerated in these offences, which may be judged indecorous by the presiding officer. Thus it will be seen that the business of stock brokerage—that is, all the business as regulated by the stringent rules of the Stock Exchange, is absolutely surrounded by the most complete protection against irresponsibility, and, as far as any legitimate avocation can be, is rendered unquestionably honorable, legitimate, and thoroughly reliable.

When men embark their capital in any venture they must recognize and count upon their chances of profit and loss. This is as true in reference to stock dealing as it is in regard to the sale of any commodity. The buyer considers, and seizes the most opportune condition of the market to obtain possession, and at the moment of greatest advantage as quickly grasps the opportunity for sale.

It is a business of rapidly fluctuating—indeed, at times instantaneous—changes, either for profit or loss. In illustration : The purchaser of Erie in 1860 would have found one dollar turned to twelve in May, 1863. In four years a dollar in Michigan Southern would have changed to twenty-three. Two thousand in Prairie Du Chien would have become ninety thousand in 1863 ; ten thousand in Cleveland and Pittsburg would have bloomed into two hundred thousand by April, 1864.

Capitalists depend upon their brokers for the conduct of the battle in the stormy arena of the Stock Exchange. While they may direct the assault or the retreat, the sortie or the skirmish, yet when the work begins, everything devolves upon the prescience, alertness, and finessé of the operator on the floor ; and it is rarely that such confidence is misplaced.

In no plane of life is there a larger measure of responsibility delegated than that committed to the stock broker, and no class of men average a cleaner record.

For the convenience of members the following extracts from and interpretation of the by-laws are given :

Powers of attorney or substitution signed by trustees, guardians, infants, executors, administrators or Attorneys are not good delivery. (By-laws, article 9).

When transfer books are closed by legal impediment, power of attorney must be acknowledged before a notary public with seal and date. (Article 10, by-laws).

Certificates in a name, not a member of the New York Stock Exchange, must be witnessed or guaranteed by a member of the Exchange, or a firm represented there. (Article 9, by-laws).

An endorsement by a member of the Exchange, or a firm represented at the Exchange on a certificate, is considered a guarantee of the correctness of the signature of the party in whose name the stock stands. (Article 9, by-laws).

A detached power of attorney or of substitution must be acknowledged or proved before a notary public, with seal and date. (Article 9, by-laws).

Certificates in the name of an institution or a name with title affixed—as cashier, president or other official designation, are not a good delivery, unless assignment or power is acknowledged before a notary, with seal and date, who must certify that he knows the person signing, and knows him to be

the person authorized, and that he has seen the minutes of the institution authorizing said person to make the assignment.

Certificates in name of a deceased member, or of a firm which has ceased to exist, are good delivery only during closing of the transfer books, and when acknowledged or proved as defined in Article 10, by-laws.

Certificates in name of individuals or firms which have ceased to be members of the Exchange, are not a delivery; unless in conformity to article 9, by-laws.

When a claim is made for dividend on Stock, after the transfer books have been closed, the party in whose name the stock stands may require from the claimant presentation of the certificate and a writing with notarial or consular acknowledgment, that he was the holder of the stock at the time of closing of the books, and also a guarantee against any future demand for the same.

Acknowledgment of a power of attorney—The notary must certify that he knows the person signing the power to be the person named in the certificate, and that he acknowledged the signature.

If proved by a witness, he must swear that he knows the individual to be the one named in the certificate, that he saw him execute and deliver, and that he acknowledged to him that he did execute, &c.

Bonds with a stamp or endorsement that they have been deposited with States, as security for Bank circulation or insurance, must be released and acknowledged before a notary.

Bonds filled up with a name to order must be assigned to bearer, and acknowledged before a notary.

A word upon a bond as Smith, Brown, Bank, Canton—is no detriment to it, but if John Smith, John Brown, Bank of America, Canton Company, it is a definite name, and is regarded as implying ownership, and must be released and acknowledged before a notary same as though payable to order.

Coupon bonds. Delivery must be of the denomination of \$1000 or \$500. Large bonds (over \$1000) or small bonds (under \$500) good only in special transaction.

Registered bonds.—Deliveries must be in sums not exceeding \$10,000.

Coupons on a bond must be those which properly belong to it, corresponding in number. In case of absence of any coupon its full face amount in money is a good substitute.

Bonds, which can be registered in a name or to bearer, and which have been registered in a name, must be registered to bearer to be a delivery.

Mr. Brayton Ives, President of the Stock Exchange, was born and reared in the State of Connecticut, and is now thirty-eight years of age. He graduated at Yale in 1861, and immediately entered the army, receiving his diploma in uniform. He stayed in the army during the entire war and came out in the year 1865, as Colonel of the First Connecticut Cavalry. Six months after his retirement from the service at the end of the war, Mr. Ives was brevetted Brigadier General through the recommendation of General Sheridan. Mr. Ives is a practical miner, having had two years' of active experience among the gold mines of Nova Scotia after the close of the war. During these years he superintended two or three mines and owned considerable stock also. He came to New York in 1867, and has remained here ever since. He was a member of the firm of Johnson & Ives for five years from this date, and has been connected with the present firm, Brayton Ives & Co., for seven years.

Mr. Brayton Ives has been more identified with the mining interests of the Stock Exchange than perhaps any other member. He determined that they should have a chance there, and he has succeeded. It was through his exertions mainly, that the differences between the Mining Exchange and Stock Exchange were harmoniously settled, resulting in the waiving by the former, of their rule, which gave to the latter the privilege of introducing mining stocks into the Stock Exchange in February last. No one has, during the past two or three years, done more to further the interests of legitimate mining corporations in the Exchange.

In 1848 Mr. B. O. White, the present Secretary of the Stock Exchange, was chief clerk at the counter in the banking house of Pepon, Hoffman & Tenbrook. He was admitted to the Board for the first time in 1852 or 1853; later was connected with the firm of White & Strong, which at one time did quite a large and flourishing business, but afterwards met with serious reverses and dissolved. He was about this time re-admitted to the Stock Exchange. He subsequently received a very large salary with Messrs. C. A. Meigs and Son; in fact, he is said to have been a partner of that concern. At all events he left the firm with quite a fortune and opened business on his own account. Mr. White was appointed to the

Secretaryship of the Exchange in 1870 and has occupied that position ever since. He is liked very much, and is looked upon as the very essence of integrity and uprightness. No one ever pretends to oppose him; at least, he met with opposition but once, and the fate of his opponent discouraged all other attempts.

Mr. Dewitt C. Hays, Treasurer, has been connected with the Stock Exchange for a long while and is universally looked upon as a man well qualified to occupy this responsible position. He is regarded as the very essence of integrity and uprightness, and is liked very much. Owing to this fact no one ever pretends to oppose him. Mr. Hays has been president of the Union National Bank for many years.

Constitution and By-Laws.

CONSTITUTION.

ARTICLE I.—TITLE OF THE ASSOCIATION.

The title of this Association shall be the "NEW YORK STOCK EXCHANGE."

ARTICLE II.—ELECTIONS, OFFICERS AND ASSISTANTS.

SECTION 1. The whole government of the Exchange shall be vested in a Governing Committee, composed of the President and Treasurer of the Exchange and of forty members elected in the manner hereinafter provided. The members of the Governing Committee, together with the Vice-President and Secretary, shall be the officers of the Exchange.

There shall also be annually elected, or appointed, as hereinafter provided, a Chairman, a Vice-Chairman, and a Roll-Keeper.

SEC. 2. The President, Treasurer, Secretary, Chairman and Vice-Chairman, shall be elected by ballot, on the second Monday of May, in each year.

There shall also be elected, at the same time, ten members of the Governing Committee, to fill the vacancies occasioned by the outgoing class, and to hold office for the four years ensuing, and also members to fill any vacancy or vacancies in the other classes, for the unexpired terms. The candidate or candidates having the largest number of votes shall be declared elected.

SEC. 3. The Governing Committee, at its first meeting after the annual election, shall choose from its own members the Vice-President of the Exchange. It shall also appoint the Roll-Keeper.

SEC. 4. In case a vacancy shall occur in either of the offices of President, Treasurer, Secretary, Chairman or Vice-Chairman, a new election by ballot shall be held forthwith to supply such vacancy.

In case a vacancy shall occur in the Governing Committee, by resignation or otherwise, it shall be filled by said Committee until the next annual election, when the Stock Exchange shall fill the vacancy for the unexpired term.

In case a vacancy shall occur in the office of Vice-President or in the position of Roll-Keeper, the same shall be filled by the Governing Committee at its next meeting.

SEC. 5. No person shall be eligible to any office in the Stock Exchange, who shall not be, at the time of his election, a member in good standing.

ARTICLE III.—GOVERNING COMMITTEE.

SECTION 1. All powers necessary for the government of the Exchange shall be vested in the Governing Committee. They shall have power to try all offences under or against the laws of the Exchange, and all charges against members; and their decision shall be final.

SEC. 2. The Governing Committee may, at any time during the pendency of a case before any of the Standing Committees, ask for such information and give such instructions as they may deem proper.

SEC. 3. Any member of a Standing Committee, before which a case may be pending, shall have the right, during the consideration of such case, or within two days after a decision has been made thereon, to demand a reference of the same to the Governing Committee for final adjudication; and the Chairman of the Standing Committee shall notify the President of the Governing Committee of such reference at the next regular meeting. No member of the Governing Committee shall participate in the adjudication of a case in which he is personally interested.

SEC. 4. The President may call a meeting of the Governing Committee at any time. He shall call a meeting at the request of ten members. In the absence of the President, any ten members of the Governing Committee may call a meeting by written announcement from the rostrum.

A majority of all the members of the Governing Committee, or of any sub-committee, shall be necessary to constitute a quorum.

SEC. 5. Any member of the Governing Committee who, except in case of illness or leave obtained from the Presiding Officer, shall absent himself from the meetings of the Committee during three consecutive regular meetings, shall, *ipso facto*, cease to be a member of the Governing Committee; and the vacancy so occurring shall be filled as provided in Art. II. of the Constitution.

ARTICLE IV.—STANDING COMMITTEES.

As speedily as possible after each annual election, the Governing Committee shall appoint from its own members the following Standing Committees for the year. Should special exigencies require, the

President shall have the right to appoint Committees *ad interim*, to act until the regular appointments are made.

First.—A Finance Committee, who shall have control of all disbursements. They shall hold regular monthly meetings at a date prior to that fixed for the first monthly meeting of the Governing Committee, at which meeting shall be examined the trial balance of the various accounts, with the necessary vouchers; and they then acting as a Board of Audit, shall certify to the same by endorsing it, and handing it to the President.

Second.—A Committee of Arrangements, to whom shall be referred the enforcement of all rules and regulations necessary to good order and the comfort of the members. They shall determine the number, duty and pay of all employees other than the officers; and shall have the general supervision of all the departments of the Stock Exchange. They shall present to the Governing Committee, at the first regular meeting in the months of January, April, July and October, a report of their disbursements during the preceding three months.

Third.—A Committee on Admissions, to consist of fifteen members, to whom shall be referred all new applications for membership, and all applications of suspended members for re-admission. But no application for admission or re-admission of a person who has ceased to be a member of the Exchange through violation of its Constitution or By-Laws shall be referred to the Committee on Admissions, unless he has first obtained the consent of two-thirds of the members of the Governing Committee present when such application is considered.

They shall determine the manner and form in which their proceedings shall be conducted. Two-thirds of the Committee approving, the candidate shall be declared elected or re-elected, to a membership in the Exchange.

The Chairman of the Committee shall inform the Presiding Officer of the Exchange of the admission or re-admission of any applicant, and the said Presiding Officer shall announce the same to the Exchange.

It shall also be the duty of this Committee to consider and dispose of all applications for the transfer of membership under Article XIII of the Constitution.

The members of this Committee who shall attend the meetings shall receive Five Dollars each for every meeting; to be paid by the Exchange. The compensation of the Chairman shall be fixed at the rate of Fifteen Hundred Dollars per annum, in lieu of all other compensation.

Fourth.—A Committee on Securities, to whom shall be referred for adjudication all disputed questions as to the regularity of Stock Certificates, Bonds, &c. (other than those of the U. S. Government) dealt in at the Exchange, and all applications for placing on the list the securities of the several States.

Fifth.—A Committee on Government Securities, to whom shall be referred all applications for placing on the List the issues of the Securities of the United States Government; and, for adjudication, all disputed questions in regard to the same.

Sixth.—A Committee on Stock List, to whom shall be referred the arrangement of the Calls of Stocks and Bonds, and all applications for placing Stocks, Bonds, &c., other than the Securities of the United States Government, and of the several States, on the List dealt in at the Exchange.*

They shall also have power to transfer Stocks and Bonds from the free list to the regular list, and from the regular list to the free list, as they may deem proper.

Seventh.—An Arbitration Committee, to consist of nine members, whose duty it shall be to investigate and decide all claims and matters of difference between members of the Exchange, arising from transactions in Bonds, Bullion, Stocks, or other Securities, or from any transactions in money. Provided, however, that the Arbitration Committee shall, on the application of either one of the parties, or at their discretion, have the power to dismiss the case, and refer the parties to their legal remedy. They shall also adjudicate such claims arising from differences, as aforesaid, as may be preferred against members by non-members, when such non-members shall agree to abide by the rules of the New York Stock Exchange, in such cases provided (*Vide* By-Laws, Art. XXVIII.) The decision of this Committee shall be final in all cases, unless an appeal be taken by a member of the Committee, as provided in Art. III., Sec. 3, Constitution, or in cases involving a sum of \$2,500 or over, when either party may appeal, within ten days, to the Governing Committee for a final adjudication.

The members of the Arbitration Committee present shall receive Five Dollars each for hearing a case that shall be heard and decided at one meeting. For all cases occupying the attention of the Committee at more than one meeting, Ten Dollars. No compensation to be paid to any member absent from the meetings of the Committee.

The Chairman of the Arbitration Committee shall receive an additional fee of Five Dollars in each case.

The losing party in all adjudicated cases to pay the expenses.

Eighth.—A Law Committee, to whom shall be referred all questions of law affecting the interests of the Exchange.

Ninth.—A Committee on Printing, whose duty it shall be to order and supervise the printing for the Exchange.

Tenth.—A Committee on Commissions, whose duty it shall be to see that the rules relating to commissions are complied with, and report to the Governing Committee any violation thereof.

Eleventh.—A Committee on Insolvencies, to consist of three members, shall be selected by the Committee on Admissions from their own number at their first meeting in each year, whose duty it shall be to investigate every case of insolvency immediately after the announcement thereof to the Exchange. Should they ascertain the same in any case to have been occasioned by reckless dealing, or doing business for improper parties, they shall report the result of their examination to the Governing Committee. They shall also deliver, in every case, a copy of their records to the Committee on Admissions. Vacancies occurring in this Committee shall be filled by the Committee on Admissions from their own number.

ARTICLE V.—DUTIES OF THE PRESIDENT AND VICE-PRESIDENT.

It shall be the duty of the President to see that the several provisions of the Constitution and By-

* All applications for the admission of Securities to the Stock List shall be accompanied by a fee of Fifty Dollars, to cover the cost of printing and other expenses of the Committee; said fee to become the property of the Exchange, whether the application is accepted or rejected.

Laws are enforced, and to have a care of the general interests of the Exchange. He shall be entitled to preside over the Exchange during debate, or whenever he may elect so to do, and he shall be a member and President of the Governing Committee.

The Vice-President shall, in the absence of the President, assume all the functions and powers, and discharge all the duties of President.

In case of the temporary absence or inability to act of both the President and Vice-President, the Governing Committee may choose from their own number an acting President of the Exchange, *pro tem.*

ARTICLE VI.—CHAIRMAN AND VICE-CHAIRMAN.

It shall be the duty of the Chairman to preside over the Board whenever it shall be assembled for business; to call Stocks and Bonds, maintain order, enforce the rules, and perform such other duties as the Governing Committee may regard as properly pertaining to the office.

The Vice-Chairman, in the absence of the Chairman, shall assume all his duties and functions.

Neither the Chairman nor the Vice-Chairman shall be permitted to operate in Stocks during the period he is presiding.

In the absence of both, the President may appoint, or the members present may choose, a Chairman *pro tem.*, with full powers.

The calls of Stocks in the Government Department, as well as at the Sessions in the Board Room, shall devolve on the Chairman and the Vice-Chairman.

The Presiding Officer shall determine all questions of order.

ARTICLE VII.—TREASURER.

It shall be the duty of the Treasurer to receive and take charge of all moneys, and render a statement of the funds on the second Monday of May, annually, and at such other times as the Governing Committee may require; he shall also be a member of the Governing Committee, and of the Finance Committee.

ARTICLE VIII.—SECRETARY.

It shall be the duty of the Secretary to record in a Book of Minutes the proceedings of the Stock Exchange, and to take charge of the books and papers of the Association. He shall conduct the correspondence of the Exchange, and keep a record of the closing and opening of the Transfer Books for dividends, elections, etc., of the various corporations whose stocks are dealt in at the Exchange, the amount of such dividends, and when payable; and shall post the same on the bulletin-board. He shall also keep a ledger containing the names of all the members, with date of admission by purchase or otherwise, and all transfers of memberships, also a list of suspended members; and shall discharge such other duties as the Governing Committee may regard as properly pertaining to the office. He shall also be the Secretary of the Governing Committee.

ARTICLE IX.—ROLL-KEEPER.

It shall be the duty of the Roll-Keeper to keep a list of the members resident or doing business in New York, to record all fines, and also to report to the Exchange on the first day of May and November respectively, the amount levied on each member, and to collect and pay the same into the hands of the Treasurer.

ARTICLE X.—APPLICATIONS FOR MEMBERSHIP, ELIGIBILITY, INITIATION FEE.

SECTION 1. All applications for membership shall be publicly announced by the Presiding Officer of the Stock Exchange, together with the name of the member nominating, and the name of the member seconding the applicant.

SEC. 2. Every applicant for membership must be at least twenty-one years of age.

SEC. 3. The initiation fee of members admitted by election shall be *Ten Thousand Dollars*, and that for members admitted by transfer shall be *Five Hundred Dollars*.

In all cases when the initiation fee shall not be paid within five days after the admission of a member, and his notification by the Secretary, such admission shall be declared void.

ARTICLE XI.—MISSTATEMENTS OF APPLICANTS.

Whenever it shall appear to a majority of the Committee on Admissions that a willful misstatement upon a material point has been made to them by an applicant for admission or re-admission, they shall report the case to the Governing Committee, who shall, by a two-third vote of the members present, deprive the offending party of his membership, or declare him forever ineligible for admission, as the case may be.

ARTICLE XII.—PLACES OF BUSINESS, PARTNERSHIPS AND DISSOLUTIONS.

SECTION 1. Every member must have, in the vicinity of the Exchange, a place of business other than the Exchange, where comparisons may be made at any time during the day after the expiration of one hour from the time of the transaction, and where all notices may be served: and it shall be the duty of every member to keep filed with the Secretary a written notice, designating such place of business, and similarly to give notice of any change thereof.

Any member neglecting to comply with this rule may be considered in default on his contracts, and such contracts may be closed out according to Sec. 1, Art. XVIII, of the By-Laws.

SEC. 2. Whenever a member shall form a partnership with any other member, or person, he shall immediately give written notice thereof to the President, and announcement of the same shall be made to the Exchange by the Presiding Officer, and notice of such partnership shall then be posted in the Board room for a period of ten days. Any member failing to comply with this Article shall be suspended, at the discretion of the Governing Committee.

SEC. 3. In like manner notice must be given of any dissolution of partnership; and it shall be the duty of the Secretary to keep a record of all partnerships and dissolutions.

ARTICLE XIII.—TRANSFER OF MEMBERSHIP.

Any member shall have the right to transfer his membership under the provisions of the following Sections:

SECTION 1. When any member wishes to transfer his membership, the name of the proposed transferee shall be submitted to the Committee on Admissions; and, on the approval of two-thirds of said Committee the transfer may be made, provided the member transferring has no unsettled contracts. (*Vide* Const., Art. XIV.)

SEC. 2. When a member dies his membership may be disposed of by the Committee on Admissions; and after satisfying the claims of the members of the Stock Exchange, they shall pay any balance to the legal representatives of the deceased.

In every case where a member is deprived of his membership, or declared ineligible for re-admission by the Governing Committee, by reason of any offense against or under the laws of the Exchange, his membership may be disposed of forthwith by the Committee on Admissions.

SEC. 3. In no case shall any transfer of membership be permitted until all dues to the Stock Exchange shall have been paid in full, said dues being hereby declared a prior lien upon the proceeds, to be satisfied in full before any distribution thereof shall be made.

ARTICLE XIV.—SUSPENDED MEMBERS, RE-ADMISSION, CLAIMS OF CREDITORS, ETC.

SECTION 1. Any member who fails to comply with his contracts, or who becomes insolvent, shall be suspended until he has settled with his creditors. Such member shall immediately inform the President, in writing, that he is unable to meet his engagements; and it shall be the duty of the presiding officer thereupon to give notice, from the chair, of the suspension of such member. The Secretary shall record the failure of such member in a book kept for that purpose.

In default of giving such information, the party, on application for re-admission, shall not be entitled to a reference of his case to the Committee on Admissions, unless two-thirds of the members of the Governing Committee present shall vote in favor of such reference.

SEC. 2. When a suspended member applies for re-admission, he shall be required to furnish to the Chairman of the Committee on Admissions a list of his creditors and a statement of the amounts owing, and the nature of his settlement in each case.

The Committee shall give notice, for three consecutive days, through the Presiding Officer of the Stock Exchange, and by posting the same on the bulletin-board provided for that purpose of the time and place of meeting, to consider the application of the suspended member and the claims of creditors. Upon the applicant presenting satisfactory proof of his settlement with all his creditors, the Committee shall proceed to ballot for him, in accordance with its prescribed rules and regulations. Failing of a re-election, the applicant shall be entitled to be balloted for at any five subsequent regular meetings of the Committee, to be designated by himself. Provided, however, that the six ballotings to which the applicant shall be entitled shall be within one year from the time of his first application for re-admission. If, after six ballotings, as aforesaid, the candidate is rejected, he may appeal, within sixty days thereafter, to the Governing Committee, whose action in the case shall be final.

If rejected by the Governing Committee, he shall cease to be a member of the New York Stock Exchange, and his name shall forthwith be stricken from the roll, and his membership shall be disposed of by the Committee on Admissions.

The question on appeal, however, shall not be taken unless at least thirty-five members of the Governing Committee are present, and it shall require an affirmative vote of at least twenty-nine members to reinstate the applicant.

Whenever the Governing Committee shall determine upon the report of the Committee on Insolvencies, that the failure of a member has been caused by his doing business in a reckless and unbusiness-like manner, he may be declared ineligible for re-admission, by a majority vote of the entire Governing Committee.

SEC. 3. If any suspended member fails to settle with his creditors within one year from the time of his suspension, his membership shall be disposed of by the Committee on Admissions, and the proceeds paid, *pro rata*, to his creditors in the Stock Exchange. The Governing Committee may, by a vote of two-thirds of the members present, extend the time for settlement of such suspended member.

No claims growing out of transactions between partners shall be admitted to share in the proceeds of the membership of one of such partners until after the claims filed by other creditors who are members of the Exchange shall have been satisfied.

SEC. 4. Any creditor failing to file with the Secretary of the Committee on Admissions a written statement of his claim against a member, prior to the transfer of the right of membership of such member, shall forfeit all right to a distributive share of the proceeds of such membership.*

SEC. 5. No member of the Exchange shall be allowed to take as partner any suspended member thereof, during the period of his suspension, or to form a partnership with any insolvent person, or with any person who may have previously been a member of the Exchange, and against whom any member may hold a claim arising out of transactions made during the time of such membership, and which has not been settled or released in accordance with the laws of the Exchange.

ARTICLE XV.—ELECTIONS, QUORUMS, MEMBERS OF A FIRM VOTING, ETC.

SECTION 1. Any member of the Exchange shall be entitled to vote at an election for Officers.

SEC. 2. The members present at the daily sessions of the Exchange shall constitute a quorum for the settlement of disputes growing out of the purchases and sales made during such sessions.

When the Stock Exchange shall be assembled to vote on questions other than the above, a majority of all the members of the Exchange shall be necessary to a quorum.

SEC. 3. But one member of a firm shall be allowed to transact business in the same security, at the same time, or vote on the questions of dispute referred to in Sec. 2.

* No difference growing out of a claim on a Put or Call notified for and reduced to a contract after failure, will be recognized as entitled to a distributive share of the proceeds of a membership.

ARTICLE XVI.—FICTITIOUS SALES, BIDS AND OFFERS.

SECTION 1. No fictitious sales shall be made. Any member contravening this section shall, upon conviction, be expelled.

SEC. 2. Any member who shall make fictitious or trifling bids or offers, or who shall offer to buy or sell a stock or security at a less variation of one-eighth of one per cent, shall, upon conviction, be subject to suspension or such other penalty as the Governing Committee shall impose.

ARTICLE XVII.—PAYMENTS AND DELIVERIES IN CERTAIN CASES TO BE SIMULTANEOUS.

In all deliveries of stocks, bonds, &c., the party delivering shall have the right to require the purchase money to be paid at the time and place of delivery.

ARTICLE XVIII.—COMMISSIONS.

SECTION 1. Commission shall be charged and paid, under all* circumstances, both upon the purchase and sale of stocks, bonds, and other securities, either for members of the Exchange or for other parties, and the minimum rates on all securities, other than Gold, Government Bonds, and Exchange, shall be upon the par value thereof, as follows:

One-eighth of one per cent, when the transaction is made for any party not a member of this Exchange. No business shall be done at less than this rate for any persons or firms not members of this Exchange, nor for any banking or other institution. The minimum rate to members of the Exchange shall be *one-thirty-second* of one per cent, except where one member merely buys or sells for another (giving up his principal on the day of the transaction), and does not receive or deliver the stock, in which case the rate shall not be less than *one-fiftieth* of one per cent.†

SEC. 2. Any member violating this Article, directly or indirectly, shall, upon conviction, cease to be a member of the Stock Exchange, and his membership shall escheat to the Exchange.

Any member who shall be convicted of *offering* to do business for less than the foregoing rates, shall be considered as having violated the Commission Law, and shall be subject to the penalty for so doing.

SEC. 3. The Governing Committee may, in its discretion, suspend the penalties named in the foregoing section.

ARTICLE XIX.—ALL DEBTS BINDING, ETC.

All debts, without distinction, are binding upon the members of the Exchange, and the Governing Committee will take cognizance of them upon complaints properly made and presented. (*Vide* By-Laws, Art. XXVIII.)

ARTICLE XX.—MEMBERS GUILTY OF OBVIOUS FRAUD.

Should any member be guilty of obvious fraud, of which the Governing Committee shall be the judge, he shall, upon conviction thereof by a vote of two-thirds of the members of said Committee present, be declared by the President to be expelled, and his membership shall escheat to the Exchange.

ARTICLE XXI.—OBLIGATION TO ABIDE BY THE CONSTITUTION AND BY-LAWS.—PENALTY.

SECTION 1. Every member shall, within five days after his admission, and his notification thereof by the Secretary, sign the Constitution and By-Laws, and pledge himself to abide by the same, and by all subsequent amendments thereof, and also by all rules or regulations then existing, or which may thereafter be adopted.

SEC. 2. Any member reported to the Governing Committee for refusing to comply with the laws of the Exchange, or for any violation thereof, shall be allowed an opportunity of being heard before them; and if said Committee decide that the complaint is proved, they shall inflict such penalty as may be prescribed by the Constitution or By-Laws; or where no penalty is specified, such as they may deem proper, according to the gravity of the offense.

SEC. 3. No expulsion or suspension of a member shall affect the rights of creditors as provided for in the Constitution and By-Laws.

ARTICLE XXII.—LEGAL INTERFERENCE WITH OFFICERS OR COMMITTEES.

Any member of the New York Stock Exchange, who shall himself, or whose partner or partners

* What is known as a "turn" of stocks or bonds involves two transactions, viz., a purchase and a sale, and a commission must be charged upon each.—*Resolution of Governing Committee.*

† The Governing Committee, at a meeting held June 2d, 1875, confirmed the following Rulings of the Committee on Commissions:

1st. It is the decision and ruling of this Committee, that a less charge than seven per cent interest for carrying stocks, allowing any interest on short sales, or in any way, directly or indirectly, making any arrangement *having in view a rebate on one-eighth per cent commission*, is an evasion and a violation of the Commission Law.

2d. That, under all circumstances, joint account transactions between members and non-members of the Exchange must be charged one-eighth per cent commission.

3d. No member or firm can speculate on his or their account, on the guarantee against loss of a non-member for any portion of the profits, without charging that account one-eighth per cent commission.

4th. No *bo us* or *pro rata* percentage of commission can be given any clerk or individual for business procured for any member of the Exchange.

5th. Partners who are not members of the Exchange must be charged full rates upon their individual business.

6th. Any person or firm having speculative accounts under any name not defining the individual or parties interested, such as "Lake Shore," "Eric," "Union Pacific," &c., &c., in which a non-member is a copartner, must be charged one-eighth per cent.

7th. The giving up of a Clearing House on transactions on the floor of the Exchange, shall not be considered as the giving up of a principal, unless a member of the Clearing House gives the order, and is responsible therefor.

And June 26th, 1878, the following ruling:

In case stocks are received or delivered on *privileges*, the following ruling shall be observed:

When payment is tendered with a "call" or stock is tendered with a "put" without notification, the rate of commission may be subject to agreement; but in all cases where payment or stock is not so tendered with the privilege, the full rate of commission shall be charged on such receipt or delivery.

shall apply for an injunction or legal instrument restraining any Officer or Committee of the Exchange from performing his or its duties under the Constitution and By-Laws, shall by that act cease to be a member of the Association.

ARTICLE XXIII.—ALTERATIONS OF THE CONSTITUTION AND BY-LAWS.

All alterations of the Constitution and By-Laws shall be made by the Governing Committee, and shall be submitted to the Stock Exchange, and if not disapproved by two-thirds of all the members in good standing within one week, they shall stand as the law of the Association.

But no alteration of the Article now known as Article XXIV. shall ever be made which shall impair, in any essential particular, the obligation of each member to contribute as therein provided to the provision for the families of deceased members.

ARTICLE XXIV.—PROVISION FOR THE FAMILIES OF DECEASED MEMBERS.

Every member of the New York Stock Exchange shall be subject to the conditions, and entitled to partake of the benefits of the plan for providing for the families of deceased members hereinafter set forth:

1. Upon the death of any member of the Exchange, there shall be levied and assessed against each surviving member the sum of Ten Dollars, which shall thereupon become a due from him to the Stock Exchange, and charged against the membership of such surviving member, to be collected as other fines and dues are or may then be collected.

2. The faith of the New York Stock Exchange is hereby pledged to pay, within one year after proof of death of any member, out of the money so collected the sum of Ten Thousand Dollars, or so much thereof as may have been collected, to the persons named in the next section, as therein provided, which money shall be paid as a *gratuity* from the surviving members of the Exchange, free from all debts, charges, or demands whatever.

3. Should the member die leaving a widow and no children, then the whole sum shall be paid to such widow for her own use.

Should the member die leaving a widow and children, then one-half shall be paid to the widow for her separate use, and one-half to the children for their use, share and share alike; provided, that the share of minor children shall be paid to their guardian, and that the issue of any deceased child shall be entitled to receive the share which said child would have received if living; if of age directly, or if minors, through his, her, or their guardian or guardians.

Should the member die leaving children and no widow, then the whole sum shall be paid to the children, as directed in the preceding section to be done with the moiety.

Should the member die leaving neither widow nor children, then the whole sum shall be paid to the next of kin of the deceased.

In all cases a certified copy of the proceedings before a Surrogate or Judge of Probate shall be accepted as proof of the rights of the claimants, be deemed ample authority to the Stock Exchange to pay over the money, shall protect the Exchange in so doing, and shall release the Exchange forever from all further claim or liability whatsoever.

4. Nothing herein contained shall ever be taken or construed as a joint liability of the Exchange or its members for the payment of any sum whatever; the liability of each member, at law or in equity, being limited to the payment of Ten Dollars only on the death of any other member, and the liability of the Exchange being limited to the payment of the sum of Ten Thousand Dollars (or such part thereof as may be collected), after it shall have been collected from the members, and not otherwise.

5. Nothing herein contained shall be construed as constituting any estate *in esse* which can be mortgaged or pledged for the payment of any debts; but it shall be construed as the solemn agreement of every member of the Stock Exchange to make a voluntary gift to the family of each deceased member, and of the Exchange to collect and pay over to such family the said voluntary gift; it being understood and hereby expressly declared, that the provisions of this Article XXIV. of the Constitution shall only be in force in, and apply to, cases of death which shall take place after its adoption.

6. It is hereby made the special duty of, and enjoined upon the Governing Committee of the Exchange, to increase the surplus revenues of the Exchange as far as possible by rigid economy of expenditures, and by increase of receipts in every legitimate way, for the purpose of accumulating a fund to be styled the "Gratuity Fund," to be administered and applied as hereinafter directed.

7. The management and distribution of the Gratuity Fund, and the execution of the provisions of this article, shall be under the charge of a Board of Trustees, to be known as "The Trustees of the Gratuity Fund," and to consist of the President and Treasurer of the Exchange, and of five other trustees who shall each hold office for five years, and one of whom shall be elected by the Exchange by ballot, at each annual election.

In case of any vacancy occurring, the Governing Committee shall fill the same until the next annual election, when the Stock Exchange shall choose a trustee for the unexpired term.

It shall be the duty of the Trustees of the Gratuity Fund to keep securely invested, in accordance with the laws of the State of New York regulating Trust Funds, all moneys paid to them for the Fund, together with the annual interest and accretions arising from the same. They shall have power to choose their own chairman, and adopt such by-laws as may be needful, subject to the approval of the Governing Committee, and they shall make an annual report to the Exchange of the condition of the Fund.

As soon after the adoption of this article as the convenience of the treasury will allow, the Treasurer of the Stock Exchange shall pay to the Trustees of the Gratuity Fund, the sum of ten dollars for each member of the Exchange, said payment to be charged against each member, and collected together with his other dues when they next become payable; and every person who shall become a member of the Exchange after the adoption of this article, shall pay to said Trustees the sum of ten dollars before he shall be admitted to the privileges of membership.

Whenever the annual income of the Stock Exchange shall exceed its actual current expenses by the sum of ten thousand dollars, the surplus shall be divided as follows: Each member shall be credited with his proportion of one-half of the total amount divided, in reduction of his annual dues; the other half shall be paid over to the Trustees of the Gratuity Fund.

Whenever the number of deaths of members of the Exchange shall exceed fifteen in any one year, it shall be the duty of the Trustees of the Gratuity Fund to pay out of the Fund to the credit of the surviving members, in reduction of their dues for that year, such sums as may be requisite to limit the total payments of each member under this article to one hundred and fifty dollars in any one year; provided, however, that should the Fund be exhausted, the liability of each member to make payments in excess of one hundred and fifty dollars, shall not thereby be impaired, but on the contrary, shall remain in full force.

Whenever the Gratuity Fund shall amount to one million dollars, the trustees shall divide the annual income among the members, to be credited in reduction of their annual payments under this article.

8. The provisions of this article shall not extend to any member who shall have severed his connection with the Exchange by the transfer of his membership, whether the same is made voluntarily or involuntarily, nor to any member who now is, or hereafter may be expelled by the Governing Committee, but shall extend to suspended members.

9. The membership of a deceased member, from the date of his death until sold, shall be subject to the same assessments, under the provisions of this article, as the memberships of the surviving members during that period.

BY-LAWS.

ARTICLE I.—HOURS OF BUSINESS.

SECTION 1. The Exchange shall be opened for the entrance of members upon every business day at ten minutes before ten o'clock A. M.

At ten o'clock precisely the presiding officer shall announce from the rostrum that the Exchange is opened for the transaction of business, and it shall remain open for such purpose until three o'clock P. M., when the presiding officer shall similarly announce it closed.

Dealings shall be limited throughout the entire year to the interval between the hours above named, unless otherwise ordered by the Governing Committee, and a fine of fifty dollars for each offense shall be imposed upon any member who shall directly or indirectly make any transaction in stocks or bonds before or after those hours, in the Exchange or its vicinity.

SEC. 2. The Exchange shall not be closed at any time between the hours above named, except by order of the Governing Committee. While so closed, the same penalty shall apply to dealings outside of the Exchange as during the regular time of closing.

ARTICLE II.—CALLS.

SECTION 1. The order of business at the regular calls shall be as follows, viz.:

1. Calling the regular list of Stocks or Bonds.
2. Calling Stocks or Bonds on the Free List at the request of members.
3. Reverting to Stocks or Bonds at the request of members.

SEC. 2. After the call of the Regular and Free Lists, any Security thereon may be recalled once without a fine; and afterwards by the payment of a fine of twelve and one-half cents, each time.

SEC. 3. No offers to buy or sell privileges to receive or to deliver Securities, shall be made publicly at the Exchange.

ARTICLE III.—APPLICATIONS TO PLACE STOCKS, ETC., ON THE LIST.

All applications for placing Securities on the regular or free list shall be made to the Committee on Stock List, who shall report the same to the Governing Committee, with a full statement of capital, number of shares, resources, &c.

ARTICLE IV.—REGISTRY OF STOCKS.

The Stock Exchange will not call or deal in any active speculative Stock of any Company, a registry of whose stock is not kept in some responsible Bank, Trust Company, or other satisfactory agency, and which shall not give public notice at the time of establishing such registry of the number of shares so entrusted to be registered, and shall not give at least thirty days' notice through the newspapers, and in writing to the President of the Stock Exchange, of any intended increase of the number of shares, either direct or through the issue of convertible Bonds, and shall not at the same time give notice of the object for which such issue of Stock or Bonds is about to be made.

ARTICLE V.—BIDS AND OFFERS.

SECTION 1. All offers made and accepted shall be binding.

SEC. 2. In all offers to buy or sell, the offer shall be accompanied with some specific number of shares, the par value of which shall not be less than five hundred dollars, and when no amount is named, it shall be considered to be for one hundred shares of Stock, of the par value of one hundred dollars, or ten thousand dollars of Bonds.

No offer to buy or sell a specific lot shall take precedence of any offer to buy or sell a different lot. Offers to buy or sell larger or smaller amounts may be made at the same time and price with one hundred share lots.

SEC. 3. Offers to buy or sell shall be entitled to the floor in the following order:

1. Bids "seller three days," and offers to sell "buyer three days," shall take precedence of cash and regular.
2. "Cash" and "regular" bids and offers may be made simultaneously, as being essentially different propositions.
3. Offers to buy or sell on longer options than three days, may be made at the same time with offers to buy or sell "buyer, or seller three."
4. In offers to buy on seller's option, or to sell on buyer's option, the longest option shall have precedence.

5. In offers to buy on buyer's option, or sell on seller's option, the shortest option shall have precedence.

No other bids or offers shall be permitted, or have any standing upon the floor.

Members violating the provisions of this section may be reprimanded by the presiding officer, and, repeating or persisting in the offense, may be cited to appear before the Governing Committee, who may, in their discretion, suspend the offender for a period of not more than ten days.

SEC. 4. No party to a contract shall be compelled to accept a principal other than the member offering to contract, unless the name proposed to be substituted shall be satisfactory, or shall be declared at the time of making the offer.

SEC. 5. No sale of securities shall be made on which a deposit shall be offered as the limit of liability.

ARTICLE VI.—THE TERM "ABOUT."

In all contracts when the term "about" is used, either as to the time or number of shares, the variation of the former shall not be more than three days, nor the latter more than ten per cent.

ARTICLE VII.—SETTLEMENT OF DISPUTES AS TO PURCHASE OR SALE OF SECURITIES.

SECTION 1. Whenever there is a disputed claim for the purchase or sale of a Security made during the sessions of the Exchange, the Presiding Officer shall decide the same, or he may appeal to the Board for their decision. If an appeal be made from the decision of the Presiding Officer and seconded by two members, the question shall be put to vote.

SEC. 2. In any disagreement between members, growing out of the purchase and sale of a Security or Securities, as soon as the same is ascertained, if not settled by mutual agreement, the money difference shall be established forthwith by purchase or sale by an Officer of the Stock Exchange, wherever the Exchange may be at the time convened.

SEC. 3. Whenever a buyer or seller fails to get the name of the other party to a transaction, he shall give notice at all the calls of the Exchange on the day of the alleged transaction; and if he fails to find the party, he shall cause the Security or Securities to be purchased or sold through an Officer, at the first Call of Stocks on the following day, for account of whom it may concern. In any case of this kind, growing out of an alleged transaction made after the afternoon call, notice shall be given in the Exchange, and at the first regular call of the following day; when, if the party cannot be found, the alleged transaction shall be closed at the next regular Call, in the manner prescribed above.

ARTICLE VIII.—HOUR FOR THE DELIVERY OF SECURITIES.

SECTION 1. All deliveries of securities must be made before a quarter past two o'clock P. M.; and where deliveries are not made by that time the contract may be closed under the rule, after due notice to the defaulting party, in the manner provided in Article XVIII. of the By-Laws. Such notice, however, must be given not later than half-past two o'clock, and the contract must be closed without delay, unless the time for so doing be extended by mutual consent. In the absence of any notice or agreement, the contract shall continue without interest until the following day. In every case of non-delivery, however, the party in default shall be liable in addition for the damages that may accrue.

SEC. 2. This rule shall apply to borrowed and loaned Securities.

ARTICLE IX.—DELIVERIES OF STOCK BY CERTIFICATE AND POWER.

SECTION 1. In the delivery of stock of which but one transfer in a day is allowed, the receiver shall have the option of receiving said stock by certificate and power irrevocable, in the name of, witnessed or guaranteed by a member of the Exchange, or a firm represented at the Exchange, or by *transfer thereof.**

SEC. 2. In all transactions exceeding one hundred shares, where the delivery is by Certificate and Power, the purchaser shall have the right to require the delivery in Certificates of not more than one hundred shares each.

SEC. 3. Powers of Attorney, or substitution, signed by Trustees, Guardians, Infants, Executors, Administrators or Attorneys, shall not be a good delivery.

Detached Powers of Attorney, or substitution, must be attested by a Notary Public under seal.

ARTICLE X.—TRANSFER-BOOKS CLOSED BY LEGAL IMPEDIMENT.—HOW DELIVERIES SHALL BE MADE.

Whenever the transfer-books of any company shall be closed by any legal impediment, so as to render their being open again uncertain, then the deliveries of Stock of such company, in satisfaction of contracts, shall be made by Certificate and Power of Attorney irrevocable, with notarial acknowledgment and seal, and containing Assignment and bill of sale, the papers to be satisfactory to the recipients or passed upon by the Committee on Securities.

ARTICLE XI.—IRREGULARITIES IN DELIVERIES.

Reclamations for irregularities in deliveries of Stocks or Bonds, when such irregularities do not affect their validity, but only currency in market, will not be considered unless made within ten days from the day of delivery.

ARTICLE XII.—STOCKS WHEN DUE.—HOLIDAYS.

SECTION 1. All purchases and sales shall be settled for on the next business day, unless expressed to the contrary, and except in the cases referred to in the following section.

SEC. 2 All contracts falling due on Sundays, or on such holidays as are observed by the Banks, shall be settled on the preceding day.

* In the case of Powers of Attorney, or substitution, not executed, or witnessed by a member of the Exchange, or a firm represented at the Exchange, the endorsement of a member or such a firm is to be considered a guarantee of the correctness of the signature of the party executing the same.—*Resolution Gov. Com., May 24, 1872.*

But where two holidays occur on consecutive days, as where Sunday immediately precede or follows a legal holiday—contracts falling due upon the first of such holidays shall be settled upon the business day immediately preceding, and those maturing upon the second of such holidays shall be settled upon the business day next following the same.

ARTICLE XIII.—CONTRACTS MATURING DURING CLOSING OF TRANSFER BOOKS.—DUE-BILLS.

All contracts in Stocks falling due during the regular closing of the transfer-books of any Company, shall be settled at maturity by the delivery of a Certificate and Power of Attorney, as defined in Article IX. of the By-Laws; and contracts, at the option of the buyer or seller, may be notified for settlement, as if the books were open; and in case the books are closed for a dividend, the party entitled thereto shall receive a due-bill therefor, signed or endorsed by the seller of the stock; but the party entitled to the dividend shall have the right to require a deposit in a Trust Company, payable to the joint order of the purchaser and seller, of the amount of such due-bill.

ARTICLE XIV.—CONTRACTS.

SECTION 1. No contracts for the purchase or sale of securities beyond sixty days shall be made in the Stock Exchange.

SEC. 2. In all contracts on time over three days, made at the option of the buyer or seller, one day's notice shall be given before Securities can be delivered or demanded, and such notice shall be given at or before two o'clock P. M.

ARTICLE XV.—INTEREST.

SECTION 1. No purchase or sale, at the option of the buyer or seller, for three days, or "at three days," shall bear interest. All purchases and sales beyond that time shall be with interest.

SEC. 2. In all time bargains the rate of interest shall be six per cent, to be calculated by days, according to Bank usage.

SEC. 3. The accrued interest on all Stocks and Bonds, not especially excepted in the By-Laws, shall go to the purchaser.

ARTICLE XVI.—DIVIDENDS.

SECTION 1. On the day of closing of the transfer-books of any stock for a dividend, transactions in such stock for *cash* shall be "dividend on" up to the time officially designated for the closing of the books; and all transactions other than for cash shall be "dividend off" after a quarter past 2 o'clock, P. M., or after the closing of the books, should they close before that hour.

SEC. 2. When a dividend is declared on a Security, during the pendency of a contract, the seller shall collect, hold, allow interest on, and pay the same to the buyer on the settlement of the contract.

SEC. 3. Members may charge one per centum for collecting and paying dividends. But where a scrip or stock dividend has been declared by a company, the one per cent shall be upon the *market* value, and not upon the *par* value, of the scrip or stock.

SEC. 4. No offers to buy or sell dividends on Stocks shall be made publicly at the Exchange.

ARTICLE XVII.—MUTUAL DEPOSITS ON CONTRACTS.

SECTION 1. In any contract, either party may call, at any time during the continuance of the same, for a mutual deposit of ten per cent. And whenever the market price of the Securities shall change, so as to reduce the margin of said deposit either way below five per cent, either party may call for a deposit sufficient to restore the margin to ten per cent, and this may be repeated as often as the margin may be so reduced.

In all cases where deposits are called before two o'clock P. M., they shall be made at or before two-and-a-half o'clock P. M. the same day. If called after two o'clock P. M. they shall be made at or before eleven o'clock A. M. of the following day.

SEC. 2. In case either party shall fail to comply with a demand for a deposit, in accordance with the provisions of this article, the party calling, after having given due notice, may report the default to an Officer of the Exchange, who shall repurchase or resell the Security forthwith in the Exchange, and any difference that may accrue shall be paid over to the party entitled thereto.

The notice above referred to shall be either personal or shall be left in writing at the office of the party to be notified, or in case he has no office, then by public announcement whenever the Exchange may be in session.

SEC. 3. Where there is a difference of opinion as regards the place of deposit for the security of purchases and sale, the same shall be made in the New York Life and Trust Company.

ARTICLE XVIII.—DEFAULT—CLOSING CONTRACTS UNDER THE RULE.

SECTION 1. Should any member neglect to fulfill his contract on the day it becomes due, the party or parties contracting with him shall, after giving notice, as required by Section 2 of the preceding Article, employ an Officer of the Board to close the same forthwith in the Exchange by purchase or sale, as the case may require, unless the price of settlement has been agreed upon by the contracting parties.

In case of a failure of a creditor to close the contract as above, the price shall be fixed by the price current at the time such contract ought to have been closed under the rule.

In all cases where an Officer may be directed to buy or sell Securities under this rule, the name of the member defaulting, as well as that of the member giving the order, shall be announced.*

No order for the purchase or sale of Securities, under this rule, shall be executed unless made out in writing over the signature of the party giving the order, who shall state the reason therefor; and it shall be the duty of the Officer who executes the order to endorse thereon the name of the purchaser or seller, the price and the hour at which the contract is closed, and hand the same to the Secretary of the Board, who shall, within twenty-four hours, ascertain whether the party, for whose account the order was given,

* Contracts in Government Securities closed "under the rule" shall be so closed in the room of the Government Department, and in all other securities in the large room of the Exchange.—*Resolution of Gov. Com., Jan. 12, 1869.*

has paid the difference, if any, arising from the transaction. If not paid, the Secretary shall report the default to the President. The duty devolved upon the Officers of the Exchange under this rule shall be performed without charge.

No party shall be permitted to supply offers to buy or sell Securities closed for his account "under the rule."

And when a contract is closed under this rule, any action of the defaulter, direct or indirect, by which the prompt fulfillment of such contract is delayed, hindered or evaded, to the detriment of the other contracting party, shall subject the offending party to suspension for not less than thirty days, or expulsion from the Exchange, in the discretion of the Governing Committee, by a vote of two-thirds of the members present at a meeting.

When contracts are closed out under the rule, any member supplying the bid or offer, and not duly receiving or delivering the stock, as the case may be, renders himself liable to prosecution under this article.

Should any Stock thus sold not be delivered until the next day, the contract shall continue; but the party defaulting shall be liable to pay such damages as may be assessed by the Arbitration Committee.

SEC. 2. The same rules, as to notice, time and place, that govern defaults in other contracts, shall apply to *borrowed* Securities, which, on non-delivery or receipt, must be borrowed or loaned in open market, except in case of actual default in receiving or delivering, after notice to close the loan; then the same are to be bought or sold, as the case may be, for account of the defaulter, in the manner provided in this article.*

ARTICLE XIX.—AGAINST UNITING WITH OTHER ORGANIZATIONS.

SECTION 1. Any member uniting, directly or by a partner, with any organization where Stocks, Bonds, &c., are dealt in, shall cease to be a member of this Exchange. This rule shall not apply to the N. Y. Mining Stock Exchange while its transactions are limited to the class of Securities at present dealt in at that Exchange.

SEC. 2. Any member of the Exchange dealing with a person not a member, in the rooms of the Exchange, shall be subject to the penalty of suspension for not less than sixty days, nor more than twelve months.

ARTICLE XX.—DUES AND FINES—PENALTY FOR NON-PAYMENT.

SECTION 1. The dues of all members of the Exchange shall be payable on May 1st and November 1st of each year, and shall be twenty-five dollars semi-annually, exclusive of fines and of dues under Article XXIV. of the Constitution.

SEC. 2. Any member who shall neglect to pay his fines or dues for three months after they become payable, shall, after due notice, be suspended until they are paid; and if not paid at the end of one year, he shall no longer be considered a member, and his membership may be disposed of by the Committee on Admissions.

ARTICLE XXI.—INDECOROUS LANGUAGE, DISORDERLY CONDUCT, ETC.,—PUNISHMENT.

SECTION 1. Any member who shall, during the Sessions of the Exchange, use indecorous language to another member, or who shall be guilty of conduct subversive of good order and decorum, or of any act or acts whereby the personal comfort or safety of other members is seriously interfered with, shall be fined at the discretion of the Presiding Officer in a sum not exceeding ten dollars, and may, in addition thereto, upon complaint made, be summoned before the Governing Committee, who may suspend him for a period of not more than thirty days. A repetition of the offense may subject him to expulsion; and he shall not be re-admitted except by consent of two-thirds of the members of the Governing Committee present at a session thereof.

SEC. 2. Any member interrupting the Presiding Officer while calling Stocks, by speaking or otherwise, shall pay a fine of not less than twenty-five cents for each offense, at the discretion of the Presiding Officer, from which there shall be no appeal.

The levying of all fines shall rest exclusively with the Presiding Officer.

ARTICLE XXII.—SMOKING FORBIDDEN.

Any member smoking in the business rooms of the Exchange, or in any other part of the Exchange where the Committee of Arrangements may decide to prohibit the same, shall be fined five dollars.

ARTICLE XXIII.—INJURING THE PROPERTY OF THE EXCHANGE, EMPLOYEES, &C.

SECTION 1. If a member injures or destroys the property of the Exchange, it shall be repaired or replaced under the direction of the Committee of Arrangements, and the expense charged to such member, in addition to any fines which may be imposed by the Presiding Officer for the offense, under Art. XXI. of the By-Laws.

SEC. 2. If any employe of the Stock Exchange shall deface the building or injure the property of the Exchange, he shall be discharged forthwith; and if any employe of a member of the Exchange, or of a Telegraph Company, or if any visitor or subscriber shall deface or destroy the property of the Exchange, or be guilty of rude or improper conduct, he shall be excluded from the rooms of the Exchange.

SEC. 3. Any member who shall ignite fireworks, or other explosives or burn papers in any part of the Stock Exchange buildings, shall be subject to a fine of not less than twenty-five dollars; and upon a repetition of the offense shall be summoned before the Governing Committee, who may suspend him for a period of not more than sixty days.

* The ordinary form of notice, to the effect that one party will either buy in or sell out Stock for the account of a defaulting party—or hold said party liable for damages, is not sufficient notice to authorize the closing out of the Stock under the Rule.

But, if it is intended to close a contract under the rule, positive notice of that intention must be given, before 2½ P. M., as required by the By-Laws. (*Resolution Governing Committee.*)

ARTICLE XXIV—SPECIAL MEETINGS—AYES, NOES, ETC.

SECTION 1. Except by unanimous consent, no business shall be transacted previous to the first call of Stocks.

SEC. 2. When any special meeting of the Exchange shall be appointed, the fine for non-attendance may, by a vote of two-thirds of the members present, be fixed at a sum not exceeding five dollars.

SEC. 3. No notice shall be taken of any resolution or resolutions, unless submitted in writing.

SEC. 4. No member shall speak more than twice on any question under discussion by the Exchange, without permission from the Presiding Officer, nor shall any member interrupt another while speaking.

SEC. 5. The Presiding Officer shall not participate in any discussion arising in the Exchange, while occupying the Chair.

SEC. 6. The ayes and noes shall not be called for upon any question, excepting at the request of one-fifth of the members of the Exchange present. When the ayes and noes are ordered, a ballot-box shall be placed on the Secretary's desk, and kept open for the reception of votes from 10½ A. M. until 2 P. M. The vote shall be taken by the deposit of a ballot, endorsed by the member voting, and containing his vote, aye or no. Said ballots shall be placed on file, in alphabetical order, and preserved for fifteen days. The votes shall be entered upon the roll, opposite to the names of the members who have voted, and such roll shall be placed in the Secretary's desk, for the inspection of members.

ARTICLE XXV—ACCESS TO THE MINUTES.

No person shall have access to the Minutes of the Exchange, except the members, or their partners.

ARTICLE XXVI—COMMUNICATIONS INFLUENCING THE MARKET.

No communications having a tendency to influence the market shall be read to the Exchange without the consent of the President or Presiding Officer.

ARTICLE XXVII—INTRODUCTION OF STRANGERS.

No member shall introduce a stranger on the floor of the Exchange unless by permission of the President or Presiding Officer.

XXVIII—ARBITRATION OF CLAIMS.

Any person shall have the right to bring a claim against a member of the Exchange before the Arbitration Committee, arising from transactions in Bonds, Bullion, Stocks or other Securities or from any transactions in money—on the conditions following, and not otherwise.

The person making such claim shall execute a full release of his claim against said member, duly signed, sealed and stamped, and shall deliver the same to the Chairman of the Arbitration Committee to be held in trust, to abide the event of the suit before said Committee.

FORM OF RELEASE.

Know all Men by these Presents, That I, _____, for and in consideration of the sum of One Dollar, to me in hand paid by _____, the receipt of which is hereby acknowledged, have remised, released, and forever discharged, and by these presents I do hereby remise, release, and forever discharge the said _____ of and from any and all demands heretofore existing and due and owing to me, and the said _____ is hereby fully released and discharged from the same.

Sealed with my Seal, and dated at New York, this _____ day of _____ 18____

The Chairman of the Arbitration Committee shall keep the said release in trust, to abide the result of said suit, and shall deliver the same to the defendant in either of the three following cases:

1st. In case the claimant shall not present his claim to the Arbitration Committee within twenty days after executing the release.

2d. In case judgment shall be rendered for said defendant by the Arbitration Committee.

3d. In case the defendant shall pay, or offer to pay, to such claimant the amount of judgment rendered in favor of said claimant.

In case judgment shall be rendered against any member of the Exchange, which he is unable or unwilling to pay, then such release shall be canceled and returned to such claimant.

ARTICLE XXIX.—THE TRUSTEES OF THE GRATUITY FUND.

1. On the first Monday after the annual election of the New York Stock Exchange, or as soon thereafter as may be practicable, the Trustees of the Gratuity Fund shall organize by electing a Chairman, Secretary and Treasurer of the Gratuity Fund, who shall serve for one year or until their successors shall be chosen.

2. There shall be a regular meeting of the Trustees on the third Monday in each month. The Chairman may call a special meeting at any time; he shall call a meeting at the request of two Trustees.

3. At all meetings three shall constitute a quorum.

4. It shall be the duty of the Chairman to preside at meetings; he shall vote on all questions; he shall on the Monday preceding the annual election in the Stock Exchange make a report to the Exchange of the condition of the Fund, with a statement by the Treasurer of receipts and disbursements.

5. It shall be the duty of the Secretary to keep regular minutes of the proceedings of the Trustees, and to give notice of meetings.

6. It shall be the duty of the Treasurer to receive and sign vouchers for all moneys paid to the Trustees, which he shall deposit in such institutions as they may direct, to his credit as Treasurer of the Gratuity Fund of the New York Stock Exchange.

He shall have the custody of all securities belonging to the Fund or held by the Trustees, subject, however, at all times to their examination and direction.

He shall keep or cause to be kept proper Books of Account.

He shall receive and keep a Record of all claims for payment under Article XXIV. of the Constitution of the New York Stock Exchange, and present the same to the Trustees for their action; when allowed and approved by the Trustees he shall pay the same; but no such payment shall be made until directed by the Trustees.

He shall make such investments for the Fund as may be ordered by the Trustees.

His Books shall always be open to the inspection of any Trustee, and he shall make to the Chairman an annual statement of receipts and disbursements.

He shall receive out of the Fund such compensation per annum as may be fixed by the Trustees and approved by the Governing Committee of the New York Stock Exchange.

7. All investments of money belonging to the Fund shall be made by the Trustees as directed by Article XXIV. of the Constitution of the New York Stock Exchange.

All registered stock shall be inscribed in the name and to the order of "The Trustees of the Gratuity Fund of the New York Stock Exchange," but without specifying the individual names of such Trustees, and may be disposed of and assigned by any three of said Trustees.

8. The Treasurer of the Gratuity Fund shall be authorized to receive from the members of the Stock Exchange who may desire to make payments in advance of the regular maturity of their dues under Article XXIV. of the Constitution, any sum not less than Ten Dollars at a time, and issue his receipt therefor; and such receipt shall be received by the Treasurer of the New York Stock Exchange, when the semi-annual dues become payable, as a payment for the amount specified. To facilitate such payments on the part of members, the Treasurer of the Gratuity Fund may avail of the services of the Roll-Keeper of the Exchange.

9. The Trustees shall have power at their discretion to consult and employ legal counsel; they shall be authorized to make disbursements out of the Fund to defray necessary expenses, but no such disbursements shall be allowed without a resolution, specifying the nature and amount of the same, being entered at large upon the Book of Minutes of the Secretary. Each Trustee shall receive from the Fund Five Dollars for every meeting at which he shall be present.

10. In case of a vacancy occurring in the office of Chairman, Secretary, or Treasurer, the Trustees shall forthwith proceed to fill the same for the unexpired term. In case of the temporary absence or inability to act of either Chairman, Secretary or Treasurer, the Trustees shall have power to appoint one of their number to act in his stead *pro tem*.

11. The Governing Committee of the New York Stock Exchange shall at all times have the right to direct the production before them of the Securities belonging to the Fund, the Secretary's Book of Minutes and the Treasurer's Books of Account.

It shall be the duty of the Finance Committee of the Exchange to make an examination of the condition of the Fund once in every year; and said Committee shall have the right at any time to make such additional examination as they may deem proper.

12. The Governing Committee of the New York Stock Exchange shall have the power to try charges against any Trustee for malfeasance or negligence in office, and by a vote of two-thirds of all its members, to suspend him from his functions or declare the office vacant.

13. It shall be the duty of the Treasurer of the New York Stock Exchange to pay over semi-monthly all dues collected under Article XXIV. of the Constitution to the Treasurer of the Gratuity Fund.

ARTICLE XXX.—THE ACCOUNT.

SECTION 1. Transactions may be made in Government Securities for the account under the following regulations:

The 15th and last days of each month shall be known as "settling days," and transactions may be made on any days within those periods for settlement on those days respectively, and without interest.

Transactions made for the account on settling day, unless for cash, shall be considered as for the next account.

Either party to a transaction may call for an original margin of two per cent to be deposited jointly in a Trust Company, and should the market price vary at any time one per cent from the contract price, such difference shall be deposited in the Trust Company by the party against whom it exists when notified in accordance with Article XVII. of the By-Laws.

SEC. 2. A Committee of three shall be appointed by the President, who shall have power in case of non-fulfillment of contracts on "settling day" to assess the damages and fix the price at which settlements may be made.

SEC. 3. The Committee of Arrangements shall have charge of all matters pertaining to the account, other than those expressed in the preceding section, and shall have power to make additional rules and regulations therefor, reporting the same to the Governing Committee for approval. They shall also have power to change the date of the "settling day" except for the existing account.

SEC. 4. Transactions may be made in "decimal lots" of stock less than one hundred shares, under the provisions of Section 1st of this Article.

Officers of the New York Stock Exchange.

SECRETARY, B. O. White.
TREASURER, D. C. Hayse.
CHAIRMAN, Jas. Mitchell.

PRESIDENT, Brayton Ives.
VICE-PRESIDENT, Chas. M. Stead.
VICE-CHAIRMAN, Wm. McClure.

Governing Committee.

PRESIDENT and TREASURER.

CLASS 1.—To Serve One Year.

Wm. Alex. Smith,	Donald Mackay,
Wm. Lummis,	D. B. Van Emburgh,
C. K. Randall,	H. H. Hollister,
W. B. Dickerman,	A. M. Cahoon,
Robt. Winthrop,	A. M. Kidder.

CLASS 2.—To Serve Two Years.

S. T. Russell,	F. K. Sturgis,
G. L. Haight,	W. L. Bull,
D. T. Worden,	R. Keppler,
E. Brandon,	F. N. Lawrence.
H. G. Stebbins,	Simeon J. Drake,

CLASS 3.—To Serve Three Years.

Henry Meigs,	T. B. Atkins,
J. J. Higginson,	T. S. Ferry,
S. J. Harriot,	Howard Lapsley,
J. W. Kilbreth,	A. B. Baylis,
A. Wolff, Jr.,	Clarence S. Day.

CLASS 4.—To Serve Four Years.

Geo. H. Broadhead,	Henry Graves,
Chas. M. Stead,	E. T. Bogert,
John Ten Brook,	Geo. W. Fuller,
H. W. Perkins,	Francis L. Eames,
H. E. Alexander,	Jos. S. Stout.

Standing Committees.

FINANCE COMMITTEE.

A. B. Baylis, <i>Chairman</i> ,	S. T. Russell,
W. B. Dickerman,	Henry Meigs,
J. B. Atkins,	The President,
	And Treasurer.

COMMITTEE OF ARRANGEMENTS.

F. K. Sturgis, <i>Chairman</i> ,	G. H. Broadhead,
G. L. Haight,	J. W. Kilbreth,
D. T. Worden,	A. Wolff, Jr.,
	D. B. Van Emburgh.

COMMITTEE ON ADMISSIONS.

A. M. Cahoon, <i>Chairman</i> ,	G. L. Haight,	H. Lapsley,	D. T. Worden,
G. H. Broadhead,	Donald Mackay,	H. W. Perkins,	W. L. Bull,
John Ten Brook,	Chas. M. Stead,	Henry Meigs,	F. N. Lawrence,

COMMITTEE ON SECURITIES AT LARGE.

Edward Brandon, <i>Chairman</i> ,	
R. Winthrop,	T. S. Ferry.
Wm. Alex'r Smith,	J. J. Higginson.

COMMITTEE ON GOVERNMENT SECURITIES.

W. L. Bull, <i>Chairman</i> ,	
R. Winthrop,	H. W. Perkins,
H. Graves,	Clarence S. Day.

COMMITTEE ON STOCK LIST.

A. B. Baylis, <i>Chairman</i> ,	S. T. Russell,	H. Graves,	T. B. Atkins,	J. J. Higginson.
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ARBITRATION COMMITTEE.

S. T. Russell, <i>Chairman</i> ,	C. K. Randall,	H. H. Hollister,	H. E. Alexander,
Wm. Lummis,	H. Graves,	S. J. Harriot,	R. Keppler,
			Simeon J. Drake.

LAW COMMITTEE.

Chas. M. Stead, <i>Chairman</i> ,	H. W. Perkins,
	H. G. Stebbins.

COMMITTEE ON COMMISSIONS.

H. H. Hollister, <i>Chairman</i> ,	E. T. Bogert.
	Joseph S. Stout.

COMMITTEE ON PRINTING.

J. W. Kilbreth, <i>Chairman</i> ,	A. M. Kidder,	Geo. W. Fuller.
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COMMITTEE ON INSOLVENCIES.

Donald Mackay, <i>Chairman</i> ,	H. Lapsley,	F. N. Lawrence.
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COMMITTEE ON MINING SECURITIES.

Chas. M. Stead, <i>Chairman</i> ,	D. B. Van Emburgh,	A. Wolff, Jr.	W. L. Bull,
A. M. Kidder,	W. B. Dickerman,	J. J. Higginson,	F. K. Sturgis.

Regular Meetings of Committees

GOVERNING COMMITTEE.
2nd and 4th Wednesdays of each Month.
COMMITTEE ON ADMISSIONS.
Thursdays of each Week.

ARBITRATION COMMITTEE.
Tuesdays and Fridays of each Week.
COMMITTEE ON STOCK LIST.
First Monday of each Month.

FINANCE COMMITTEE.—Second day of each Month.

TRUSTEES OF GRATUITY FUND.

Wm. Alex'r Smith, *Chairman*,
A. S. Peabody, to serve one year,
James M. Fuller, to serve three years,
A. Campbell, to serve five years,

A. Campbell, *Treasurer*,
Wm. Alex'r Smith, to serve two years,
R. B. Hartshorne, to serve four years,
The President and Treasurer.

Members.

NAME.	FIRM.	OFFICE.
Adams, Wm., Jr.	Adams & McHarg,	33 Wall street
Adams, Thos. B.	Lawson, Adams & Co.,	49 Exchange place
Adler, Julius.		26 Broad street
Aitken, H.		29 Wall street
Alexander, H. E.	Latham, Alexander & Co.,	18 Wall street
Alexander, L. D.	L. D. Alexander & Co.,	37-39 Wall street
Allardice, Chas.	At White, Morris & Co.,	6 Wall street
Allen, Chas. C.		17 New street
Alley, Wm. S.		74 Broadway
Amory, J. M.	Bouvier & Amory,	29 Broad street
Amend, A.	Leopold Cahn & Co.,	56 Exchange place
Anderson, R. S.		25 Broad street
Anderton, R. Leigh, Jr.	Brown & Anderson,	6 Broad street
Anthony, Jas. L.		74 Broadway
Apgar, Louis J.		30 Broad street
Arthur, E. G.	Arthur & Keichum,	Drexel building
Atkins, T. B.	Chase & Atkins,	18 Broad street
Atterbury, J. C.		13 Broad street
Atterbury, J. B.	Van Emburg & Attlebury,	39 New street
Aub, A.		26 Broad street
Aufermann, Aug.	A. Aufermann & Co.,	20 Broad street
Bach, James B.		13 Broad street
Bacon, Wm. P.		26 Broad street
Bachem, C. H.	Limbirt & Co.,	21 Nassau street
Baker, Cyrus O.		15 Wall street
Baldwin, A. H.	At Office of	66 Broadway,
Baldwin, S.	Baldwin & Weeks,	16 Wall street
Baldwin, T. B.		
Ball, David A.	D. A. Ball & Co.,	70 Broadway
Banks, A.	Banks & Obrig,	78 Broadway
Barker, Fordyce D.	Iselin & Barker,	14 Broad street
Barlow, George	At Coleman Benedict & Co.,	92 Broadway
Bartholomew, Geo. W.	H. L. Horton & Co.	56 Broadway
Bartlett, A. W.		1 Exchange court
Bartlett, Josiah		30 Drexel building
Bates, E. C.	J. T. Bates & Co.,	12 Wall street
Baylis, Ab'm B.		44 Exchange place
Baylis, Ab'm B. Jr.,	A. B. Baylis, Jr. & Co.,	44 Exchange place
Baylis, William	A. B. Baylis, Jr. & Co.,	44 Exchange place
Beadleston, W. H.		286 West Tenth street
Beekman, Herman		4 Broad street
Beekman, Wm. B.		4 Broad street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Beekman, Jas. H.	Robert Winthrop & Co.,	52 Wall street
Belcher A. W.		
Belden, C. D.		34 Wall street
Bell, L. V.	Johnson & Bell,	54 Wall street
Bend, Geo. H.		30 New street
Benedict, Coleman,	Coleman Benedict & Co.,	92 Broadway
Benedict, E. C.		18 New street
Benedict, LeGr'd L.		2 New street
Benjamin, John	J. Benjamin & Co.,	31 New street
Berdan, D. W.		16 Broad street
Berry, Jacob		30 Broad street
Bianchi, John		40 Broad street
Billing, F. W.	Hagen & Billing,	1 Wall street
Bird, Thos. H.		8 Wall street
Bishop, W. F.	Hamilton & Bishop,	19 Nassau street
Bissell, R. H.		4 Broad street
Blacque, Val. A.		54 Wall street
Blandy, G.		16 New street
Blatchford, J. W.		19 Broad street
Bloodgood, John	J. Bloodgood & Co.,	84 Broadway
Blood, S. L.		70 Broadway
Boardman, L.	At Russell Sage,	5 and 7 New street
Bogart, W. H.	O. M. Bogart & Co.	108 Broadway
Bogert, Eugene T.		14 Broad street
Bogert, Seba M.		15 Wall street
Bolles, R. J.		19 New street
Bonner, E. H.	G. T. Bonner & Co.,	20 Broad street
Bonner, Geo. T.	G. T. Bonner & Co.,	20 Broad street
Bond, Francis S.		13 Broad street
Bond, Geo. W.		16 New street
Boocock, S. W.	Boocock & Co.,	36 Broad street
Boody, D. A.		58 Broadway
Bostwick, H. A.		11 Wall street
Bostwick, R. C.		27 New street
Bostwick, Silas B.	Petty & Bostwick,	13 Broad street
Bouden, T. H.		15 New street
Bound, Walter	Bound & Co.,	52 Wall street
Bouvier, John V.	Bouvier & Amory,	29 Broad street
Bouvier, M. C.		18 New street
Bowdoin, G. S.	Morton, Bliss, & Co.,	25 Nassau street
Bowron, W. A.		4 Broad street
Boyd, James M.	Boyd & Vincent,	30 Broad street
Boyd, James		36 Broad street
Brandon, Edward		19 Broad street
Brandon, Joseph		510 Fifth avenue
Bradford, N. G., Jr.		40 Broad street
Bragaw, E. T.		7 Exchange court
Breese, W. L.	Breese & Smith,	9 New street
Britton, Charles P.	Britton & Van Vechten,	5 New street
Brodhead, Geo. H.		32 Broad street
Brown, A. L.		
Brown, Edward J.	Edward J. Brown & Co.,	80 Broadway
Brown, F. T.	H. L. Horton & Co.,	56 Broadway
Brown, Geo. L.	G. L. Brown & Son,	24 Pine street
Brown, J. E.	Blake, Bros. & Co.,	54 Wall street
Brown, J. M.	A. H. Brown & Co.,	7 Wall street
Brown, John W.		13 Broad street
Brown, Samuel D.		26 Pine street
Brown, Thomas E.		14 New street
Brown, Walston H.	Walston H. Brown & Bro,	11 Pine street
Browne, George		56 Broadway
Browne, Chas. N.		56 Broadway
Brownell, Chas. A.		17 Broad street
Brownell, J. L.		17 Broad street
Bruns, Phil.		14 New street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Brush, Wm. B.		26 Broad street
Buckingham, G. Jr.	Buckingham & Underhill,	24 Broad street
Buckingham, J. A.		Drexel building
Bull, W. L.	E. Sweet & Co.,	38 Broad street
Burdett, Jesse B.		8 Broad street
Burnham, J. W.	Hotchkiss & Burnham,	36 Broad street
Burr, M. Jr.,	Britton & Burr,	27 Wall street
Burras, Howard K.	H. K. Burras & Co.,	11 Broad street
Burwell, C. D.		19 Broad street
Bussing, John S.	Gelston & Bussing,	10 Wall street
Buttrick, C. A.	Buttrick & Elliman,	2 Nassau street
Cahn, Leopold	L. Cahn & Co.,	56 Exchange place
Cahoone, A. M.	Bâsement,	40 Wall street
Caboone, S., Jr.		16 Nassau street
Caldwell, M.		26 Broad street
Camblos, H. S.		24 New street
Camblos, W. P.		24 New street
Cammack, A.	At C. J. Osborn & Co.,	34 Broad street
Cammann, C. L.	Cammann & Co.,	8 Wall street
Campbell, A.	Ward, Campbell & Co.,	56 Wall street
Campbell, John		24 Broad street
Campbell, Henry G.	Davis & Campbell,	4 Exchange court
Cantoni, Salvatore	Cantoni & Co.,	35 Wall street
Cary, Joseph C.		14 New street
Carey, H. T.		29 New street
Carey, C. T.		29 New street
Carpender, W.	W. & J. N. Carpender,	41 Pine street
Carpender, J. N.	W. & J. N. Carpender,	41 Pine street
Carpenter, E. P.		22 Pine street
Carpenter, E. O.		57 Wall street
Carr, S. D.		80 Broadway
Carryl, Charles E.	W. Alex. Smith & Co.,	40 Wall street
Carver, B. F.		19 Broad street
Carolin, William	V. J. C. Williams & Co.,	36 Broad street
Castellanos, A. V.		7 Exchange court
Cecil, George W.	J. R. Cecil & Co.	
Chamberlin, E.		52 Wall street
Chapin, E. S.		67 Exchange place
Chapin, Geo. C.		67 Exchange place
Chapman, C. E.		9 New street
Chapman, G. H.	Ward, Campbell & Co.,	56 Wall street
Chase, E. E.	Chase & Higginson,	24 Pine street
Chase, G. H.	Chase & Atkins,	18 Broad street
Chase, Leslie	L. Chase & Co.,	30 Broad street
Chauncey, H. S.,	At Charles Head & Co.,	11 Wall street
Christmas, C. H.		54 Wall street
Cisco, J. A.	J. J. Cisco & Son	Wall & Hanover street
Clark, Charles		17 Broad street
Clark, A. S.		3 Pine street
Clark, H. I.		62 Broadway
Clark, John E.	H. & J. Clark,	62 Broadway
Clark, John M.		2 Nassau street
Clarkson, M. H.	M. & H. Clarkson,	54 Wall street
Clerke, W. B.		25 Broad street
Clews, Henry	Henry Clews & Co.,	18 New street
Clinton, De Witt		56 Wall street
Closson, James T.	Closson & Hays,	11 Nassau street
Colbron, W. T.	Sterett & Colbron,	17 New street
Colby, Robert	J. B. Colgate & Co.,	47 Wall street
Cole, Albert		26 Broad street
Coles, E. E.		10 Broad street
Colgate, James B.	J. B. Colgate & Co.,	47 Wall street
Colhoun, W. H.		56 Wall street
Colquit, J. H.		11 Broad street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Combs, A. H.		7 Exchange court
Comstock, C. A.		25 Broad street
Conkling, Aaron	Wakeman, Conkling & Co.,	26 Pine street
Content, Noah		14 Broad street
Connor, E. S.		78 Broadway
Connor, W. E.	Wm. Belden & Co.,	80 Broadway
Cooke, Sidney E.	Amerman & Cook,	15 Broad street
Cooper, J. J.		84 Broadway
Cooper, William		57 Exchange place
Cox, Townsend		Kemey's & Cox
Cox, Edwin M.		15 Broad street
Cox, William H., Jr.,	Pomeroy, Cox & Smith	37 Broad street
Crane, A. G.		19 Nassau street
Criss, Michael	At J. S. Tilney & Co.,	17 Wall street
Cross, William		Room 9, 25 Broad street
Crommelin, R. O.		10 Wall street
Cummings, G. F.	Cummings & Co.,	4 Broad street
Cunningham, J. W.	J. W. Cunningham & Bro.,	11 Wall street
Cunningham, W.	J. W. Cunningham & Bro.	11 Wall street
Curphey, James		64 Exchange place
Curtis, S. J.		
Cushman, James S.		54 Wall street
Cutting, R. L.		19 William street
Cutting, R. L., Jr.	R. L. Cutting & Co.,	19 William street
Cutting, Jas. D. W.	R. L. Cutting, Jr., & Co.,	19 William street
Dakin, G. W. B.	H. L. Olcott & Co.,	40 Broad street
Damerel, Wm. G.		31 Wall street
Dater, H. R.	Dater & Timpson,	26 Broad street
Davis, Ansley S.		5 Exchange court
Davis, Chas. H.		92 Broadway
Davis, Fellowes	Davis & Tileston,	1 Exchange court
Davis, John H.	Davis & Co.,	17 Wall street
Davis, J. M.	Davis & Freeman,	53 Exchange place
Davis, J. Williams	Davis & Campbell,	4 Exchange court
Davis, J. Whyte		34 New street
Davis, S. D.	Wood & Davis,	31 Pine street
Davenport, C. F.	Molter & Davenport,	9 Wall street
Day, H. M.	Day & Heaton,	29 New street
Day, Henry	At Gwynne & Day,	45 Wall street
Day, Clarence S.	Gwynne & Day,	45 Wall street
Day, Charles S.		18 New street
Day, James R.		72 Broadway
Day, Nathan	Nathan Day & Co.,	7-5 New street
Deas, Z. C.		34 Broad street
Decker, J. S.	A. Turner & Co.,	22 Nassau street
Delafield, E.	Delafield & Fitch,	36 Wall street
Denny, John T.	T. Denny & Co.,	30 Pine street
Denny, Thomas	T. Denny & Co.,	30 Pine street
Denslow, E. H.		36 New street
De Cordova, A.		
De Coppet, E. J.	Jacquelin & De Coppet Bros.,	4 Wall street
De Coppet, F.	Jacquelin & De Coppet Bros.,	4 Wall street
De Forest, A. H.	At Henry N. Smith	65 Exchange place
De Grove, O. C.		4 Broad street
De Jonge, S.	De Jonge & Co.,	46 Exchange place
De Mott, J. H.	De Mott & Durant,	19 New street
Des Marets, E. A.		8 Exchange court
De Rivas, M. E.		7 Exchange court
De Silver, C. H.		26 Broad street
D'Wolf, W. B.	D'Wolf & Parsons,	8 Broad street
De Wolf, B. D.		15 Broad street
Dewing, Clark.	H. Dewing & Son,	11 Broad street
Dibble, Edward D.	Room 11,	7 Exchange place
Dickerman, W. B.	Dominick & Dickerman,	19 New street
Dickinson, G. F.		17 New street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Dickinson, F. F.	J. C. Walcott & Co.	29 Broad street
Dickinson, H. C.	Dickinson Bros.,	43 Exchange place
Dickinson, Platt K.	Dickinson Bros.,	43 Exchange place
Dickinson, W. H.		24 Broad street
Dike, W. H.		Drexel building
Dillon, J. Rhinelander		9 New street
Dimock, J. D'Wolf	S. Hamilton & Co.,	78 Broadway
Dimock, A. W.	A. W. Dimock & Co.,	7 Exchange court
Dodge, Harry E.	Clark, Dodge & Co.,	Wall & William sts.
Dominick, W. G.	Dominick & Dickerman,	19 New street
Dominick, Bayard,	Dominick & Dickerman,	19 New street
Donald, W. M.	Smithers & Donald.	3 Broad street
Dornin W. C.		2 New street
Dotger, A. J.		15 Wall street
Doubleday, U.		17 New street
Doughty, W. S.		53 Exchange place
Dougherty, G. W.	John S. Tilney & Co.,	17 Nassau street
Drake, Albert A.		9 New street
Drake, E. A.	Drake Bros.,	80 Broadway
Drake, J. M.	J. M. Drake & Co.,	21 Drexel building
Drake, Simeon J.		40 Broad street
Drummond, J. L.		17 New street
Duer, Denning, Jr.		37 New street
Duer, Denning		53 William street
Duff, Wm. H.		7 New street
Dumont, J. B.	Jesup, Paton & Co.,	52 William street
Dunan, S. H.		43 New street
Durand, Harvey		14 New street
Durant, J. L.	DeMott & Durant,	19 New street
Durant, T. F.		94 Wall street
Durkee, Harrison		56 Broadway
Durkee, A. W.		56 Broadway
Dwight, Chapman	At C. E. Ford,	Drexel building
Dyett, A.	A. Dyett & Co.,	19 New street
Dykes, Francis, Jr.		48 Exchange place
Eames, Francis L.	Eames & Moore,	66 Exchange place
Earle, Henry	Putnam & Earle,	5 Wall street
Earle, Wm. M.		54 Broadway
Edey, A. R.	Worden & Co.,	48 Wall street
Edwards, Joseph B.	At Pearl & Co.,	16 New street
Edwards, R. L.		Bank State N. Y.
Edwards, W. J.		30 Broad street
Eells, Richard		51 Exchange place
Efner, Henry W.		18 New street
Eggleston, W. C.		11 Broad street
Ellery, W. P.		30 Broad street
Elliott, R. S.		34 Broad street
Ellis, J. M.		24 Pine street
Ellis, Wm. L.		36 Broad street
Ely, Geo. W.		13 Wall street
Emmet, H. C.		56 Broadway
Emmons, J. Frank.	H. S. Horton & Co.,	7 Exchange court
Enos, H. K.	H. K. Enos & Co.,	19 Broad street
Estabrook, A. F.		
Evans, Cadwalader.	C. Evans & Co.,	17 Broad street
Evans, Wm., Jr.		58 Broadway
Ewell, J. N.		
Ewen, Jno., Jr.	Ewen & Osborn,	62 Broadway
Fairbairn, R. M.		Exchange court
Fairchild, J. E.		16 Broad street
Fanshawe, G. A.	Fanshawe & Milliken,	8 Exchange court
Farnham, Chas. A.		52 Broadway
Fearing, C. F.	McGinnis Bros. & Fearing,	30 Broad street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Feldmeier, Max.		52 Exchange place
Fellowes, C., Jr.		1 Exchange court
Fellowes, J. W.		36 Broad street
Ferris, A. M.		31 New street
Ferris, Warren	Ferris & Kimball,	31 New street
Ferry, T. S.	Weston & DeBillier,	35 New street
Field, E. G.	Field & James,	16 Broad street
Findlay, A., Jr.		30 Broad street
Fisher, L. G.		30 Broad street
Fisher, John H.		15 New street
Fisher J. K.	C. J. Osborn & Co.,	34 Broad street
Fitch, Wm.	DeLafield & Fitch,	36 Wall street
Fitch, Henry, Jr.	P. W. Gallaudet,	3 Wall street
Fitzhugh, Henry.		78 Broadway
Fleming, K. L.		50 Exchange place
Florance, L. G.		7 Exchange court
Florance, F. H.		29 New street
Flower, R. P.	R. P. Flower & Co.,	84 Broadway
Flower, A. R.	R. P. Flower & Co.,	84 Broadway
Floyd-Jones, W. C.	Floyd-Jones & Robinson,	2 Exchange court
Foote, Chas. B.	Hatch & Foote,	12 Wall street
Ford, C. F.		Drexel Building
Forshay, D. F. S.		
Forrester, P.	Forrester & Germond,	30 Broad street
Fowler, H. J.	McMicken & Co.,	13 Broad street
Fox, Edward C.	Edward C. Fox & Co.,	3 Wall street
Frank, E. L.	E. L. Frank & Co.,	51 Exchange place
Frankenheimer, L. S.	Asiel & Co.,	51 Exchange place
Freeman, F. P.	Davis & Freeman,	53 Exchange place
Freed, David A.		
French, Wm.		66 Broadway
Frothingham, C. F.		39 Pine street
Fry, H. B.		58 Broadway
Fuller, J. M.		8 Wall street
Fuller, G. W.	Cammann & Co.,	8 Wall street
Gargiulo, J. A.	Gargiulo & Co.	4 Broad street
Garland, J. A.		1st National Bank
Garlichs, Charles.		7 New street
Gelpcke, Otto		30 Broad street
Gelston, W. J.	Gelston & Bussing.	10 Wall street
George, J. W.	C. J. Osborn & Co.,	34 Broad street
Germond, H. S.	Forrester & Germond,	30 Broad street
Gernsheim, M.	Kuhn, Loeb & Co.,	31 Nassau street
Gibson, W. A.		
Gilley, F. W., Jr.	F. W. Gilley, Jr. & Co.	64 Broadway
Gillespy, J. W.		67 Exchange Place
Gladwin, J. L.		10 Wall street
Glendinning, R.		17 Wall street
Goadby, W. H.	W. H. Goadby & Co.,	2 Exchange court
Goddard, Geo. H.		12 Wall street
Goddard, P. Lacey.		29 New street
Goicouria, A. V. de		2 New street
Gold, C. B.	Gold, Barbour & Sword,	92 Broadway
Goodchild, John.	W. C. Kirkland,	30 Broad street
Gould, E. W.		25 New street
Goodhart, P. J.		17 Broad street
Gould, W. R. Jr.	W. R. Gould & Co.,	15 New street
Gould, E. O.		11 Wall street
Gracie, James K.	J. K. Gracie & Westervelt,	37 New street
Graham, Charles.		Stock Exchange
Granberry, W. H.		14 New street
Grant, R. S.	Grant & Co.,	33 Wall street
Grant, James.	Grant Bros.,	2 Exchange court
Graves, Henry.	Maxwell & Graves,	74 Broadway

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Gregory, Charles.	Gregory & Ballou,	6 Wall street
Green, George T.		30 Broad street
Greenebaum, D. S.	Greenebaum Bros. & Co.,	18 Wall street
Groesbeck, Ernest.		15 Wall street
Groot, C. S.	Groot & Chapman,	80 Broadway
Grymes, C. A.		50 Exchange place
Gunther, Chas. B.	C. B. Gunther & Bro.,	38 Wall street
Gurnee, W. S., Jr.	W. S. Gurnee, Jr., & Co.,	3 Exchange court
Guttman, D.		20 Broad street
Gwynne, J. A.	Gwynne & Dav,	45 Wall street
Haight, E., Jr.		26 Broad street
Haight, F. A.		37-39 Wall street
Haight, G. L.	G. L. & L. Haight,	26 Broad street
Haight, Louis.	G. L. & L. Haight,	26 Broad street
Hallgarten, Julius.	Hallgarten & Co.,	28 Broad street
Halsted, R. H.		3 Broad street
Ham, Benj. F.	Ham & Munroe,	23 Nassau street
Hamilton, M. K., Jr.		19 Broad street
Hamilton, W. H.		16 New street
Hance, G. C.		7 Exchange court
Hanks Edwin J.	At J. B. Manning,	6 Wall street
Hardenbergh, J. A.		
Harding P. W.	P. W. Harding & Co.	15 New street
Hardy, F.	H. C. Hardy & Son,	10 Wall street
Hardy, H. C.	H. C. Hardy & Son,	10 Wall street
Harker, L. E.		26 Broad street
Harney, C. H.		66 Broadway
Harriman, E. H.	E. H. Harriman & Co.,	30 Broad street
Harriot, Samuel J.	Harriot & Noyes,	10 Wall street
Harris, Chas. H.		25 New street
Harned, Chas. A.	Savin & Harned,	18 New street
Hart, Harman H.		45 Exchange place
Hartshorne, J. M.	J. M. Hartshorne & Bro.,	35 Broad street
Hartshorne, R. B.	J. M. Hartshorne & Bro.,	35 Broad street
Hatch, N. W. T.	W. T. Hatch & Sons,	34 Wall street
Hatch, W. T.	W. T. Hatch & Sons,	34 Wall street
Hatch, D. B.	Hatch & Foote,	12 Wall street
Hatch, A. S.	Fisk & Hatch,	5 Nassau street
Hatch, Rufus.	Rufus Hatch & Co.,	47 Exchange place
Hatch, Albert J.		17 Broad street
Haven, Geo. G.	G. G. Haven & Co.,	17 Wall street
Haviland, D. E.		13 Broad street
Hawthorne, A. C. E.		14 Broad street
Hay, Silas C.		31 Broad street
Hays, D. C.		Union Bank
Hays, E. St. John.	Closson & Hays,	11 Nassau street
Hays, Jacob,	Closson & Hays,	11 Nassau street
Hays, W. H.		Bank State of New York
Hazard, S. H.		6 Broad street
Hearn, Hudson H.		11 Broad street
Heath, Wm.	Wm. Heath & Co.,	19 Broad street
Heaton, William W.	Day & Heaton,	29 New street
Head, Charles	Charles Head & Co.	11 Wall street
Heiser H. A.		25 Wall street
Heidelbach, A. S.	Heidelback, Ickelheimer & Co.,	52 Exchange place
Heminway, A. G.		60 Broadway
Henderson, W. T.		14 New street
Hendricks, A.		45 Exchange place
Henderson, N. P.	Kimball, Howell & Co.,	17 New street
Hendrickson, Geo. S.		17 Wall street
Henop, Louis P.		14 Broad street
Henriques, Alex.		18 New street
Henriques, W. H.		30 Broad street
Herrick, R. P.		17 New street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Herzog, Max	De Jonge & Co.,	46 Exchange place
Hewson, J. H.	Hewson, Kilbreth & Co.,	11 Broad street
Hibbard, S. M.		Room 31-34, 52 Broadway
Higginson H. L.		24 Pine street
Higginson. J. J.	Chase & Higginson,	24 Pine street
Hill, F. F.	At McMicken & Co.,	13 Broad street
Hill, G. H. B.		56 Broadway
Hillyer, John B.		9 New street
Hinckley, Chas.		36 Broad street
Hoffman, P. J.		26 Broad street
Hollister, H. H.	H. H. Hollister & Co.,	43 New street
Hollins, H. B.	H. B. Hollins & Co.,	74 Broadway
Holmes, Robt. B.	H. H. Hollister & Co.,	53 New street
Holt, Geo. H.	Geo. Wm. Ballou & Co.,	8 Wall street
Homans, E. C.	Homans & Co.,	80 Broadway
Hone, John, Jr.	Smalley & Hone,	53 Exchange place
Hooper, Harry		11 Broad street
Hornbostel, E.		7 New street
Horton, H. L.	H. L. Horton & Co.,	56 Broadway
Hotchkiss, H. L.	Hotchkiss & Burnham,	36 Broad street
Houghton, Geo. G.		
Howell, J. P.	Kimball, Howell & Co.,	17 New street
Howell, G. R.	Leonard, Howell & Co.,	58 Broadway
Howard, Geo. L.	Nason & Howard,	9 New street
Hoy, R. T.		53 New street
Hoyt, L. T.		46 Exchange place
Hudson, Chas. J.	Buckingham & Underhill,	24 Broad street
Huestis, C. H.		31 Pine street
Hughes, T. W. B.		25 New street
Humbert, E. C.	Humbert Bros.	9 Nassau street
Humbert, W. P.	Humbert Bros.	9 Nassau street
Hunt, A. D.		6 Broad street
Hunting, N. L.	Hunting Bros.	47 Exchange place
Huntington, T. P.		Stock Exchange
Huntington, L. D.		
Hunter, J. H.		2 Exchange court
Hurlbut, H. A., Jr.	H. A. Hurlbut, Jr. & Co.	54 Wall street
Hussey, E. A.	Hussey & Co.	66 Broadway
Hutchinson, W. J.	Kennedy, Hutchinson & Co.	5 Wall street
Hutchinson, D. J.	Hutchinson Bros.	19 New street
Hutchinson, L. B.		19 New street
Hyman, Henry		14 New street
Isaacs, Montefiore		17 Broad street
Ives, Brayon	Brayton Ives & Co.	4 Broad street
Jackson, C. W.		29 Broad street
Jackson C. C.	At Chase & Higginson,	34 Pine street
Jackson, F. W.	F. W. Jackson & Co.	19 Broad street
Jacquelin, J. H.	Jacquelin & DeCoppet Bros.	4 Wall street
James, C. A.		70 Broadway
James, John S.	Field & James,	16 Broad street
Jameson, Joseph A.	Jameson, Smith & Cotting,	14 Broad street
Jenkins, Augustus		34 Wall street
Jenkins, W. A.		64 Broadway
Jenkins, W. L. Jr.	W. S. Nichols & Co.,	33 Wall street
Jerome, Lawrence R.	Emott & Durant,	19 New street
Jessup, James R., Jr.,	Jessup & Lamont,	4 Wall street
Johnes, C. A.		7 Exchange court
Johnson, Davis	H. L. Horton & Co.,	7 Exchange court
Johnson, F. M.		25 Broad street
Johnson, H. L.		4 Exchange court
Johnson, S. F.	S. F. Johnson & Co.,	2 Nassau street
Johnson, W. H.		26 Broad street
Jones, E. Renshaw,	Davidson & Jones,	61 Wall street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Jones, Shipley		30 New street
Jordan, C. N.		Third National Bank
Joseph Laurens		14 New street
Joseph, S. A.	S. A. Joseph & Co.,	4 Broad street
Josephson, A.		54 Broadway
Judson, A. M.		26 Broad street
Judson, David H.		2 New street
Jung, A. N.	T. C. Jung & Son,	7 Exchange court
Justh, E.	E. Justh & Co.,	57 Exchange place
Kahn, James		
Kane, R. A.		30 Broad street
Keene, R. S.		18 New street
Keilholz, C. C.		57 Exchange place
Keep, C. W.		24 New street
Kellogg, W. C.		66 Exchange place
Kemeys, Edward	Kemeys & Cox,	51 Exchange place
Kendall, B. F.	Kendall & Waller,	30 Broad street
Kennedy, G. H.	Kennedy, Hutchins & Co.,	5 Wall street
Kennedy, H.		11 Broad street
Kennedy, W. L.		11 Broad street
Keppler, Chas. F.		49 Exchange place
Keppler, Rudolph	Keppler & Sancton,	49 Exchange place
Kerner, C. H.		
Ketchum, F. M.	Ketchum & Belknap,	24 Broad street
Kidder, A. M.	A. M. Kidder & Co.,	Wall street and Broadway
Kilbreth, J. W.	Hewson, Kilbreth & Co.	11 Broad street
Kimball, C. H.	Kimball, Howell & Co.,	17 New street
Kimball, R. J.	R. J. Kimball & Co.,	4 Exchange court
Kimball, Wm. C.		16 Broad street
Kimber, Alfred	Kimber & Lounsbury,	33 Broad street
King, Albert	At C. J. Osborn & Co.,	34 Broad street
King, D. J.	May & King,	33 Broad street
King, Edward		Union Trust Co.
King, John A., Jr.	J. G. King's Sons,	53 William street
King, Richard, Jr.,		74 Broadway
King, Vincent B.		5 Wall street
Kip, Isaac, Jr.,		
Kirkner, J.		36 Broad street
Kissam, P. R.		30 Broad street
Kissam, Samuel H.		30 Broad street
Kitchen, Wm. K.		15 Wall street
Klingensfeld, M. C.		52 Exchange place
Knapp, Shepherd	Shepherd Knapp & Co.,	8 Broad street
Knapp, T. S.	Knapp & Peabody,	28 New street
Knickerbacker, H.	H. Knickerbacker & Co.,	15 New street
Knight, E.		46 Broad street
Knight, Charles		46 Broad street
Knight, Silvester		46 Broad street
Knoblauch, C.	Knoblauch & Lichenstein	21 William street
Knowles, E. M.		24 Nassau street
Kohn, Adolph		30 Broad street
Kountze, A.	Kountze Bros.	12 Wall street
Krohn, Albert	Krohn & Hoffman,	57 Exchange place
Laidlaw, Chas. E.	Laidlaw & Co.	12 Pine street
Lansburg, S.		26 Broad street
Lapsley, Howard		15 Broad street
Lavenburg, Samuel	Lavenburg & Bro.,	66 Exchange place
Lawrence, Chas. E.		47 Exchange place
Lawrence, C. J.	Lawrence Bros. & Co.,	31 Broad street
Lawrence, D. W.	Lawrence Bros. & Co.,	31 Broad street
Lawrence, De W. C.	Lawrence Bros. & Co.,	31 Broad street
Lawrence, F. N.		30 Broad street
Lawrence, W. B.	J. Benjamin & Co.,	31 New street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Lawson, Wm. S.	Lawson, Adams & Co.	49 Exchange place
Learned, B. P., Jr.	B. P. Learned, Jr. & Co.,	11 Wall street
Leavitt, H. Y.		36 New street
Lehmann, Leo.	E. L. Frank & Co.,	51 Exchange place
Leland, C. H.		41 Pine street
Leonard, Ambrose	H. T. Morgan & Co.,	35 William street
Leo, Arnold	Arnold Leo & Co.,	58 Exchange place
Leroy, H. R.		2 Nassau street
Leroy, W. H.		
Lemmon, William		80 Broadway
Leverich, James H.	Parke & Leverich,	31 Wall street
Lewis, C. H.	Britton & Van Vechlin,	5 New street
Libaire, A.		26 Broad street
Lines, O. K.		18 Broad street
Lichtenstein, A.	Baltzer & Lichtenstein	50 Exchange place
Lindley, D. A.	Field, Lindley & Co.,	17 South street
Livermore, Edward		74 Broadway
Livermore, W. F.		62 Broadway
Lockwood, F. M.	F. M. Lockwood & Co.,	8 Exchange place
Lockwood, H. B.	H. B. Lockwood & Co.,	2 New street
Lockwood, J. R.		9 New street
Lockwood, W. B.		2 New street
Loeb, S.	Kuhn, Loeb & Co.,	31 Nassau street
Losea, G. J.		28 Broad street
Lounsbury, R. P.	Lounsbury & Haggin,	31 Broad street
Low, H. W.		
Lummis, W.		2 Nassau street
Maas, Gustavus	Martin Maas & Co.,	20 Broad street
Maas, Frederick M.		19 Broad street
Mackay, Donald	Vermilye & Co.,	16 Nassau street
Mackay, George D.		16 Nassau street
Mackenzie, C. F.	Clinton B. Fiske & Co.,	Drexel building
Macardell, C.		26 Broad street
Maltbie, Fred'k A.	Maltbie & Beers,	36 Broad street
Manly, Reuben		
Manley, Washington.	Manley & Co.,	40 Broad street
Manning, John B.		6 Wall street
Manson, T. L., Jr.	Chas. Head & Co.,	11 Wall street
Manuel, H.	H. Manuel & Co.,	31 Wall street
Mapelsden, T. E.		17 New street
Marie, Joseph.		24 Broad street
Marie, Peter		
Markham, F. C.		11 Broad street
Marlor, H. S.		
Marlor, T. S.		
Marston, Charles E.		40 Wall street
Marten, B. T.		163 Broadway
Martin, A. F. R.	Martin & Runyon,	40 Wall street
Martin, M. L. B.		25 Broad street
Marvin, Charles H.		13 Broad street
Marvin, Charles R.		13 Broad street
Marvin, Tasker H.		
Marx, L.	L. Marx & Co.,	50 Exchange place
Mason T. Henry	Mason & Smith,	Exchange court
Mastin, J. Edward		72 Broadway
Maurice, A.		70 Broadway
Mauriac, E. A.		Fourth Nat'l Bank
Maxwell, H. W.	Maxwell & Graves,	74 Broadway
Maxwell, J. R.	Maxwell & Graves,	74 Broadway
McClure, William		Stock Exchange
McCormick, Jas.	Jas. McCormick & Co.,	16 Broad street
McGinnis, E. W.	McGinnis Bros. & Fearing,	30 Broad street
McGinnis, John, Jr.	McGinnis Bros. & Fearing,	30 Broad street
McHarg, Henry K.	Adams & McHarg,	33 Wall street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
McKewan, J. P.		17 Wall street
McKim, John A.	McKim Bros & Co.,	47 Wall street
McJimsey, J. M.		25 Broad street
McLean, George W.	At McGill & Co.,	14 Pine street
McMicken, Jas. A.	J. A. McMicken & Co.,	13 Broad street
Mead, H. W.		21 New street
Mead, I. Franklin	S. M. Mills & Co.,	Exchange court
Meeker, C. J.		
Meeker, Thos. B.	W. B. Meeker & Co.,	29 Wall street
Meeker, W. B., Jr.	W. B. Meeker & Co.,	39 Wall street
Meigs, Charles A.		
Meigs, Charles H.		30 Drexel building
Meigs, Henry		51 Liberty street
Mendel, Henry	Marx & Co.,	50 Exchange place
Meredith, W. T.	W. T. Meredith & Co.,	37 William street
Mertens, William	L. VonHoffman & Co.,	50 Wall street
Mertens, Edward		56 Exchange place
Meyer, Max		26 Broad street
Meyer, Moritz		
Middledith, James		66 Broadway
Miller, A. F.	H. Johnson & Co.,	98 Broadway
Miller, C. W.	S. F. Johnson & Co.,	2 Nassau street
Miller, Edmund H.	E. H. Miller & Son,	20 Broad street
Miller, Henry		43 Exchange place
Miller, E. P.		49 Exchange place
Miller, George M.	E. H. Miller & Son,	20 Broad street
Miller, J. H.		7 New street
Milliken, David	Fanshaw & Milliken,	8 Exchange court
Mills, J. D.		10 Wall street
Mills, J. G.		36 Broad street
Mills, S. M.	S. M. Mills & Co.,	54 Broadway
Minis, P. H.		36 Broad street
Minton, Chas. A.		64 Broadway
Minzesheimer, Chas.	Chas. Minzesheimer & Co.,	14 New street
Mitchell, Jas.	Chairman,	Stock Exchange
Mitchell, Moses		26 Broad street
Moore, F. L.	W. D. Moore & Co.,	33 New street
Moore, H. R.	Eames & Moore,	66 Exchange place
Moore, W. D.	W. D. Moore & Co.,	33 New street
Moran, A. D.	Moran Bros.,	68 William street
Moran, Dan'l A.		40 Wall street
Morgan, A. C.	H. T. Morgan & Co.,	35 William street
Morgan, D. P.	{ Davis, Tileston & Co.,	1 Exchange court
	{ H. Z. Horton & Co.,	
	{ H. T. Morgan & Co.,	
Morgan, H. T.		35 William street
Morrell, Daniel		30 Broad street
Morris, J. C.		7 Exchange court
Morris, T. F.		19 Broad street
Morris, W. T.		18 Broad street
Morrison, D. M.		33 Drexel building
Morrison, E.		34 Wall street
Morrison, Geo. D.		24 New street
Morse, H. J.		19 New street
Morse, E. Rollins		36 Broad street
Motley, W. H.		2 Exchange court
Mott, R. G.	Mott & Hill,	11 Broad street
Munroe, B. F.	Ham & Munroe,	78 Broadway
Munroe, J. W.		16 Broad street
Murphy, Rich'd G.		7 Exchange court
Murray, William M.		26 Broad street
Musgrave, T. B.	Musgrave & Co.,	29 Pine street
Myers, Alfred G.	Myers, Rutherford & Co.,	40 Exchange place
Myers, P. M.		92 Broadway
Myers, T. W.		19 New street
Nason, Henry W.	Nason & Howard,	9 New street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Nathan, F.		16 New street
Nathan, H. H.		26 Broad street
Nathan, Julian		44 Exchange place
Nathan, Julius	I. & S. Wormser,	1 Broad street
Nathan, Mendes		26 Broad street
Neilson, Alfred	A. & L. Neilson,	15 New street
Neilson, E. C.		49 Exchange place
Neilson, Robert H.		15 New street
Neilson, Wm. H.		15 New street
Neilson, W. S.		34 Broad street
Neufoille, J. J. de	de Neufoille & Co.,	53 Exchange place
Neukirch, Chas.	Leopold, Cahn & Co.,	56 Exchange place
Newcombe, I. B.	I. B. Newcombe & Co.,	6 Broad street
Newton, Isaac W.	I. W. Newton & Bro.,	6 Wall street
Nicholas, H. I.	H. I. Nicholas & Co.,	36 Broad street
Nichols, F. L.		3 Exchange court
Nichols, J. R.		19 New street, room 8
Nichols, W. S.	W. S. Nichols & Co.,	33 Wall street
Niles, L. H.		8 Broad street
Norbury, J. F.	Norbury & Co.,	19 Broad street
Norbury, T. S.	Norbury & Co.,	19 Broad street
Norton, A. R. L.	A. Dyett & Co.	64 Broadway
Noyes, F. B.		26 Broad street
Noyes, Julius M.	Harriot & Noyes,	10 Wall street
Oakley, H. Cruger		64 Broadway
Obrig, A.		78 Broadway
O'Brien, John	Wm. & Jno. O'Brien,	58 Wall street
O'Brien, Joseph		35 Wall street
O'Brien, Oswin		5 New street
O'Brien, William	Wm. & Jno. O'Brien,	58 Wall street
Oddie, J. V. S.		10 Wall street
Ogden, T. W.		25 Pine street
Olcott, F. P.	F. P. Olcott & Co.,	45 Wall street
Olcott, H. L.		40 Broad street
Olliffe, C. W.		30 Broad street
Oppenheim, Ed. L.	E. L. Oppenheim & Co.,	66 Exchange place
Ormsbee, A. I.		19 New street
Osborn, C. J.	C. J. Osborn & Co.,	34 Broad street
Osborn, W. H.	Ewen & Osborn,	21 New street
Osgood, W. H.		
Owens, W. F.	Owens & Mercer,	7 Exchange court
Palmer, F. H.		11 Broad street
Palmer, George H.		27 New street
Parke, H. S.	Parke & Levinch,	31 Wall street
Parker, Joel	Belden, Bennett & Co.	80 Broadway
Parker, M. E.	Parker & Wood,	15 Broad street
Parkinson, John	At H. L. Horton & Co.,	7 Exchange court
Parks, William M.		29 Broad street
Parsons, Charles		39 Pine street
Parsons, William	D'Wolf & Parsons,	8 Broad street
Patchen, E. F.	Patchen Bros.,	51 New street
Patchen, S. W.	Patchen Bros.,	51 New street
Pattison, W. M.	W. M. Pattison & Co.,	65 Exchange place
Patterson, H. A.		14 New street
Patton, Ludlow		6 Wall street
Paulding, James P.	Paulding & Slosson,	24 New street
Peabody, A. S.		28 New street
Pearl, Elbridge G.	Pearl & Co.,	16 New street
Penniman, E. A.		1 New street
Perkins, Edwin E.		
Perkins, H. W.	H. Knickerbacker & Co.,	15 New street
Perry, William H.		12 Exchange court
Peters, C. G.	Peters & Judge,	67 Exchange place

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Phillips, J. F.	F. B. Wallace & Co.	29 Broad street
Phipard, W. T.	Whitehouse & Co.,	25 Broad street
Plaat, M. A.		
Pomroy, H. K.	Pomroy Bros.,	46 Broad street
Pondair, John		42 Exchange place
Porter, Timothy H.	Soutter & Co.,	78 Broadway
Post, J. B.		5 New street
Post, S. L., Jr.		40 Broad street
Pott, Gideon		29 New street
Prentice, Henry		18 New street
Prentice, N. S.	At DeMott & Durant,	19 New street
Prince, Haywood,	Prince & Nott,	32 New street
Prince, John D.	Prince & Whitely,	64 Broadway
Probst, J. D.	J. D. Probst & Co.,	52 Exchange place
Putnam, A. E.		17 Wall street
Putnam, N. D.	Putnam & Earle,	5 Wall street
Putnam, W. A.	At Putnam & Earle,	5 Wall street
Quackenbush, S.	E. Sweet & Co.,	38 Broad street
Quick, T. W.		26 Broad street
Quick, W. H.		19 Broad street
Quigley, J. O.		24 New street
Quincey, Charles E.	Wm. Heath & Co.,	19 Broad street
Rafel, Joseph		7 Exchange court
Randall, Charles K.		50 Exchange place
Randolph, E. D.		7 Nassau street
Rasmus, William	Rasmus & Lissignolo,	41 Exchange place
Rathbone, C. L.	Wetmore & Rathbone,	2 Nassau street
Raven, R. M.	R. M. Raven & Co.,	8 Broad street
Raymond, C. H.	Barney, Raymond & Co.,	84 Broadway
Raymond, C. M.		9 New street
Raymond, James		30 New street
Read, E. O.		49 Exchange place
Read, W. G.		70 Broadway
Read, Wm. G., Jr.		70 Broadway
Redmond, William		19 Broad street
Reid, Andrew		78 Broadway
Reed, Thomas		161 Broadway
Reese, J. Fisher		7 Exchange court
Reilly, F. A.	At J. B. Manning,	6 Wall street
Reimler, F. W.	At Gregory & Ballou,	1 Wall street
Renner, F. G.	Woerishoffer & Co.,	54 Exchange place
Reutter, Robert		50 Wall street
Reynolds, J. E.		19 Broad street
Richards, A. V.	Richards & Cohen,	7 Exchange court
Richards, S. S.		22 Pine street
Richards, T. P.		22 Pine street
Richmond, David		33 New street
Richmond, George		33 New street
Rigney, T. G.		5 New street
Robeson, W. P.	Mills, Robeson & Smith	2 Exchange court
Robins, Francis F.	Robins & Robinson,	31 Broad street
Robinson, Beverly		50 Exchange place
Robinson, Charles M.		29 New street
Robinson, Clarence		4 Wall street
Robinson, F. B.	Robins & Robinson,	31 Broad street
Robinson, Nelson	Nelson Robinson & Co.,	4 Wall street
Robinson, William		11 Broad street
Robinson, William H.		35 Wall street
Rodgers, Robertson		36 Broad street
Rodgers, Edward L.	Lawrence, Rogers & Co.,	31 Broad street
Rogers, H. Livingstone	Rogers & Deghuee,	39 Exchange place
Rogers, J. W.		
Rollins, G. A.	Rollins & Co.,	13 Broad street

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Rook, E. F.		7 Exchange court
Rosenfeld, D.		15 Broad street
Roumage, C. C., Jr.		35 Broad street
Rubsamen, C. L.	Marx & Co.,	50 Exchange place
Russel, Salem T.	S. T. Russell & Co.,	6 Wall street
Rutten, August		52 Exchange place
Rutter, C. M.		17 Wall street
Rutter, J. P.	Rutter & Gross,	43 New street
Ryan, Thomas F.	C. B. Hoffman & Co.,	51 Exchange place
Ryerson, Geo. W.	Hewitt & Ryerson,	34 Wall street
Ryerson, R. C.	Ryerson & Bool,	11 Wall street
Safford, D. B.	Winslow, Lanier & Co.,	26 Nassau street
Sage, Russell		5-7 New street
Saltonstall, F. G.		
Saltonstall, L. W.	S. S. Sands & Co.,	62 Cedar street
Sands, Samuel S.	S. S. Sands & Co.,	62 Cedar street
Sands, W. R.	Keppler & Sancton,	49 Exchange place
Sancton, W. B.		27 Pine street
Snuzade, John S.		18 New street
Savin, F. W.	Savin & Harned,	9 New street
Schack, R. W.	R. W. Schack & Co.,	15 Broad street
Schafer, Simon	Schafer Bros.,	15 Broad street
Schaafer, S. M.	Schafer Bros.,	24 New street
Schanck, V. D.		18 New street
Schenck, Remsen		54 Exchange place
Schierenberg, C.		58 Exchange place
Schierenberg, A.	Chas. Unger & Co.,	46 Exchange place
Schinzal, Geo. H.		6 Wall street
Schott, C. M., Jr.		20 Exchange place
Schuster, Ignace	Speyers & Co.,	24 Pine street
Scott, Albert E.	W. B. Scott & Co.,	24 Broad street
Scott, G. S.	Scott & Leavitt,	34 Broad street
Scott, Wm. L.	At C. J. Osborn & Co.,	9 New street
Scovill, Thomas L.		30 Broad street
Scranton, G. B.	Scranton & Willard,	
Searls, William		
Searls, Charles	J. & W. Seligman & Co.,	19 Broad street
Seligman, James	Asiel & Co.,	51 Exchange place
Seligman, Morris		6 Exchange court
Selmser, E. P.		17 Broad street
Selover, J. M.	Nelson Robinson & Co.	4 Wall street
Seney, Robert		13 William street
Seymour, W., Jr.		6 Wall street
Shaw, E. H.		30 Broad street
Shelton, W. H., Jr.		13 Broad street
Sherman, G., Jr.		14 New street
Shepard, A. W.		18 New street
Shepard, J. F.		26 Broad street
Sherwood, Isaac		71 Broadway
Simmons, J. E.	Simons & Chew,	Exchange court
Simons, J. D.		18 Wall street
Sinzheimer, S.		17 Nassau street
Sistare, W. H. M.	Skelding & Halsted.	54 Wall street
Skelding, F. E.		80 Broadway
Skinner, Samuel T.		
Slaughter, A. O.	J. Bloodgood & Co.,	84 Broadway
Slayback, John D.	Smalley & Hone,	53 Exchange place
Smalley, W. E.		52 Broadway
Smith, Benj. G., Jr.		43 Exchange place
Smith, Clifton H.		24 Broad street
Smith, D. Henry	Robins, Powell & Co.,	40 Wall street
Smith, Fitch W.		65 Exchange place
Smith, Henry N.	Jameson, Smith & Cotting,	14 Broad street
Smith, James D.	Wm. Alex. Smith & Co.,	40 Wall street
Smith, Wm. Alex.		

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Smith, W. Peck,	H. B. & W. P. Smith.	17 New street
Smith, W. P.	Breeze & Smith,	9 New street
Smithers, C. H.	Smithers & Donald,	3 Broad street
Smyth, B. L.		51 Exchange place
Soutter, W. K.	Soutter & Co.,	78 Broadway
Speyers, A. G. P.		19 Broad street
Stanton, N. P.		17 William street
Stanton, S. F.		2 New street
Starr, Daniel E.	Starr & Riker,	27 New street
St. George, C. R.		36 Broad street
Stebbins, Chas. H.	H. G. Stebbins & Sons,	46 Exchange place
Stebbins, H. G.	H. G. Stebbins & Sons	64 Exchange place
Stebbins, James H.		
Stead, Charles M.	Allen & Stead,	62 Broadway
Stedman, E. C.		80 Broadway
Stephens, J. O.		17 New street
Stevens, B. K.		6 Broad street
Stevens, P. H.		14 Wall street
Sternberger, M.	M. & S. Sternberger,	17 Broad street
Sterling, Jos. H.	J. H. Sterling & Co.,	15 Wall street
Stickland, John D.	H. G. Stebbins & Co.	46 Exchange place
Stiles, A. B.		16 New street
Stockwell, A. B.	At C. H. Osborn & Co.,	34 Broad street
Stokes, Walter C.	Tappan & Stokes,	64 Broadway
Stokes, Charles.		7 Exchange court
Stokes, John S.		64 Broadway
Stone, Joseph S.		
Stout, Jos. S.	Stout & Co.,	25 Broad street
Stout, Jacob.	Stout & Thayer,	2 Exchange court
Strong, W. E.	Work, Strong & Co.,	36 Broad street
Struthers, James.	James Struthers & Co..	32 Broad street
Stuckle, F. W.		1 Wall street
Sturgis, F. K.	Work, Strong & Co.,	36 Broad street
Stuyvesant, Robert		72 Broadway
Sus, Hermann.		62 Cedar street
Suydam, James S.		39 William street
Swan, F. G.	L. H. Niles,	8 Broad street
Swords, Henry C.	Gould, Barbour & Swords,	92 Broadway
Tacqe, E. G.		53 Exchange place
Talbert, B. G.	John H. Davis & Co.,	17 Wall street
Talcott, A. B.	Talcott & Sons,	38 Broad street
Talman, Geo. H.		5 Wall street
Tappin, J. C.	Tappin & Stokes,	64 Broadway
Taylor, Alexander		56 Broadway
Taylor, Alex., Jr.,	Alex. Taylor's Sons,	56 Broadway
Taylor, J. H.		2 Nassau street
Taylor, P. Burnett	Taylor Bros.,	17 Wall street
Taylor, W. L.	Taylor Bros.,	17 Wall street
Taylor, Wm.		7 Exchange court
Taylor, W. B.	W. B. Taylor & Co.,	8 Wall street
Ten Brook, John		20 Broad street
Thayer, Nathan	H. T. Godet & Co.,	25 New street
Thayer, S. H.	Stout & Thayer,	2 Exchange court
Thomas, A. D.	A. D. Thomas & Co.,	26 Broad street
Thomas, Ludlow		37 Pine street
Thomas, Ronald		19 Broad street
Thomas, R. H.	Titus & Thomas,	4 Broad street
Thomson, Eugene		15 Wall street
Thompson, A. L.		14 New street
Thompson, John		Chase Nat'l Bank
Thompson, P. H.	Thompson & Nyse,	36 Broad street
Thorne, T. W.	T. W. Thorne & Co.,	30 Broad street
Tileston, Thomas	Davis & Tileston,	1 Exchange court
Tillinghast, W. E.		58 Broadway

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Tilghman, S.		8 Wall street
Tilman, J. H.		7 New street
Timpson, E. W.	Dater & Timpson,	26 Broad street
Titus, T. F.		11 Wall street
Towar, Thos. H.		11 Wall street
Tower, A. Clifford	Edward Sweet & Co.,	38 Broad street
Townsend, Chas. W.	O. M. Bogert & Co.,	108 Broadway
Towt, C. D.		30 Broad street
Trask, Spencer	Trask & Francis	70 Broadway
Trask, Wayland	A. M. Kidder & Co.,	Wall street & Broadway
Travers, E. M.	At White, Morris & Co.,	6 Wall street
Travers, John, Jr.,	French & Travers,	25 William street
	{ Prince & Whitely, }	
Travers, W. R.	{ Van Emburgh & }	19 & 39 New street
	{ Atterbury. }	
Treichel, W. P. C.		26 Broad street
Trevor, John B.	J. B. Colgate & Co.,	47 Wall street
Trowbridge, C. J.	C. J. Osboin & Co.,	34 Broad street
Truman, Henry H.		78 Broadway
Truman, M. M.		78 Broadway
Trumbull, J.	H. L. Horton & Co.,	56 Broadway
Tunis, W. E.		5 Wall street
Turner, Archibald	Archibald Turner & Co.,	22 Nassau street
Turner, C. J.	Wellington Clapp & Co.,	28 Broad street
Tuttle, W. P.		51 Exchange place
Underhill, E. B.	Buckingham & Underhill,	24 Broad street
Unger, C.	Charles Unger & Co.,	46 Exchange place
Vail, D. Duncan		80 Broadway
Vassier, M.		18 New street
Valentine, Isidore		26 Broad street
Van Boskerck, L. J.	L. J. Van Boskerck & Co.,	2 Exchange court
Van Deventer, C. H.	Van Deventer & Patton,	6 Wall street
Van Dyck, A. V.	B. Van Dyck & Williams,	66 Exchange place
Vanderhoef, T. S.	McMichen & Co.,	13 Broad street
Vanderhoof, E. A., Jr.	Montague & Vanderhoof,	56 Broadway
Van Emburgh, D. B.	Van Emburgh & Atterbury,	39 New street
Van Schaick, E. H.		
Van Schaick, J.	Van Schaick & Co.,	32 Broad street
Van Schaick, W. M.	Van Schaick & Co.,	32 Broad street
Verhuyen, Henry F.		38 Exchange place
Vernan, A. H.		53 New street
Voorhees, W. D.	Voorhees & Imbrie,	2 Wall street
Voorhees, C. H.		5 Wall street
Wadsworth, C. D.	A. H. Brown & Co.,	7 Wall street
Wadsworth, Strong		78 and 80 Broadway
Wadsworth, W. B.	Sheldon & Wadsworth,	10 Wall street
Wainright, C. A.		8 Broad street
Walbridge, D. M.		8 Broad street
Walcott, J. C.	J. C. Walcott & Co.,	29 Broad street
Waldron, John C.		54 Wall street
Walker, Francis T.	F. T. Walker & Co.,	
Walker, Joseph		2 New street
Wallace, F. B.	F. B. Wallace & Co.,	29 Broad street
Wallace, John		36 New street
Waller, Robert	Kendall & Waller,	30 Broad street
Wallingford, J. A.		15 New street
Walsh, J. Lawrence	J. Lawrence Walsh & Co.	19 Broad street
Walsh, R. M. L.	R. M. L. Walsh & Co.,	19 Broad street
Walsh, Samuel A.		26 Broad street
Ward, W. G.		54 Wall street
Warner, H. S.		44 Wall street
Warren, J. K.		15 New street
Watts, G. B.		

Members—CONTINUED.

NAME.	FIRM.	OFFICE.
Webster, W. H.	W. H. Webster & Co.,	66 Broadway
Weeber, William,	Roll Keeper,	Stock Exchange
Weeks, James,	Baldwin & Weeks,	90 Broadway
Wells, Charles J.		70 Cedar street
Westervelt, J. C.	J. K. Gracie & Westervelt,	37 New street
Weston, F. S.		35 New street
Wetzler, G. J.	J. D. Probst & Co.,	52 Exchange place
Wheeler, Obed.		80 Broadway
Wheeler, W. B.		80 Broadway
Whitehouse, Geo. M.		25 Broad street
Whitehouse, J. H.	Whitehouse & Co.,	25 Broad street
White, B. Ogden.	Secretary,	Stock Exchange
White, C. G.		19 New street
White, Frederick,	White, Morris & Co.,	18 Wall street
White, L. L.	L. L. White & Co.,	4 Wall street
White, R. K.		18 Wall street
White, S. V.		8 Wall street
White, W. R.	White & Randolph,	36 Broad street
Whitely, James	Prince & Whitely,	64 Broadway
Whitfield, Frank B.		9 New street
Whitfield, J. P.		52 Broadway
Whittemore, E. P.		14 Broad street
Whittemore, R. B.	Whittemore & Co.,	37 Exchange place
Whittingham, W. H.	Whittingham & Washburn,	11 Wall street
Wilcox, H. R.		64 Broadway
Wiley, W. G.		25 Broad street
Willard, E. K.	Scranton & Willard,	30 Broad street
Willard, D. Seymour	Howard Lapsley,	15 Broad street
Williams, A. D.		16 New street
Williams, C. P.		2 Exchange court
Williams, E. T.	E. T. Williams & Co.,	30 Broad street
Williams, H. C.	H. C. Williams & Co.,	49 Wall street
Williams, H. M.		17 New street
Williams, J. C.	J. C. Williams & Co.,	36 Broad street
Williams, J. P.		2 Exchange court
Williams, T. B.	Van Dyck & Williams,	66 Exchange place
Williams, W. S.		2 Exchange court
Williams, W. T.		8 Broad street
Wilson, H. S.	H. S. Wilson & Bro.	9 New street
Wilson, John D.	H. S. Wilson & Bro.	9 New street
Wilson, J. B. Jr.		9 New street
Wilson, Theodore	At J. B. Colegate & Co.	47 Wall street
Winchester, J. T.		7 New street
Wing, F. H.		43 New street
Winthrop, Robert	R. Winthrop & Co.,	52 Wall street
Woerishoffer, C. F.	Woerishoffer & Co.,	54 Exchange place
Wolff, A. Jr.		44 Exchange place
Wolff, Julius R.	Wolff Bros.	44 Exchange place
Wolff Chas. G.	Wolff Bros.	44 Exchange place
Wood, A. G.		7 Exchange court
Wood, C. D.	Wood & Davis,	31 Pine street
Wood, H. Duncan	Wood & Schenk,	28 Broad street
Woodman, G.		
Woodward, E. P.	Musgrave & Co.,	29 Pine street
Worden, Dan'l T.	Worden & Leverich,	48 Wall street
Work, Frank	Work, Strong & Co.,	36 Broad street
Work, Frank, Jr.		36 Broad street
Wormser,	I. & S. Wormser,	1 Broad street
Wright, J. Hood	Drexel, Morgan & Co.,	1 Broad street
Yerkes, C. T., Jr.		
Young, A.	Arents & Young,	9 New street
Young, T. S., Jr.		74 Broadway
Young, W. E.		18 New street
Zerega, John A.		17 New street

COLORADO.

Its Mineral Resources, Mining Laws, &c.

The recent mineral discoveries in Colorado have attracted the attention of capitalists and miners in all parts of the world. Particularly is this interest directed to Leadville, in Lake county, where the ore lode, or more properly speaking, deposit, lies differently from any other mineral formation ever discovered. And not only is the ore-body remarkable in its position—being almost as flat as a lake of salt-marsh—but it is equally remarkable, in fact, almost fabulous in its richness, and wonderful in its extent.

A brief history of this growing State, which has so rapidly stepped to the front in its mineral productions, agricultural resources, healthful climate, and magnificent scenery, may not be uninteresting to the readers of the *Mining Review*. It was born in 1876, just 100 years after the declaration of Independence gave our nation its liberty, and is therefore the youngest in the grand constellation of stars that adorn the emblem of our country. Fifteen years prior to its admission into the Union as a sovereign State (February, 1861) it was organized as a territory, portions of Nebraska, Kansas, Utah and New Mexico having been cut off for that purpose. The United States acquired possession of the eastern portion of the territory in 1803, it having been a portion of the French possession prior thereto, and was included in the Louisiana purchase. The portion lying west of the Rocky Mountains was ceded to this government in 1848, by virtue of the treaty with the Mexican government, signed by Guadalupe Hidalgo. It has been inhabited by the Spaniards and Mexicans for over 300 years. The first discovery of the precious metals was made in 1852. Very little was known of the territory until the celebrated explorations of Gen. Fremont (now Governor of Arizona) in 1842-44. The State of Colorado is 380 miles in length by 280 in width, and contains 106,500 square miles. It has a population of about 180,000; taxable property valued at \$60,000,000; and an annual product from mining, manufacturing, and agriculture of not less than \$30,000,000. Its bullion products will be largely increased the present year, with every prospect of appreciating for years in the future, in proportion to the increase of milling, smelting and transportation facilities, even should no new districts be opened.

Leadville, as previously stated, is the central point of interest at the present time. The town is situated 145 miles south-west of Denver, in a basin of the Rocky Mountains, at an elevation of a little over 10,000 feet above the sea level. It contains a population of about 11,000, two-thirds of the number, at least, being men between the ages of twenty-two and forty-five. It contains three banks, three newspapers, a number of large hotels, and the usual supply stores, saloons, gambling houses, etc., of a flourishing mining camp.

A list compiled in February, 1879, of fifty-six ore-producing mines, shows the daily product to be 560 tons, valued in the aggregate at \$45,000, daily; \$1,350,000 for the month; \$16,200,000, annually. The mines, statements from which were obtained, are as follows—but the list is far from being complete, and may be added to almost daily:

NAMES OF MINES	NO. OF TONS.	NAMES OF MINES.	NO. OF TONS.
Adlaide.....	15	Little Chief.....	30
Agassiz.....	15	Little Giant.....	5
Almee.....	5	Little Eva.....	5
Belcher.....	5	Little Pittsburg.....	40
Camp Bird.....	30	Luella.....	5
Carbonate.....	15	Matchless.....	5
Carboniferous.....	15	Morning Star.....	10
Catalpa.....	5	New Discovery.....	40
Chieftain.....	5	Pine.....	10
Chrysolite.....	40	Ranchero.....	5
Climax.....	5	Ready Cash.....	0
Crescent.....	20	Result.....	5
Dives.....	5	Robert Emmet.....	15

NAMES OF MINES.	NO. OF TONS.	NAMES OF MINES.	NO. OF TONS.
Dome.....	5	Shamrock.....	5
Double Decker.....	10	Silver Wave.....	5
Duncan.....	5	Stone.....	5
Dyer and Long and Berry.....	20	Stray Horse.....	5
Eaton.....	5	Terrible.....	5
Evening Star.....	5	Tiger.....	5
Faint Hope.....	5	Union.....	5
Fairview.....	5	Vulture.....	5
Gambetta.....	5	Winnemuc.....	20
Grand View.....	5	Wm. Reddick.....	5
Gone Abroad.....	10	Wolf Tone.....	5
Iron.....	30	Yankee Doodle.....	5
J. D. Dana.....	5		
Keystone.....	10	Total number of Tons.....	560
Lime.....	5		

The principal smelting works report that during January last one of these treated 1,762,-650 pounds of ore, and produced 5111 bars of bullion, weighing 443,918 pounds. During the same month another treated 1050 tons of ore, producing 582,000 pounds of bullion, which assayed 342 ounces of silver to the ton. In the same month this firm purchased 860 tons of ore, averaging 108 ounces of silver per ton, and containing about thirty per cent of lead. Another large firm treated over 1000 tons of ore, and with equally satisfactory results. During January, also, one large firm bought and shipped to Denver, Colorado Springs, Cañon City, and Alamosa, 1600 tons of ore, assaying 155 ounces of silver, and thirty-four per cent of lead. With silver at \$1.10 per ounce, and lead at \$75 per ton, this would give a coin value of \$334,736 for one month. A large quantity of ore was also purchased and stored, waiting the completion of the railroad.

Ten Mile Creek, some sixteen miles north of Leadville, is an exceedingly promising district. It lies in a basin formed by three spurs of the mountains, and includes Clinton, Cocomo, McNulty, Mayflower and Searles gulches. The elevation is about 11,000 feet, or nearly at "snow level." Gold placer-mining has been carried on in several of these gulches for a number of years.

Boulder City is one of the most flourishing camps in the State, having in addition to the hundreds of rich mines in the vicinity, extensive smelting works and other manufacturing establishments. Among the mines tributary to Boulder, we note the Carriboo, American, Melvina, Ni Wot, No Name, John Jay and Sherman. Boulder has a population of over 3000, and is the seat of the State University and the Agricultural and Mechanical College. It lies at an elevation of over 5500 feet.

Golden City is a prosperous mining and manufacturing town, of over 4000 inhabitants, situated sixteen miles west of Denver. It was settled twenty years ago, and possesses all the religious and educational privileges of our best eastern towns.

Central City, capital of Gilpin County, is almost wholly a mining camp. It is 8200 feet above tide water.

Black Hawk, lying four miles down the cañon, is also a prosperous camp, and is noted for its numerous quartz mills.

Georgetown, the county seat of Clear Creek County, is a lively town of 4500 people, and possesses gas works, banks, several newspapers and fine business blocks. It is the center of the great mining region, and has numerous quartz mills, reduction works, assay offices, &c. Clear Creek County mines have produced over \$14,000,000. Georgetown is fifty-four miles from Denver, and its elevation is 8550 feet.

In south-western Colorado, in the Counties of Hinsdale, La Plata, San Juan, Ouray, Conijos, Rio Grande and Saguache, during the past three years, over ten thousand mines and claims have been located, and the future of this part of the State is exceedingly promising.

MINING LAWS OF NEW YORK, COLORADO, NEW MEXICO AND GEORGIA.

Mining Laws of the State of New York.

The following sections from the act and amendments authorizing the formation of corporations, furnish full information for the organization and government of mining companies in the State of New York :

FORMING CORPORATIONS.

At any time hereafter, any three or more persons may form a corporation for the purpose of carrying on any kind of manufacturing, mining, mechanical, chemical, agricultural, horticultural, medical or curative business ; may make, sign and acknowledge, before some officer competent to take acknowledgement of deeds, and file the same in the office of the clerk of the county in which the business of the company shall be carried on, and a duplicate in the office of the Secretary of State, a certificate in writing, in which shall be stated the corporate name of said company and the objects for which it shall be formed, the amount of its capital stock, the number of shares of which said stock shall consist, the term of its existence, not exceeding fifty years, the number of its trustees, and the names of those who shall manage the concerns of the company for the first year, and the names of the town or city and county in which the operations of said company shall be carried on.— [*Laws of 1866, chap. 838, sec. 2.*]

EXTENDING TIME OF EXISTENCE.

Any company or corporation heretofore formed under any general law of this State, at any time within three years of the expiration of its term of existence, may extend the term of existence of such company or corporation beyond the time mentioned in the original articles of association or certificate of incorporation, by the consent of the stockholders owning two-thirds in amount of the capital stock of such company or corporation, in and by a certificate to be signed by such stockholders, and acknowledged or proved, so as to enable them to be recorded, which certificate shall be filed in the office of the Secretary of State, and in the office of the clerk of the county in which its original certificate or articles of association, if any, are filed or recorded ; and the said Secretary of State and the clerk of such county shall, upon such filing, record the same in the books kept in their respective offices for the record of articles of association, and make a memorandum of such record in the margin of the original articles of association, in such book, and thereupon the time of existence of such company shall be extended, as designated in such certificate, for a term not exceeding the term for which said company or corporation was organized in the first instance.— [*Laws of 1867, chap. 937.*]

PLACE OF BUSINESS,

Any certificate hereafter [June 7, 1853] filed, may designate one or more places where the company may carry on their business. [*Laws of 1853, chap. 333, sec. 1.*] If any company shall be formed under said act for the purpose of carrying on any part of its business in any place out of this State, the said certificate shall so state, and shall also state the name of the town and county in which the principal part of the business of said company within this State is to be transacted ; and said town and county shall be deemed the town, place and county in which the operations and business of the company are to be carried on, and its principal place of business within the meaning of the provisions of this act.— [*Laws of 1857, chap. 29, sec. 5.*]

TAXABLE AT PRINCIPAL PLACE OF BUSINESS.

No company organized under the provisions of said act to authorize the formation of corporations for manufacturing, mining, mechanical or chemical purposes, shall be deemed or taken to have a principal office or place for transacting its financial concerns other than that at which the operations of said company are carried on, unless, within the month of May in each year, the president and treasurer, or a majority of the trustees, shall make duplicate certificates, stating the amount of the then capital of said company, and the portion of such capital not invested in real estate, and stating that such company then has a principal office for transacting its financial concerns in a county other than that in which the operations of said company are carried on, stating the town or city and county in which such financial office is located, and that the president and treasurer, and a majority of the trustees of said company, are then actually residents of the town or city in which such financial office is then located, which duplicate certificates shall be signed and sworn to by the persons

making the same, and filed, the one in the clerk's office of the county where the operations of said company are carried on, and the other in the clerk's office in which such financial office shall be. And in case in any year such duplicate certificates shall be made and filed as aforesaid, then during the year succeeding the first day of June next after the filing of such certificates, the personal estate of such company shall be assessed only in the town or ward named in said certificate as that in which such financial office is located.—[*Laws of 1861, chap. 170, sec. 2.*]

CHANGE OF PLACE OF BUSINESS—FILING AMENDED CERTIFICATE.

Any company formed under this act may change its place or places of business, by a vote of the stockholders representing two-thirds of the stock, at any meeting of the stockholders regularly called, and executing and acknowledging an amended certificate, specifying the names of towns and cities from and to which the business location of the company is to be changed, and in other respects conforming to the original certificate, which amended certificate shall be signed by the president and two-thirds of the directors of the company, and shall be filed in the office of the Secretary of State, and in the office of the clerk of the county where the business operations of the company are to be carried on, and published weekly in two papers in the towns or cities from and to which the business operations have been removed, and are to be carried on, for the term of three months. But the property of said company shall be liable to taxation in any county where such property may be, or in which its business may be done, to the extent of its property in any such county.—[*Laws of 1864, chap. 517, sec. 1.*]

WATER COMPANIES FOR MINING.

Any three or more persons may organize and form themselves into a corporation, in the manner specified and required in and by this act, for the purpose of accumulating storing, conducting, furnishing and supplying water for mining purposes, and may acquire, take, hold, lease and convey lands and water-power suitable for those purposes.—[*Laws of 1866, chap. 371, sec. 1.*]

Every corporation so formed, and the stockholders thereof, shall be subject to all the provisions, duties and obligations contained in the above mentioned act, and shall be entitled to all the benefits and privileges thereby conferred, except that such corporations shall not be confined in their operations to the county in which their certificate shall be filed. [*Id. sec. 2.*]

It shall and may be lawful for any corporation heretofore incorporated for mining purposes under the act, to conduct the business for which the formation of corporations is authorized by said first section, provided the intention so to do shall be specified among the objects for which such corporation is formed in its certificate of incorporation. [*Id. sec. 3.*]

WHEN AN ORGANIZATION BECOMES A BODY CORPORATE.—ITS POWERS, ETC.

When the certificate shall have been filed as aforesaid, the persons who shall have signed and acknowledged the same, and their successors, shall be a body politic and corporate in fact and in name, by the name stated in such certificate; and by that name have succession; and shall be capable of suing and being sued in any court of law or equity in this State, and they and their successors may have a common seal, and may make and alter the same at pleasure; and they shall by this corporate name be capable in law of purchasing, holding and conveying any real and personal estate whatever which may be necessary to enable the said company to carry on their operations named in such certificate, but shall not mortgage the same or give any time thereon. [*Laws of 1864—sec. 2.*]

NUMBER AND ELECTION OF TRUSTEES.

The stock, property and concerns of such company shall be managed by not less than three, nor more than nine, trustees, who shall respectively be stockholders in such company and citizens of the United States, and a majority of whom shall be citizens of this State, who shall, except the first year, be annually elected by the stockholders, at such time and place as shall be directed by the by-laws of the company; and public notice of the time and place of holding such election shall be published, not less than ten days previous thereto, in the newspaper printed nearest to the place where the operations of the said company shall be carried on; and the election shall be made by such of the stockholders as shall attend for that purpose, either in person or by proxy. All elections shall be by ballot, and each stockholder shall be entitled to as many votes as he owns shares of stock in the said company; and the persons receiving the greatest number of votes shall be trustees; and when any vacancy shall happen among the trustees, by death, resignation or otherwise, it shall be filled for the remainder of the year in such manner as may be provided for by the by-laws of the said company.—*sec. 2.*

This section is amended so as to allow corporations not less than three nor more than thirteen trustees. [*Laws of 1860, chap. 269, sec. 1.*]

DESIGNATION, ELECTION AND POWERS OF OFFICERS.

There shall be a president of the company, who shall be designated from the number of the trustees, and also such subordinate officers as the company by its by-laws may designate, who may be elected or appointed, and required to give such security for the faithful performance of the duties of their office as the company, by its by-laws, may require.

Where an officer, though not empowered by the by-laws of the company to do certain acts—*e. g.*, to sign notes or borrow money—has been permitted to do so, if not authorized, for a long time, it was held, that one who had lent him money for the company and taken a check of the company signed by him, could recover against the corporation. (*Beers v. Phoenix Glass Co.* 14 *Barb.* 358.)

The president has no authority by virtue of his office merely, without reference to powers actually conferred, to borrow money for the company. (*Lite and Fire Ins. Co., v. Mechanic Fire Ins. Co.*, 7 *Wend.* 31.)

An authority given an officer to collect and pay debts, does not involve the power to sell and assign securities without authority from the trustees. (*Jackson v. Campbell*, 5 *Wend.* 572. See, also, *Hoyt v. Thompson*, 5 *N. Y.* 320; *s. c.* 3 *Bosw.* 267.)

The directors of a corporation have no power to sell the entire movable property of the corporation; and such a sale made by them is void as against such stockholders as do not assent. (*Abbott v. Hard Rubber Co.*, 11 *Abb. Pr.* 204.)

TRUSTEES TO MAKE CALLS ON STOCKHOLDERS.

It shall be lawful for the trustees to call in and demand from the stockholders respectively, all such sums of money by them subscribed, at such times and in such payments of installments as the trustees shall deem proper under the penalty of forfeiting the shares or stock subscribed for, and all previous payments made thereon, if payment shall not be made by the stockholders within sixty days after a personal demand or notice, requiring such payment, shall have been published for six successive weeks in the newspapers nearest to the place where the business of the company shall be carried on as aforesaid.—[*Sec. 6.*]

The right to forfeit the stock for non-payment of subscriptions, does not prevent the trustees, if they prefer so to do, to bring an action for the subscription. But the trustees cannot forfeit the stock and also sue for the subscription.—*N. Y. Reports.*

TO MAKE PURCHASES, ISSUE STOCK THEREFOR, ETC.

The trustees of such company may purchase mines, manufactories and other property necessary for their business, and issue stock to the amount of the value thereof, in payment therefor, and the stock so issued shall be declared and taken to be full stock, and not liable to any further calls; neither shall the holders thereof be liable for any further payments under the provisions of the tenth section of the said act; but in all statements and reports of the company to be published, this stock shall not be stated or reported as being issued for cash paid into the company, but shall be reported in this respect according to the fact.—[*Laws 1853, chap. 333, sec. 2.*]

TRUSTEES TO MAKE BY-LAWS,

The trustees of such company shall have power to make such prudential by-laws as they shall deem proper for the management and disposition of the stock and business affairs of such company, not inconsistent with the laws of this State, and prescribing the duties of officers, artificers and servants that may be employed, for the appointment of all officers, and for carrying on all kinds of business within the objects and purposes of such company.

A by-law of a corporation declared that five directors should be a quorum for the transaction of "ordinary business." Held, that the general business of the corporation thus indicated embraced the power of pledging or assigning assets to secure debts. (*Hoyt v. Thompson*, 19 *N. Y. Reports*, 207.) A by-law of a corporation, enacted under the express authority of an act of the Legislature, and in conformity with the power conferred, has the same force as if it were enacted by the Legislature. (*Brick Church v. Mayor, &c. of N. Y.* 5 *Cow.* 538; *McDermott v. Board of Police*, 5 *Abb. Pr.* 422.)

LIABILITY OF STOCKHOLDERS TO CREDITORS OF COMPANY, CAPITAL STOCK—WHEN TO TO BE PAID IN.

All the stockholders of every company incorporated under this act shall be severally individually liable to the creditors of the company in which they are stockholders, to an amount equal to the amount of stock held by them respectively, for all debts and contracts made by such company, until the whole amount of capital stock fixed and limited by such company shall have been paid in, and a certificate thereof shall have been made and recorded as prescribed in the following section; and the capital stock, so fixed and limited, shall all be paid in, one-half thereof within one year, and the other half thereof within two years, from the incorporation of said company, or such corporation shall be dissolved.—[*See Sec. 14, post.*]

ANNUAL REPORT TO BE MADE AND PUBLISHED, INDIVIDUAL LIBERALITY OF TRUSTEES FOR DEBTS OF COMPANY.

Every such company shall, within twenty days from the first day of January, if a year from the time of the filing of the certificate of incorporation shall then have expired, and if so long a time shall not have expired, then within twenty days from the first day of January

in each year after the expiration of a year from the time of filing such certificate, make a report, which shall be published in some newspaper published in the town, city, or village; or if there be no newspaper published in said town, city or village, then in some newspaper published nearest the place where the business of the company is carried on, which shall state the amount of capital, and of the proportion actually paid in, and the amount of its existing debts, which report shall be signed by the president and a majority of the trustees, and shall be verified by the oath of the president or secretary of said company, and filed in the office of clerk of the county where the business of the company shall be carried on, and if any of said companies shall fail so to do, all the trustees of the company shall be jointly and severally liable for all the debts of the company then existing, and for all that shall be contracted before such report shall be made; but whenever under this section a judgment shall be recovered against a trustee severally, all the trustees of the company shall contribute a ratable share of the amount paid by such trustee on such judgment, and such trustee shall have a right of action against his co-trustees, jointly or severally, to recover from them their proportion of the amount so paid on such judgment; provided that nothing in this act contained shall effect (*sic*) any action now pending.—[*As amended Laws of 1871, ch. 657, sec. 3; Laws of 1875, ch. 510.*]

STOCK TO BE PAID IN CASH.

Nothing but money shall be considered as payment of any part of the capital stock, and no loan of money shall be made by any such company to any stockholder therein, and and if any such loan shall be made to a stockholder, the officers who shall make it, or who shall assent thereto, shall be jointly and severally liable to the extent of such loan and interest, for all the debts of the company contracted before the repayment of the sum so loaned.—[*Sec. 14.*]

TRUSTEES LIABLE FOR FALSE CERTIFICATES OR REPORTS,

If any certificate or report made, or public notice given by the officers of any such company, in pursuance of the provisions of this act, shall be false in any material representation, all the officers who shall have signed the same, knowing it to be false, shall be jointly and severally liable for all the debts of the company contracted while they are stockholders or officers thereof.—[*Sec. 15.*]

Annexed are two forms of certificates of incorporation :

I.

CERTIFICATE OF INCORPORATION WHERE BUSINESS IS TO BE CARRIED ON WITHIN THE STATE.

State of New York, Town (or city) of _____ County of _____, ss. :

We (*insert names of subscribers, to be not less than three*), do hereby certify that we desire to form a company pursuant to the provisions of an act entitled "An act to authorize the formation of corporations for manufacturing, mining, mechanical, or chemical purposes," passed February 17, 1848, and of the several acts extending and amending said act. That the corporate name of the said company is to be (*insert name of company*), and the objects for which the company is to be formed are (*insert objects for which company formed*); that the amount of the capital stock of the said company is to be (*insert amount of capital stock*); that that the term of the existence of the said company is to be (*state number of years, not exceeding fifty years*); that the number of shares of which the said stock is to consist is to be (*insert number*); and the number of the trustees who shall manage the concerns of said company shall be (*insert number of trustees, not less than three, nor more than thirteen*); and the names of such trustees for the first year are (*insert names of trustees*);* and the names of the town and county (*or towns and counties*) in which the operations of the said company are to be carried on are (*insert names of town and county, or towns and counties*).

(To be signed by the persons whose names are inserted at the commencement of the certificate, in the presence of, and to be acknowledged before, some officer competent to take the acknowledgment of deeds. When so signed and acknowledged, it is to be filed with the clerk of the county in which it is stated that the operations of the company are to be carried on, and a certified copy is to be filed in the office of the Secretary of State.)

On this _____ day of _____, A. D. 187 _____, before me personally appeared (*insert names of subscribers to the certificate*), to me known to be the individuals described in and who executed the foregoing certificate, and they severally, before me, signed the said certificate, and acknowledged that they signed the same for the purposes therein mentioned.

(*Signature and designation of officer.*)

II.

CERTIFICATE OF INCORPORATION WHERE BUSINESS OR PART OF IT IS TO BE CARRIED ON OUT OF THE STATE.

(Proceed as in preceding form to the asterisk *) The said company is formed for the purpose of carrying on some part of its business out of the State of New York, namely, at (*insert name of place*), and the names of the town and county in which the principal part of the business of the said company is to be transacted are (*insert names of town and county*.)

(To be signed, acknowledged, and filed as directed with respect to Certificate No. 1.)

Mining Laws of Colorado.

THE GENERAL ACT.

EXTENT OF LODE CLAIM.

SECTION 1. The length of any lode claim hereafter located may equal, but not exceed, fifteen hundred feet along the vein.

DIMENSIONS.

SEC. 2. The width of lode claims hereafter located in Gilpin, Clear Creek, Boulder and Summit counties, shall be seventy-five feet on each side of the centre of the vein or crevice; and in all other counties the width of the same shall be one hundred and fifty feet on each side of the centre of the vein or crevice: *Provided*, That hereafter any county may, at any general election, determine on a greater width, not exceeding three hundred feet on each side of the centre of the vein or lode, by a majority of the legal votes cast at said election; and any county, by such vote at such election, may determine upon a less width than above specified.

CERTIFICATE OF LOCATION.

SEC. 3. The discoverer of a lode shall, within three months from the date of discovery, record his claim in the office of the recorder of the county in which such lode is situated by a location certificate, which shall contain: 1st, the name of the lode; 2d, the name of the locator; 3d, the date of location; 4th, the number of feet in length claimed on each side of the centre of the discovery shaft; 5th, the general course of the lode as near as may be.

WHEN VOID.

SEC. 4. Any location certificate of a lode claim which shall not contain the name of the lode, the name of the locator, the date of the location, the number of lineal feet claimed on each side of the discovery shaft, the general course of the lode, and such description as shall identify the claim with reasonable certainty, shall be void.

DISCOVERY SHAFT.

SEC. 5. Before filing such location certificate the discoverer shall locate his claim by first sinking a discovery shaft upon the lode to the depth of at least ten feet from the lowest part of the rim of such shaft at the surface, or deeper, if necessary to show a well-defined crevice. *Second*, by posting at the point of discovery on the service, a plain sign or notice containing the name of the lode, the name of the locator, and the date of discovery. *Third*, by marking the surface boundaries of the claim.

STAKING.

SEC. 6. Such surface boundaries shall be marked by six substantial posts, hewed or marked on the side or sides which are in toward the claim, and sunk in the ground, to wit: One at each corner and one at the centre of each side line. Where it is practically impossible on account of bed-rock or precipitous ground to sink such posts, they may be placed in a pile of stones.

OPEN CUTS, ETC.

SEC. 7. Any open cut, cross cut or tunnel which shall cut a lode at the depth of ten feet below the surface, shall hold such lode the same as if a discovery shaft were sunk thereon, or an adit of at least ten feet along the lode, from the point where the lode may be in any manner discovered, shall be equivalent to a discovery shaft.

TIME.

SEC. 8. The discoverer shall have sixty days from the time of uncovering or disclosing a lode to sink a discovery shaft thereon.

CONSTRUCTION OF CERTIFICATE.

SEC. 9. The location or location certificate of any lode claim shall be construed to include all surface ground within the surface lines thereof, and all lodes and ledges throughout their entire depth, the top or apex of which lies inside of such lines extended downward, vertically, with such parts of all lodes or ledges as continued to dip beyond the side lines of the claim, but shall not include any portion of such lodes or ledges beyond the end lines of the claim, or at the end lines continued,

CAN NOT BE FOLLOWED.

whether by dip or otherwise, or beyond the side lines in any other manner than by the dip of the lode.

SEC. 10. If the top or apex of a lode in its longitudinal course extends beyond the exterior lines of the claim at any point on the surface, or as extended vertically downward, such lode may not be followed in its longitudinal course beyond the point where it is intersected by the exterior lines.

RIGHT OF WAY AND RIGHT OF SERVICE.

SEC. 11. All mining claims now located, or which may hereafter be located, shall be subject to the right of way of any ditch or flume for mining purposes, or any tramway or pack-trail, whether now in use or which may be hereafter laid out across any such location: *Provided always*, That such right of way shall not be exercised against any location duly made and recorded and not abandoned prior to the establishment of the ditch or flume, tramway, or pack-trail, without consent of the owner, except by condemnation, as in case of land taken for public highways. Parol consent to the location of any such easement, accompanied by the completion of the same over the claim, shall be sufficient without writings. *And provided further*, That such ditch or flume shall be so constructed that the water from such ditch or flume shall not injure vested rights by flooding or otherwise.

SEC. 12. When the right to mine is in any case separate from the ownership or right of occupancy to the surface, the owner or rightful occupant of the surface may demand satisfactory security from the miner, and if it be refused, may enjoin such miner from working until such security is given. The order for injunction shall fix the amount of the bond.

RE-LOCATION OF CLAIMS.

SEC. 13. If at any time the locator of any mining claim heretofore or hereafter located, or his assigns, shall apprehend that his original certificate was defective, erroneous, or that the requirements of the law had not been complied with before filing; or shall be desirous of changing his surface boundaries; or of taking in any part of an overlapping claim which has been abandoned; or in case the original certificate was made prior to the passage of this law, and he shall be desirous of securing the benefits of this act, such locator or his assigns may file an additional certificate, subject to the provisions of this act: *Provided*, That such re-location does not interfere with the existing rights of others, at the time of such re-location; and no such re-location, or the record thereof, shall preclude the claimants from proving any such title or titles as he or they may have held under previous location.

PROOF OF DEVELOPMENT.

SEC. 14. The amount of work done, or improvements made during each year, shall be that prescribed by the laws of the United States.

FORM OF AFFIDAVIT.

SEC. 15. Within six months after any set time, or annual period herein allowed for the performance of labor or making improvements upon any lode claim, the person on whose behalf such outlay was made, or some person for him, shall make and record an affidavit in substance as follows:

STATE OF COLORADO, }
COUNTY OF..... } ss.

Before me, the subscriber, personally appeared.....who, being duly sworn, saith that at least.....dollars' worth of work or improvements were performed or made upon [here describe the claim or part of claim] situate in.....mining district, county of.....State of Colorado. Such expenditure was made by or at the expense of.....owners of said claim, for the purpose of said claim.

[Jurat.]

And such signature shall be *prima facie* evidence of the performance of such labor. (Signature.)

WORKING OVER OLD CLAIMS.

SEC. 16. The re-location of abandoned lode claims shall be by sinking a new discovery shaft and fixing new boundaries in the same manner as if it were the location of a new claim; or the re-locator may sink the original discovery shaft ten feet deeper than it was at the time of abandonment, and erect new or adopt the old boundaries, renewing the posts if removed or destroyed. In either case a new location stake shall be erected. In any case, whether the whole or part of an abandoned claim is taken, the location certificate may state that the whole or any part of the new location is located as abandoned property.

RECORD FOR CLAIM.

SEC. 17. No location certificate shall claim more than one location, whether the location be made by one or several locators. And if it purport to claim more than one location, it shall be absolutely void, except as to the first location therein described. And if they are described together, so that it can not be told which location is first described, the certificate shall be void as to all.

SEC. 18. All acts or parts of acts in conflict with this act are hereby repealed.

SEC. 19. This act shall be in force from and after June 15, 1874.

Approved February 13, 1874.

SUPPLEMENTARY ACT APPROVED FEBRUARY 13, 1874.

JURISDICTION OF AUTHORITIES.

SEC. 1. In all actions pending in any district court of this Territory, wherein the title or right of possession to any mining claim shall be in dispute, the said court, or the judge thereof, may, upon ap-

plication of any of the parties to such suit, enter an order for the underground as well as the surface survey of such part of the property in dispute as may be necessary to a just determination of the question involved. Such order shall designate some competent surveyor, not related to any of the parties to such suit, or in any wise interested in the result of the same; and upon the application of the party adverse to such application, the court may also appoint some competent surveyor, to be selected by such adverse applicant, whose duty it shall be to attend upon such survey, and observe the method of making the same; said second surveyor to be at the cost of the party asking therefor. It shall also be lawful in such order to specify the names of witnesses named by either party, not exceeding three on each side, to examine such property, who shall hereupon be allowed to enter into such property and examine the same; said court, or the judge thereof, may also cause the removal of any rock, debris or other obstacle in any of the drifts or shafts of said property, when such removal is shown to be necessary to a just determination of the questions involved; *Provided, however,* That no such order shall be made for survey and inspection, except in open court or in chambers, upon notice of application for such order of at least six days, and not then except by agreement of parties or upon the affidavit of two or more persons that such survey and inspection is necessary to the just determination of the suit, which affidavits shall state the facts in such case, and wherein the necessity for survey exists; nor shall such order be made unless it appear that the party asking therefor has been refused the privilege of survey and inspection by the adverse party.

WRITS RESTORING POSSESSION.

SEC. 2. The said district courts of this State or any judge thereof, sitting in chancery, shall have, in addition to the power already possessed, power to issue writs of injunction for affirmative relief, having the force and effect of a writ of restitution, restoring any person or persons to the possession of any mining property from which he or they may have been ousted, by force and violence, or by fraud, or from which they are kept out of possession by threats, or whenever such possession was taken from him or them by entry of the adverse party on Sunday or a legal holiday, or while the party in possession was temporarily absent therefrom. The granting of such writ to extend only to the right of possession under the facts of the case in respect to the manner in which the possession was obtained, leaving the parties to their legal rights on all other questions as though no such writ had issued.

PENALTIES FOLLOWING UNLAWFUL ENTRY.

SEC. 3. In all case where two or more persons shall associate themselves together for the purpose of obtaining the possession of any lode, gulch, or placer claim, then in the actual possession of another, by force and violence, or threats of violence, or by stealth, and shall proceed to carry out such purpose by making threats against the party or parties in possession, or who shall enter upon such lode or mining claim for the purpose aforesaid, or who shall enter upon or into any lode, gulch, placer claim, quartz mill, or other mining property, or not being upon such property, but within hearing of the same, shall make any threats, or make use of any language, signs or gestures, calculated to intimidate any person or persons at work on said property from continuing to work thereon or therein, or to intimidate others from engaging to work thereon or therein, every such person so offending shall, on conviction thereof, be fined in a sum not to exceed two hundred and fifty dollars, and be imprisoned in the county jail not less than thirty days nor more than six months; such fine to be discharged either by payment or by confinement in said jail until such fine is discharged, at the rate of two dollars and fifty cents (\$2.50) per day. On trials under this section, proof of a common purpose of two or more persons to obtain possession of property, as aforesaid, or to intimidate laborers as above set forth, accompanied or followed by any of the acts above specified by any of them, shall be sufficient evidence to convict any one committing such acts, although the parties may not be associated together at the time of committing the same.

FORCE OR VIOLENCE.

SEC. 4. If any person or persons shall associate and agree to enter or attempt to enter by force of numbers, and the terror such numbers are calculated to inspire, or by force and violence, or by threats of violence against any person or persons in the actual possession of any lode, gulch, or placer claim and upon such entry or attempted entry, any person or persons shall be killed, said persons, and all and each of them so entering or attempting to enter, shall be deemed guilty of murder in the first degree, and punished accordingly. Upon the trial of such cases, any person or parties cognizant of such entry, or attempted entry, who shall be present, aiding, assisting, or in any wise encouraging such entry, or attempted entry, shall be deemed a principal in the commission of said offence.

SEC. 5. This act shall take effect and be in force from and after its passage.

THE ACT OF 1877.

An Act to provide for the Drainage of Mines, and to regulate the Liabilities of Miners, Mine-Owners, and Mill-Men in certain cases, and to repeal all Territorial acts on the subject.

DRAINAGE.

1830.—SECTION 1. Whenever contiguous or adjacent mines upon the same or upon separate lodes have a common ingress of water, or from subterraneous communication of the water have a common drainage, it shall be the duty of the owners, lessees or occupants of each mine so related to provide for their proportionate share of the drainage thereof.

PENALTY FOR NON-COMPLIANCE.

1831.—SEC. 2. Any parties so related failing to provide as aforesaid for the drainage of the mines owned or occupied by them, thereby imposing an unjust burden upon neighboring mines, whether owned or occupied by them, shall pay respectively to those performing the work of drainage their proportion of the actual and necessary cost and expense of doing such drainage, to be recovered by an action in any court of competent jurisdiction.

COMMON INTERESTS.

1832.—SEC. 3. It shall be lawful for all mining corporations or companies, and all individuals engaged in mining, who have thus a common interest in draining such mines, to unite for the purpose of effecting the same, under such common name and upon such terms and conditions as may be agreed upon; and every such association having filed a certificate of incorporation, as provided by law, shall be deemed a corporation, with all the rights, incidents, and liabilities of a body corporate, so far as the same may be applicable.

SUBJECT TO ACTION.

1833.—SEC. 4. Failing to mutually agree, as indicated in the preceding section for drainage, jointly, one or more of the said parties may undertake the work of drainage, after giving reasonable notice; and should the remaining parties then fail, neglect, or refuse to unite in equitable arrangements for doing the work, or sharing the expense thereof, they shall be subject to an action therefor, as already specified, to be enforced in any court of competent jurisdiction.

ACTION TO RECOVER.

1834.—SEC. 5. When an action is commenced to recover the cost and expenses for draining a lode or mine, it shall be lawful for the plaintiff to apply to the court, if in session, or to the judge thereof in vacation, for an order to inspect and examine the lodes or mines claimed to have been drained by the plaintiff; or some one for him shall make affidavit that such inspection or examination is necessary for a proper preparation of the case for trial; and the court or judge shall grant an order for the underground inspection and examination of the lode or mines described in the petition. Such order shall designate the number of persons, not exceeding three, besides the plaintiff or his representative, to examine and inspect such lode and mines, and take the measurement thereof, relating to the amount of water drained from the lode or mine, or the number of fathoms of ground mined and worked out of the lode or mines claimed to have been drained, the cost of such examination and inspection to be borne by the party applying therefor. The court or judge shall have power to cause the removal of any rock, debris, or other obstacles in any lode or vein, when such removal is shown to be necessary to a just determination of the question involved: *Provided*, That no such order for inspection and examination shall be made, except in open court or at chambers, upon notice of application for such order of at least three days, and not then except by agreement of parties, nor unless it appears that the plaintiff has been refused the privilege of making the inspection and examination by the defendant or defendants, his or their agent.

WATER RIGHTS.

1835.—SEC. 6. That hereafter, when any person or persons, or corporation, shall be engaged in mining or milling, and in the prosecution of such business shall hoist or raise water from mines or natural channels, and the same shall flow away from the premises of such persons or corporations, to any natural channel or gulch, the same shall be considered beyond the control of the party so hoisting or raising the same, and may be taken and used by other parties the same as that of natural water-courses.

1836.—SEC. 7. After any such water shall have been so raised, and the same shall have flown into any such natural channel, gulch or draw, the party so hoisting or raising the same shall only be liable for injury caused thereby, in the same manner as riparian owners along natural water-courses.

EXPLANATORY.

1837.—SEC. 8. The provisions of this act shall not be construed to apply to incipient or undeveloped mines, but to those only which shall have been opened, and shall clearly derive a benefit from being drained.

EVIDENCE.

1838.—SEC. 9. In trial of cases arising under this act the court shall admit evidence of the normal stand or position of the water while at rest in an idle mine, also the observed prevalence of a common water-level or a standing water-line in the same or separate lodes; also the effect, if any, the elevating or depressing the water by natural or mechanical means in any given lode has upon elevating or depressing the water in the same, contiguous or separate lodes or mines; also the effect which draining or ceasing to drain any given lode or mine had upon the water in the same, or contiguous or separate lodes or mines, and all other evidence which tends to prove the common ingress or subterranean communication of water into the same lode or mine, or contiguous or separate lodes or mines.

Approved March 16, 1877.

TAXES.

Section 3, Article 10, of the Constitution of the State of Colorado, reads as follows:

"All taxes shall be uniform upon the same class of subjects within the territorial limits of the authority levying the tax, and shall be levied and collected under general laws, which shall prescribe such regulations as shall secure a just valuation for taxation of all property, real and personal: *Provided*, That mines and mining claims bearing gold, silver, and other precious metals, (except the net proceeds and surface improvements thereof,) shall be exempt from taxation for the period of ten years from the date of the adoption of this constitution, and thereafter may be taxed as provided by law. Ditches, canals, and flumes owned and used by individuals or corporations for irrigating lands owned by such individuals or corporations, or the individual members thereof, shall not be separately taxed, so long as they shall be owned and used exclusively for such purpose."

Mining Laws of New Mexico.

SECTION 1. That any person or persons desiring to locate a mining claim upon a vein or lode of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper or other valuable deposit, must distinctly mark the location on the ground so that its boundaries may be readily traced; and post in some conspicuous place on such location, a notice in writing stating thereon the name or names of the locator or locators, his or their intention to locate the mining claim, giving a description thereof, by reference to some natural object or permanent monument as will identify the claim; and also within three months after posting such notice, cause to be recorded a copy thereof in the office of the recorder of the county in which the notice is posted; and provided no other record of such notice shall be necessary.

SEC. 2. In order to carry out the intent of the preceding section, it is hereby made the duty of the probate judges of the several counties of this Territory, and they are hereby required to provide at the expense of their respective counties such book or books as may be necessary and suitable in which to enter the record hereinbefore provided for. The fees for recording such notices shall be ten cents for every one hundred words.

SEC. 3. That in estimating the worth of labor required to be performed upon any mining claim, to hold the same by the laws of the United States, in the regulation of mines, the value of a day's labor is hereby fixed at the sum of four dollars: *Provided, however,* That in the sense of this statute, eight hours of labor actually performed upon the mining claim shall constitute a day's labor.

SEC. 4. All locations heretofore made in good faith, to which there shall be no adverse claims, the certificate of which locations have been or may be filed for record and recorded in the recorder's office of the county where the location is made within six months after the passage of this act, are hereby confirmed and made valid. But where there may appear to be any such adverse claim, the said locations shall be held to be the property of the person having the superior title or claim, according to the laws in force at the time of the making of the said locations.

SEC. 5. An action of ejectment will lie for the recovery of the possession of a mining claim, as well also of any real estate, where the party suing has been wrongfully ousted from the possession thereof, and the possession wrongfully detained.

SEC. 6. That "an act concerning mining claims," approved January 18th, 1865, and an act amendatory thereof, approved January 5th, 1866; also, an act entitled an act to amend certain acts concerning mining claims in the Territory of New Mexico, approved January 1st, 1872; be and the same are hereby repealed: *Provided,* That no locations completed or commenced under said acts shall be invalidated or in any wise affected by such repeal.

SEC. 7. That this act shall take effect and be in full force from and after its passage.

Approved January 11, 1876.

Mining Laws of Georgia.

1. In all cases where any partnership, corporation or individual, may be actually engaged in the business of mining iron, copper, gold, coal, or any other useful metal or mineral, or in making coppers, sulphur, saltpetre, alum, or other articles of utility, the said partnership, corporation or individual shall have the right of way for either a railroad, turnpike or other common road of travel across the land of others, upon paying reasonable compensation for damages, etc. Upon disagreement the damages are settled by arbitration, with right of appeal to the Superior Court.

2. Mining companies may divert water courses for the purpose of following any of the foregoing operations. And the damages incident to the diversion are likewise to be arbitrated in same manner.

3. The owner of any mine shall have the right to enter upon any land intervening between the mine and the water-power upon which the same is dependant, and to cut thereon such ditch, canal, or tunnel, or to construct such flume, or other aqueduct, and to build such dam as may be necessary to control such water-power. The damages to be ascertained by three arbitrators to be appointed in the following manner: one by the applicant for the privilege, one by the owner of the land, and one by the Ordinary of the county. Appeals may be taken from the award by either party dissatisfied to the Superior Court of the county, and the question settled by a jury as in other cases. But no appeal prevents the work from proceeding, provided the amount of the award is first paid.

4. The owner of any mine shall have the right to enter upon any land, and to cut and open thereon such ditches, canals and tunnels, or to construct such flumes or other aqueducts as may be necessary to drain his mine, or to carry off and drain away the water and tailings of such mine or mining operations. The damages, if any to be assessed, by arbitrators as in other cases with like privilege of appeal.

Unlawful mining. If any person shall dig or take away from the land of another any gold, bullion, silver or other metallic substance, with intent to appropriate the same to his or her own use, without having previously obtained permission of the owner of such land so to do, he shall be guilty of misdemeanor, and on conviction shall be punished by a fine not to exceed \$1000, imprisonment not to exceed six months; to work on chain-gang on the public works, not to exceed twelve months. Any one or more of these punishments may be ordered in the discretion of the judge.

6. Punishment for injuring mining works. If any person or persons shall unlawfully, willfully and maliciously cut, break down, destroy, or in any manner hurt, damage, injure, or obstruct, or shall counsel and assist, or advise any person or persons in any manner to hurt, damage, injure, obstruct, break down, or destroy any ditch or ditches, canal, flume, dome, tunnel, made, constructed, erected, or used to control and convey water to any mine for mining purposes, or any of the appurtenances to such ditch or ditches, canal, flume, dome or tunnel, such person so offending shall be liable to be indicted for a misdemeanor, and on conviction, shall be fined or imprisoned, or both, at the discretion of the court,

TABULAR STATEMENT.

Showing Name and Location of Active Mining Companies—Number in Mine—Shares—Shares per Foot—Number—Amount and Date of Last Assessment—Total Assessments—Number, Amount and Date of Last Dividend—Total Dividends :

NAME OF MINE AND DISTRICT.	Feet.	Shares.	Shares Per Foot.	LAST ASSESSMENT.			Total Assessment.	LAST DIVIDEND.			Total Dividends.
				No.	Amount.	Levied.		No.	Amount.	Paid.	
ALBION, Eureka, Nevada.	6,000	100,000	16%	3	\$ 15	March 11, 1879	\$60,000	---	---	---	
ALPHA CON., Gold Hill, Nevada.	306	30,000	98	9	1.00	March 21, 1878	240,000	---	---	---	
ALTA, Gold Hill, Nevada.	600	108,000	180	14	1.00	Feb. 20, 1879	1,101,000	---	---	---	
AMAZON CON., Devil's Gate, Nevada.	1,500	60,000	40	5	10	Feb. 11, 1878	---	---	---	---	
ALPS, Ely, Nevada.	800	30,000	37½	14	1.00	Aug. 29, 1878	210,000	---	---	---	
ANDES, Virginia, Nevada.	1,000	100,000	100	11	25	Oct. 1, 1878	387,500	3	\$ 50	April 15, 1871	
ARGENTA, Tuscarora, Nevada	1,500	100,000	66½	4	30	Jan. 21, 1879	50,000	---	---	---	
ARIZONA, Unionville, Nevada	1,500	48,000	---	3	25	Feb. 15, 1877	108,000	---	---	---	
ARIZONA AND UTAH, Globe District, Arizona.	1,800	100,000	66½	1	02	Sept. 10, 1878	3,000	---	---	---	
ATLANTIC CON., Devil's Gate, Nevada.	1,800	100,000	55½	1	25	Oct. 31, 1877	25,000	---	---	---	
AURORA, TUNNEL, Bodie, California.	---	60,000	---	3	20	Feb. 24, 1879	33,000	---	---	---	
BALTIMORE CON., America Flat, Nevada	1,050	84,000	80	19	50	April 30, 1878	1,037,000	---	---	---	
BELMONT, Philadelphia District, Nevada	3,000	50,000	16½	20	30	April 4, 1879	540,000	---	---	---	
BEST AND BELCHER, Virginia, Nevada.	540	180,800	187	14	1.00	April 17, 1879	636,192	---	---	---	
BELCHER, Gold Hill, Nevada.	1,040	104,000	100	17	1.00	Feb. 7, 1879	1,524,400	38	1.00	April 10, 1876	
BELVIDERE, Bodie, California.	1,500	60,000	40	3	20	Feb. 24, 1879	33,000	---	---	---	
BLACK HAWK, Bodie, California.	1,500	50,000	33½	4	25	Dec. 11, 1878	87,500	---	---	---	
BENTON CON., Gold Hill, Nevada.	600	108,000	180	1	50	Dec. 4, 1878	54,000	---	---	---	
BODIE, Bodie, California.	750	50,000	66½	1	15	Jan. 29, 1879	25,000	8	1.00	Jan. 20, 1879	
BOOKER, Bodie, California.	1,500	100,000	66½	1	15	Dec. 3, 1878	15,000	---	---	---	
BULLION, Gold Hill, Nevada.	947	100,000	105½	53	1.00	Jan. 29, 1879	3,250,000	---	---	---	
BUCKEYE, Devil's Gate, Nevada.	3,000	48,000	16	19	50	Nov. 25, 1873	308,000	---	---	---	
BULWER, Bodie, California.	3,000	60,000	20	1	50	Dec. 12, 1877	30,000	---	---	---	
BECHTEL CON., Bodie, California.	---	100,000	---	2	25	April 19, 1879	35,000	---	---	---	
BLACK BEAR QUARTZ, Siskiyou County, California.	4,500	30,000	6	---	---	---	---	---	---	700,000	
CALIFORNIA, Virginia, Nevada.	600	540,000	---	---	---	---	---	---	---	30,140,000	
CALIFORNIA, Gold Hill, Nevada.	2,188	100,000	45	27	50	April 11, 1879	1,700,000	30	1.00	Jan. 10, 1879	
CHALLENGE CON., Gold Hill, Nevada.	90	50,000	555½	1	20	Nov. 22, 1878	10,000	---	---	---	
CHEROKEE FLAT, B. G., Butte County, California.	---	31,200	---	39	05	April 17, 1878	29,640	---	---	---	
CHOLLAR POTSHI, Virginia, Nevada.	1,400	28,000	20	15	5.00	Sept. 5, 1878	1,730,000	44	1.00	Feb. 10, 1872	
CONFIDENCE, Gold Hill, Nevada.	130	24,960	192	11	50	April 18, 1878	256,320	6	8.33½	May 1, 1865	

NAME OF MINE AND DISTRICT.		LAST ASSESSMENT.			LAST DIVIDEND.			Total Dividends.
Feet.	Shares.	Shares Per Foot.	LAST ASSESSMENT.		No. Amount.	LAST DIVIDEND.		Total Dividends.
			No. Amount.	Levied.		No. Amount.	Paid.	
468	590,000	1.0683%	8	\$ 20	Feb. 10, 1879	47	April 15, 1879	\$41,310,000
710	540,000	760%	15	2.00	June 11, 1873	50	Jan. 12, 1875	11,388,000
600	100,000	166%	36	1.00	Dec. 12, 1878			
1,500	100,000	66%	3	15	April 15, 1879			
1,500	100,000	66%	1	10	Jan. 10, 1879			
1,500	60,000	66%	1	10	Oct. 31, 1878			
1,850	30,000	16%		35	Feb. 13, 1879	34	Jan. 14, 1879	486,000
1,500	100,000	66%	2					
1,000	100,000	100	5					
2,000	50,000	50	5		Nov. 24, 1877			
2,000	108,000	54	1	50	Nov. 18, 1878	4		25,000
1,600	100,000	62%	10	25	April 2, 1878	2	Oct. 20, 1877	47,500
1,200	60,000	50	6	1.00	Nov. 12, 1878		July 1, 1863	56,000
1,500	100,000	66%	3	05	Feb. 6, 1879			
1,500	100,000	66%	9	10	March 11, 1879			
1,500	50,000	33%	3	50	March 20, 1879			
1,125	64,000	57	1	25	April 8, 1879			
1,500	100,000	66%	3	10	Feb. 26, 1876			
1,500	100,000	66%	2	05	April 25, 1878			
1,500	60,000		13	20	July 16, 1879			
1,500	100,000	66%	1	05	Sept. 7, 1878			
2,600	40,000	15%	13		July 27, 1878			
10,000	50,000	5	20		Nov. 16, 1878			
1,500	100,000	66%	3	25	Feb. 20, 1879			
	50,000		2	1.00	May 26, 1876			
1,680	20,000	12				42	April 21, 1879	3,750,000
400	100,000	250	13	1.00	Feb. 25, 1879	80	April 29, 1878	24,490,000
1,500	100,000	66%	3	10	April 30, 1878			
1,500	100,000	66%	2	1.00	Nov. 13, 1878			
1,500	100,000	66%	2	10	Sept. 23, 1878			
1,200	50,000	4%	8	50	Feb. 14, 1877			
1,100	100,000	11	1	05	Jan. 29, 1879			
	60,000		1	05	July 17, 1878			
420	30,000	71	9		Dec. 29, 1874			
1,500	100,000	66%	2	05	March 7, 1878			
2,100	50,000	24	4	25	Feb. 12, 1877			
621	108,000	173	35	1.00	March 11, 1879	36	Oct. 10, 1870	3,825,800
1,500	100,000	66%	3	25	Jan. 10, 1879			
1,822	90,000	50	22	25	Jan. 22, 1879			
1,500	100,000	66%	1	1.00	July 9, 1878			
1,500	100,000	66%	3	25	Jan. 15, 1879			
615	100,000	163	5	18.75	March 5, 1878			
1,200	100,000	83%	1	10	July 29, 1875			

NAME OF MINE AND DISTRICT.	Feet.	Shares.	Shares Per Foot.	LAST ASSESSMENT.			Total Assessment.	LAST DIVIDEND.			Total Dividends.
				No.	Amount.	Levied.		No. Amount.	Paid.		
										No.		Amount.	No.	Amount.
GLASGOW, Devil's Gate, Nevada.....	1,500	60,000	40	10	Feb. 11, 1878	45,000	---	---	---	---	
GRAND CENTRAL, Tuscarora, Nevada.....	30,000	1,000,000	33 1/4	03	Aug. 20, 1877	8,000	---	---	---	---	
GREAT EASTERN, Bristol, Nevada.....	1,500	120,000	80	05	May 8, 1878	6,000	---	---	---	---	
HALE & NORCROSS, Virginia, Nevada.....	4,000	112,000	28 1/2	1.00	March 12, 1879	3,016,000	30	5.00	April 10, 1871	1,598,000	
HANOVER CON., Fresno County, California.....	3,400	30,000	9	25	Jan. 30, 1879	9,000	---	---	---	---	
HOMESTAKE, Dakota.....	1,500	100,000	66 2/3	1.00	April 8, 1878	101,000	---	---	---	---	
HUSSEY CON., Cornucopia, Nevada.....	4,500	100,000	22 1/4	7	Jan. 20, 1879	200,000	---	---	---	---	
HAMBURG, Eureka, Nevada.....	1,400	35,000	25	50	Feb. 3, 1879	205,000	---	---	---	---	
HARTFORD, Gold Hill, Nevada.....	---	100,000	---	---	June 26, 1875	24,500	---	---	---	---	
HENRIETTA G., Butte County, California.....	---	100,000	---	---	June 7, 1878	30,000	---	---	---	---	
HORNET, Tuscarora, Nevada.....	1,500	100,000	66 2/3	3	Jan. 30, 1878	\$30,000	6	\$ 25	Nov. 20, 1878	\$150,000	
INDEPENDENCE, Tuscarora, Nevada.....	1,500	100,000	66 2/3	4	Feb. 19, 1878	75,000	---	---	---	---	
IDA LIVINGSTONE, Kelsey, California.....	1,500	60,000	40	15	Aug. 19, 1878	6,900	---	---	---	---	
INDIAN QUEEN, Oneota, Nevada.....	1,000	60,000	60	5	---	---	---	---	---	---	
INSURANCE, Virginia, Nevada.....	2,000	30,000	15	---	Sept. 1, 1875	105,000	---	---	---	---	
JACKSON, Eureka, Nevada.....	600	50,000	83 1/3	10	Feb. 21, 1878	177,500	---	---	---	---	
JUPITER, Bodie, California.....	1,500	64,000	42 2/3	2	Feb. 15, 1879	12,800	---	---	---	---	
JOE SCATES, Virginia, Nevada.....	540	100,000	109	3	Dec. 18, 1877	85,000	---	---	---	---	
JULIA CON., Virginia, Nevada.....	3,000	110,000	36 2/3	8	Jan. 21, 1879	880,000	---	---	---	---	
JUSTICE, Gold Hill, Nevada.....	2,100	105,000	50	27	Jan. 10, 1879	2,657,500	---	---	---	---	
JEFFERSON, Jeffers in, Nevada.....	---	50,000	---	4	April 13, 1877	95,250	2	50	May 15, 1875	50,000	
JENNIE A. AND BLACK ROCK, White Pine, Nevada.....	8,100	100,000	10 1/4	15	Nov. 17, 1877	15,000	---	---	---	---	
KENTUCK, Gold Hill, Nevada.....	95	30,000	315	13	Aug. 7, 1878	300,000	32	5.00	March 10, 1871	1,252,000	
KNICKERBOCKER, Virginia, Nevada.....	1,200	100,000	85	10	Sept. 27, 1877	511,000	---	---	---	---	
KOSSUTH, Devil's Gate, Nevada.....	2,700	108,000	40	25	Aug. 31, 1877	421,200	---	---	---	---	
K. K. CON., Eureka, Nevada.....	1,200	50,000	41 2/3	15	Jan. 3, 1879	300,000	---	---	---	---	
KELSEY, Kelsey, California.....	5,340	50,000	9 1/3	1.00	Sept. 10, 1877	23,600	---	---	---	---	
LADY BAVAN, Flowery, Nevada.....	2,000	100,000	50	1	Oct. 2, 1877	50,000	---	---	---	---	
LADY WASHINGTON, Gold Hill, Nevada (see Part II, pp. 211-12).....	1,200	60,000	50	11	Oct. 1, 1877	363,000	---	---	---	---	
LEVIATHAN, Gold Hill, Nevada.....	2,000	100,000	50	8	March 6, 1879	205,000	---	---	---	---	
LEEDS, Utah.....	3,000	60,000	20	---	March 10, 1879	215,000	7	15	Oct. 10, 1878	78,000	
LEOPARD, Cornucopia, Nevada.....	1,500	50,000	33 1/3	10	Aug. 10, 1879	5,000	---	---	---	---	
LENA, Gold Hill, Nevada.....	1,500	100,000	66 2/3	1	Nov. 10, 1876	5,000	---	---	---	---	
LEXINGTON, Gold Hill, Nevada.....	1,800	100,000	55 1/2	1	Jan. 27, 1879	6,000	---	---	---	---	
LOW RANGE, LeDoge, Virginia, Nevada.....	2,000	100,000	50	3	Aug. 5, 1878	142,500	---	---	---	---	
MEXICAN, Virginia, Nevada.....	600	1,100,800	168	5	May 15, 1878	21,700	---	---	---	---	
MINT, Virginia, Nevada.....	1,200	50,000	41 2/3	22	Aug. 8, 1878	142,500	---	---	---	---	
MONUMENTAL, Gold Hill, Nevada.....	1,500	90,000	60	3	Feb. 14, 1878	45,000	---	---	---	---	
MOUNT HOOD, Virginia, Nevada.....	571	60,000	175	2	Feb. 3, 1879	25,000	---	---	---	---	
MAYBELLE CON., Bodie, California.....	1,500	50,000	40	3	Jan. 21, 1879	15,000	---	---	---	---	
MONO, Bodie, California.....	750	60,000	66 2/3	2	March 27, 1879	75,000	---	---	---	---	
MCCLENNON, Bodie, California.....	1,000	60,000	60	2	D.C. 24, 1878	60,000	---	---	---	---	
MAMMOTH, Lake, California.....	1,500	100,000	66 2/3	2	Feb. 12, 1879	50,000	---	---	---	---	
MONITOR BELMONT, Philadelphia, Nevada.....	6,400	50,000	8	7	April 23, 1878	102,500	---	---	---	---	
MANHATTAN, Reese River, Nevada.....	---	50,000	---	1.00	March 3, 1879	100,000	3	1.00	Dec. 2, 1873	75,000	
							8	1.00	Feb. 1, 1877	400,000	

NAME OF MINE AND DISTRICT.	Feet.	Shares.	Shares Per Foot.	LAST ASSESSMENT.			LAST DIVIDEND.			Total Dividends.
				No.	Amount.	Levied.	No.	Amount.	Paid.	
MODOC CON., Imyo County, California.	4,500	100,000	22 1/2	8	\$ 50	Feb. 13, 1879	1	50	Jan. 5, 1877	\$50,000
MARTIN WHITE, Wards, Nevada	22,000	100,000	4	4	1.50	Dec. 14, 1878	17	1.00	June 16, 1873	1,260,000
MEADOW VALLEY, Pioche, Nevada	1,200	60,000	50	14	75	May 6, 1877				
MARYLAND, Gold Hill, Nevada	900	54,000	60	1	10	May 9, 1877				
MCCRACKIN CON., Owen, Arizona	4,500	100,000	22 1/2	1	50	July 10, 1878				
MINNETTA BELLE, Inyo County, California	1,500	100,000	66 2/3	2	50	April 3, 1878				
MUNARCH, G., Dog Town, California	---	10,000	---	1	75	Dec. 1, 1878				
MURCHIE, Nevada, Nevada City, California	1,500	100,000	66 2/3	2	20	July 2, 1878				
NORTH SIERRA NEVADA, Virginia, Nevada	1,500	100,000	100	1	50	April 2, 1879				
NORTH BONANZA, Flourney, Nevada	3,000	49,000	13 1/2	3	10	Jan. 7, 1878				
NEVADA, Gold Hill, Nevada	1,000	1,000,000	100	10	40	Feb. 18, 1879				
NEW YORK, Gold Hill, Nevada	1,500	1,000,000	66 2/3	7	30	Sept. 27, 1879				
NORTA CARSON, Eagle Valley, Nevada	1,500	1,000,000	66 2/3	10	1.00	March 21, 1879				
NORTH CON., Virginia, Virginia, Nevada	1,500	60,000	40	2	20	March 27, 1879				
NOONDAY, Bodie, California	1,500	60,000	40	1	20	March 27, 1879				
NORTH NOONDAY, Bodie, California	7,500	100,000	13 1/2	9	20	Oct. 18, 1878				
NEW COSO, Inyo County, Nevada	1,600	50,000	31 1/5	3	10	Jan. 23, 1879				
NORTHERN BELLE, Esmeraldo County, Nevada	1,500	60,000	40	3	50	March 13, 1878				
NORTHERN LIGHT, Prtsburgh, California	800	35,000	40	14	20	Feb. 4, 1879				
NEWARK, Ely's, Nevada	1,500	100,000	66 2/3	5	20	Sept. 4, 1878				
NAVAJO, Tusca-ora, Nevada	---	50,000	---	3	05	June 22, 1877				
NEVADA, G., Nevada City, California	1,600	100,000	62	1	05	Sept. 30, 1874				
NEW ENGLAND, Nevada County, California	13,000	50,000	38	2	10	Aug. 17, 1878				
NORTH BELMONT, Philadelphia, Nevada	2,960	100,000	37 1/5	3	10	Feb. 6, 1877				
NORTHERN KING, Pioneer, Arizona	1,700	40,000	23 1/2	4	25	Oct. 22, 1878				
OCCIDENTAL, Silver Star, Nevada	1,800	100,000	55 3/5	10	7	Sept. 21, 1878				
ORIGINAL KEYSTONE, Virginia, Nevada	3,000	30,000	14 2/3	7	20	Nov. 5, 1878				
ORIGINAL GOLD HILL, Gold Hill, Nevada	675	100,800	14 2/3	34	1.00	Jan. 28, 1879				
OVERMAN, Gold Hill, Nevada	1,200	38,400	32	43	3.00	Feb. 18, 1879				
ORIENTAL CON., Sierra County, California	1,600	50,000	31 1/2	2	50	June 21, 1878				
OAKLAND, Grass Valley, California	1,500	30,000	22	2	05	Jan. 7, 1878				
OREGON CON., Gold Hill, Nevada	---	100,000	---	1	25	March 24, 1879				
PHIL. SHERIDAN, Virginia, Nevada	1,200	100,020	85	0	25	July 18, 1878				
PROSPECT, Gold Hill, Nevada	1,000	100,000	100	6	40	March 7, 1879				
ROSEB, Virginia, Nevada	1,500	100,000	66 2/3	1	05	April 3, 1879				
PANTHER, Cornucopia, Nevada	1,500	50,000	33 1/2	11	10	April 14, 1879				
PANEMIX, Eureka, Nevada	600	90,000	83 1/2	19	25	Feb. 26, 1876				
PACIFIC, Gold Hill	1,200	100,000	83 1/2	1	20	March 1, 1876				
PACIFIC, Owyhee County, Idaho	1,600	50,000	31 1/2	7	---	May 20, 1878				
PAYTONA, Virginia, Nevada	1,000	100,000	100	14	---	April 11, 1878				
PITTSBURGH, Nevada County, California	---	100,000	---	2	06	July 2, 1878				
PLEIADES, Ward, Nevada	---	100,000	---	1	05	Sept. 30, 1874				
PLIOCENE, Sierra County, California	---	60,000	---	8	---					
QUINTERO, Philadelphia, Nevada	2,000	50,000	25	3	05					

NAME OF MINE AND DISTRICT.	feet.	Shares.	Shares Per Foot.	LAST ASSESSMENT.			Total Assessment.	LAST DIVIDEND.			Total Dividends.
				No.	Amount.	Levied.		No.	Amount.	Paid.	
QUEEN BEE, Bodie, California.	1,500	60,000	40	1	Dec. 2, 1878	\$15,000	---	---	---	---	
ROCK ISLAND, Gold Hill, Nevada.	1,200	100,000	83 1/2	13	Jan. 9, 1878	328,000	---	---	---	---	
RICHER, Bodie, California.	1,500	50,000	33 1/2	2	March 8, 1879	37,500	---	---	---	---	
RED CLOUD, Bodie, California.	1,500	50,000	33 1/2	5	April 7, 1879	630,000	---	---	---	---	
RAYMOND AND ELY, Pioche, Nevada.	5,000	30,000	6	9	Oct. 21, 1878	105,000	---	---	---	---	
RYE PATCH CON., Rye Patch, Nevada.	1,600	30,000	19	7	Dec. 17, 1878	165,000	---	---	Sept. 6, 1873	\$3,075,000	
REAL DEL MONTE, Esmeralda, Nevada.	1,000	50,000	50	6	March 27, 1879	15,000	---	---	Dec. 31, 1877	67,500	
REX MONTIS, Inyo County, California.	1,800	330,200	---	10	---	58,736	---	---	---	---	
ROUGH AND READY, Gold Hill, Nevada.	800	112,000	03	1	---	10,000	---	---	---	---	
SAVAGE, Virginia, Nevada.	1,070	100,000	140	37	Feb. 7, 1879	41,810,000	---	---	June 11, 1866	4,406,000	
SCORPION, Virginia, Nevada.	1,324	100,000	75 1/2	4	Dec. 3, 1878	26,000	---	---	---	---	
SEGRAGATED BELCHER, Gold Hill, Nevada.	160	6,400	40	15	April 16, 1876	244,800	---	---	---	---	
SENATOR, Virginia, Nevada.	2,000	108,000	54 1/2	17	Dec. 16, 1878	173,600	---	---	---	---	
SILVER HILL, Gold Hill, Nevada.	4,200	108,000	25 1/2	6	April 7, 1879	432,000	---	---	---	---	
SIERRA NEVADA, Virginia, Nevada.	4,400	1,000,000	30 1/2	57	April 16, 1879	2,600,000	---	---	Jan. 16, 1871	102,500	
SUTRO NEVADA	3,300	24,000	7	4	Sept. 26, 1878	25,686	---	---	Oct. 16, 1872	22,800	
SUCCESSOR, Gold Hill, Nevada.	2,400	88,400	18	22	Feb. 21, 1879	712,500	---	---	---	---	
SOUTH UTAH, Virginia, Nevada.	3,800	1,000,000	100	06	Nov. 18, 1878	5,000	---	---	---	---	
STANDARD, Bodie, California.	1,000	50,000	50	1	Nov. 27, 1878	25,000	---	---	May 12, 1871	1,000,000	
SUMMIT, Bodie, California.	1,500	100,000	66 2/3	2	Feb. 27, 1879	20,000	---	---	---	---	
SOUTH BULWER, Bodie, California.	1,500	100,000	66 2/3	5	Feb. 25, 1879	35,000	---	---	---	---	
SOUTH STANFORD, Bodie, California.	3,000	100,000	33 1/2	5	Dec. 17, 1877	100,000	---	---	---	---	
SPAR, Nevada.	1,500	60,000	40	5	July 31, 1879	114,000	---	---	---	---	
SOUTH ARGENTONA, Spanish Belt, Nevada.	1,500	100,000	66 2/3	4	Feb. 1, 1879	65,000	---	---	Oct. 22, 1878	450,000	
SILVER KING, Pioneer, Arizona.	1,500	100,000	66 2/3	4	Feb. 1, 1877	15,000	---	---	---	---	
SILVER PRIZE, Tuscarora, Nevada.	1,500	100,000	180	1	Feb. 29, 1876	111,600	---	---	---	---	
SABINE, Virginia, Nevada.	630	30,000	300	2	---	50,604	---	---	---	---	
SEGRAGATED CALEDONIA, Gold Hill, Nevada.	100	100,000	---	2	May 16, 1878	73,576	---	---	---	---	
SIEBA, Humboldt, Nevada.	---	100,000	---	2	Sept. 27, 1878	17,500	---	---	---	---	
SIGNAL, Mohave, Arizona.	---	70,000	---	1	Jan. 10, 1878	40,000	---	---	---	---	
SGOURNEV, Bodie, California.	3,000	100,000	33 1/2	3	Aug. 6, 1875	60,000	---	---	---	---	
SOUTH END, Devil's Gate, Nevada.	1,500	30,000	20	3	Sept. 26, 1878	16,200	---	---	---	---	
SOUTH OVERMAN, Gold Hill, Nevada.	1,200	108,000	90	1	Dec. 1, 1877	10,000	---	---	---	---	
ST. LOUIS, Gold Hill, Nevada.	1,500	100,000	16 2/3	1	March 28, 1876	10,000	---	---	---	---	
STRETOE CON., Ward, Nevada.	10,500	100,000	0 1/2	1	April 9, 1879	205,000	---	---	---	---	
STOCK BROKER, Shoshone, Nevada.	6,000	100,000	66 2/3	10	Feb. 26, 1878	15,000	---	---	---	---	
TROJAN, Gold Hill, Nevada.	1,500	100,000	66 2/3	1	April 3, 1879	100,000	---	---	---	---	
TWIN PEAKS, Gold Hill, Nevada.	1,500	100,000	66 2/3	5	July 15, 1878	120,000	---	---	---	---	
TIOGA CON., Bodie, California.	1,500	100,000	66 2/3	3	March 27, 1879	15,000	---	---	---	---	
TIP TOP, Black Cañon, Arizona.	12,000	100,000	8 1/3	3	July 16, 1878	30,000	---	---	---	---	
TUSCARORA, Tuscarora, Nevada.	603	100,000	166	1	Nov. 12, 1877	15,000	---	---	---	---	
TIGER, Bradshaw, Arizona.	1,500	100,000	40	1	Jan. 23, 1878	6,000	---	---	---	---	
TOLO, Virginia, Nevada.	600	100,000	166 1/2	12	April 2, 1879	460,000	---	---	---	---	
TOQUERVILLE, Harrisburg, Utah.	---	---	---	---	---	---	---	---	---	---	
UNION CON., Virginia, Nevada.	600	100,000	166 1/2	12	---	---	---	---	---	---	

NAME OF MINE AND DISTRICT.	Feet.	Shares.	Shares Per Foot.	LAST ASSESSMENT.			Total Assessment.	LAST DIVIDEND.			Total Dividends.
				No.	Amount.	Levied.		No.	Amount.	Paid.	
UNION FLAG, Gold Hill, Nevada.....	1,500	100,000	66⅔	2	\$ 03	March 11, 1879	88,000	---	---	---	
UTAH, Virginia, Nevada.....	1,000	20,000	20	25	2.50	April 17, 1879	830,000	---	---	---	
UNIVERSITY, Bodie, California.....	1,500	100,000	66⅔	1	10	March 1, 1879	10,000	---	---	---	
UNION CON., Inyo Connty, California.....	1,300	100,000	---	1	1.25	July 1, 1878	125,000	---	---	---	
VERMONT CON., Virginia, Nevada.....	1,300	110,000	84⅔	2	15	Dec. 7, 1878	\$41,500	---	---	---	
VICTOR, Columbus, Nevada.....	---	50,000	---	1	20	March 29, 1877	10,000	---	---	---	
VANCOUVER, Virginia, Nevada.....	---	100,000	---	1	10	Aug. 8, 1877	10,000	---	---	---	
WARD, Virginia, Nevada.....	571	110,000	170	1	30	Jan. 11, 1879	99,000	---	---	---	
WELLS, FARGO, Virginia, Nevada.....	1,500	108,000	73⅔	3	50	Sept. 11, 1878	180,000	---	---	---	
WOOVILL, Gold Hill, Nevada.....	1,300	120,000	67	11	10.00	Jan. 3, 1878	630,000	---	---	---	
WILLIAM PENN., Gold Hill, Nevada.....	2,500	100,000	40	3	---	---	---	---	---	---	
YELLOW JACKET, Gold Hill, Nevada.....	957	120,000	125⅔	32	10.00	April 15, 1879	4,038,000	25	\$2.50	Aug. 10, 1871	
YOUNG AMERICA, Tuscarora, Nevada.....	1,000	60,000	60	10	2	June 27, 1878	94,150	---	---	---	

NOTE.—Under the rules of the stock boards of San Francisco, all assessments are delinquent thirty full days from date when levied, without regard to the time when such assessments may be declared delinquents in the office of the company.

NOTE.—The amount collected for assessments on low-priced mining shares, falls far short of the amount (apparently) levied. It is frequently the case that after one or two assessments and no important developments, holders surrender their stock to the company, so that while the assessment would be upon 100,000 shares, perhaps 90,000 of these shares were owned by the company, and the collection would be only upon the floating 10,000 shares. This explanation is made in justice to those companies where the work performed does not seem to correspond with amount of assessments levied.

ADLAIDE CONSOLIDATED SILVER MINING AND SMELTING CO.

LEADVILLE, COLORADO.

Office of the Company, No. 90 Broadway. Officers of the Company, Geo. G. Sampson, President; Geo. G. Nevers, Vice-President and Treasurer; Wm. H. Barnard, Secretary; Geo. G. Sampson, Geo. G. Nevers, Danl T. Worden, Wm. Adams, Jr., Jos. H. Leverich, Hon. John P. Jones, Woodbury Blair, Dr. F. M. Gunnell, Capital, \$2,500,000, divided into 100,000 shares of the par value of \$25 each.

The Company was organized in May, 1878, and took possession on the following Fourth of July. Its property consists of two claims—the "Adlaide," 300 by 1500 feet, and the "Terrible," 300 by 1500 feet, making 300 by 3000 feet of surface ground. The end line of the Adlaide Company's ground very nearly joins the end line of the celebrated Iron mine owned by Stevens and Leiter, and it is believed by the management, based upon engineers' reports and by development and careful investigation, that the same class of ore exists in the Adlaide that has been found in such abundance and richness in the Iron mine. The mine has produced about 5000 tons of ore, and can, from present openings, turn out from 25 to 50 tons per day. The ore is found in enormous quantities, and being rich in lead, is sought after by smelters to mix with dryer ores. The policy of the Company, is to take out only the ore necessary to develop the property and to pay running expenses, and to wait for the completion of the railroad and lower rates of transportation before working the mine to its full capacity.

Since the property came into possession of the present Company, they have erected the following works and buildings: Smelter building boarding house, three shaft houses, three ore houses, two fuel sheds, blacksmith shop, assay office, laboratory, stable, and ten miners' cabins, at a total cost of \$33,000. The furnace has a capacity of 25 tons per day.

The affairs of the Company are managed by a Board of eight directors, elected annually by the stockholders. The meetings of directors are held, and all financial business conducted, at the New York office, No. 90 Broadway, where maps, reports, &c., may be seen, and all information in relation to the mine and its workings obtained.

ALPINE SILVER MINING COMPANY, OF COLORADO.

Organized under the Laws of the State of New York. Office of the Company, No. 61 Broadway, New York. D. J. Splane, President; J. L. Thompson, Secretary. Capital Stock, \$2,000,000. 200,000 Shares of par value \$10 each. Forever Unassessable.

The property consists of twelve mines, three of which are well opened up and producing ore as saying from \$60 to \$230 per ton.

The principal owners in these mines are the locators—Messrs. Splane and Gilbertson—who are superintending the work, and are men of large experience in mining.

AMERICAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SUNSHINE, BOULDER COUNTY, CALIFORNIA.

Office, 31 Broad Street, New York. Charles L. Wright, President; C. L. Wright, Wm. L. Campbell, J. Fenton Seymour, W. A. Wright, C. Burnham, Directors. Capital Stock, \$100,000, in shares of \$10 each. Organized in New York.

ATLANTIC MINING COMPANY.

HOUGHTON COUNTY, MICHIGAN.

Office, 76 Wall Street, New York. J. E. Gay, President; John Stanton, Jr., Secretary. Directors, J. E. Gay, John J. Crane, Chas. J. Starr, A. J. Hatch, J. Stanton, Jr., Saml. S. Smith. No. of feet, 4,500. No. of shares, 40,000. No. of last assessment, 5; total assessment, \$280,000. No. of last dividend, 1; amount per share, 50 cents; total dividends, \$20,000. Annual meeting, second Tuesday in March. Listed on N. Y. Mining Stock Exchange.

ARIZONA-MEXICAN MINE.

GLOBE DISTRICT, ARIZONA.

Capital Stock, \$10,000,000. 100,000 Shares at par value of \$100 each.

This mine is situated in the Globe Mining District, Maricopa County, Arizona, at an altitude of 3850 feet above the level of the sea; and is reached by wagon road 75 miles from Florence. It is 275 miles from Yuma, and 85 miles from the Southern Pacific Railroad at Maricopa Wells.

The location was made in October, 1876, and is 1500 feet along the lode, by 600 feet in width.

The country rock is syenite; the vein is 20 feet wide on the surface and dips west at an angle of 45 degrees, and its course is northeast and southwest.

The character of the ore is a friable quartz containing carbonates of copper and lead, yielding silver, also chlorides and sulphurets of silver.

There are three incline shafts sunk in the vein and one vertical shaft 106 feet in depth; these with the various drifts and cross cuts made in developing the mine aggregate about 700 feet of openings and the only ores ever worked from the mine were those taken out in making these openings.

The Mexicans who formerly owned and operated the mine worked some ore in their rude way and took out considerable bullion. The present owners have worked three lots of ore from different points in the mine, at the Miami Mill, for the purpose of ascertaining, by practical milling tests, the value of the ore body now developed, and obtained the following results, viz.: \$51.00, \$216.00, and \$114.00 per ton; this was from ores as they came from the mine without selecting. Assays vary from \$40.00 to \$4000.00 per ton, but average about \$150.00.

There are 450 tons of ore on the dump, from a portion of which the Mexicans selected the richest. This dump will yield from \$25,000 to \$30,000, and there is developed above the lowest workings in the

mine, over 4000 tons of ore, the value of which is represented by the average yield of the three lots worked at the Miami Mill, viz.: \$127.00 per ton.

We thus see that there is upwards of \$300,000 net in sight in the mine as it stands to-day and no evidence of deterioration in any of its workings.

The mine being so thoroughly opened it requires but the addition of a mill to put it immediately on a dividend-paying basis.

The mine is now in a condition to commence stoping down ore from four different points, and will yield 20 tons per day.

There is sufficient ore now opened up to justify the purchase or erection of a mill with a capacity of 20 tons daily, and the probable monthly yield of such a mill will be about as follows, viz.: 600 tons milled, yielding \$127.00, per ton, \$76,200; 600 tons mined, at \$5 per ton, \$3000; 600 tons hauling, at \$3 per ton, \$1800; 600 tons milling, at \$15 per ton, \$9000; Employees, \$1000; Incidental expenses, say 50 cents per ton, \$300; Expressage on bullion, \$1524; Total, \$16,624; Monthly profit, \$59,576. The foregoing calculation is based upon a yield of 20 tons per day, but with another level opened that yield can be doubled.

AURORA GOLD MINING COMPANY OF NEW YORK.

BLACK HILLS, LAWRENCE COUNTY, DAKOTA.

Offices of the Company, 58 Broadway, New York; Brown & Thum, Bankers, Deadwood, Dakota. Officers of the Company, Thomas C. Platt, President; William B. Leonard, Vice-President; George R. Howell, Secretary and Treasurer; Elihu Root, Counsel; Frank S. Bryant, Superintendent; T. C. Platt, M. C. Thum, F. S. Bryant, C. P. Thayer, W. B. Leonard, G. R. Howell, Elihu Root, Geo. E. Spencer, C. H. Ludington, Trustees. Capital Stock, \$500,000, divided into 50,000 Shares of the par value of \$10. Paid up and Unassessable.

The property of the Aurora Gold Mining Company is situated in White Wood Mining District, Lawrence county, Dakota Territory, and consists of the following mines: The "Aurora," "Gold Finch," "High Extension," "Monitor," and "Hopeful." The lodes are well developed, and their value tested by actual workings; and the consolidated property has been pronounced by engineers, experts and practical miners, one of the best in the Black Hills. The mines are within 2½ miles of Deadwood City, the commercial centre of the Territory.

The "Aurora" is separated from the other property of the Company a distance of about one-half a mile. Its dimensions are 300 by 1500 feet. The other four lodes—the "Gold Finch," 295 by 1366 feet; the "Monitor," 256 by 1366 feet; the "High Extension," 300 by 1366 feet; and the "Hopeful," recently purchased—are in a compact body, and are within a short distance of the most famous mines of the Hills, such as the "Homestake," "Golden Terra," "Giant and Old Abe," "Caledonia," "Deadwood," &c. The active operations of the Company are now confined to this portion of its property. The "Aurora" has a tunnel of 242 feet in length, to the ore chamber near the west line. This chamber has been worked for the last four months, and has yielded 1974 tons of ore, all of which has been milled, producing \$19,893.50 in bullion, or an average of \$10 per ton. The ore-body of this claim lies nearly horizontal upon a bedrock of slate, similar to the ancient river beds of California—the ore increasing in thickness and value toward the center of the channel. The main working tunnel of the "Gold Finch" runs horizontally in an easterly direction through the west rim of the channel a distance of 230 feet, at which point it penetrates the west side of the large central body of ore, and passes into it, northerly, 59½ feet, easterly 28 feet, southerly 50 feet, and westerly back over the tunnel. An incline drift from the surface, following the surface of the vein or bedrock, passes through 60 feet of ore before connecting with the tunnel. At the point of connection a large chamber has been mined and upwards of 2000 tons of ore milled. A vast amount of ore has been exposed in this lode. On the opposite side or east slope of the ridge, the "Monitor" incline prospects the ore-body from that side. Following down the surface of the rim 150 feet, it strikes the east side of the ore-body, which is six feet in depth at this point. The "High Extension" has been developed by a shaft 40 feet deep, at the bottom of which there is an incline tunnel 40 feet in length, the last 30 feet running through good ore.

From carefully prepared reports of engineers and experts, including the Superintendent's statement under date of March 13, 1879, there is now in sight ready for extraction 100,000 tons of ore that will mill an average of \$10 per ton. The present cost of hoisting, transportation, milling and all incidental expenses is \$5.50 per ton; leaving \$450,000 profits in sight. When the Company's mill is completed, the cost of reducing their ore will be but \$2.85 per ton, thus adding largely to the Company's profits, and ensuring handsome monthly dividends.

ATLANTA CONSOLIDATED SILVER MINING COMPANY.

VIRGINIA CITY, NEVADA.

Office, 60 Broadway, New York. D. O. Wotherspoon, President; T. A. Massett, Secretary; D. O. Wotherspoon, James Parker, A. L. Thompson, Eden Sprout, Wm. Euclid Young, T. A. Massett, Geo. Tassignola, Directors. Organized in New York.

BALDY SOUR MINING COMPANY, OF TREASURE HILL, NEVADA.

WHITE PINE COUNTY, NEVADA.

Office, 43 Exchange Place, New York. Officers: Eugene N. Robinson, President; William H. Drew, Vice President; Platt K. Dickinson, Secretary and Treasurer; S. F. Paul, Treasure City, Nevada, Superintendent; Directors: Platt K. Dickinson, William H. Drew, Harvey Kennedy, Eugene N. Robinson, Oliver S. Dawson, Charles E. Quincey, of New York and James A. Robinson, of Litchfield, Conn. Capital Stock, \$1,000,000. 100,000 Shares, \$10 each. Stock, None-Assessable.

To the President and Board of Directors of the Baldy Sour Mining Company, of Treasure Hill, Nevada.

GENTLEMEN:—Herewith I submit the following report of work done and developments made upon the property of the Company.

The mine is situated in a very promising position near the summit of Treasure Hill, about nine thousand feet above sea level, and extends down the western slope of the mountain fifteen hundred feet.

The property consists of 1,500 feet by 600, embracing 20 and 66-100 acres, and is covered by a United States Patent.

The property is bounded on the south by the Nonpareil Mine, on the east by the Sweetwater, and on the southwest by the Moscow, all of which show good ore and have been paying mines.

The developments upon the Sweetwater in particular are at the present moment of the most promising nature.

There are two shafts upon the Baldy Sour, with several small excavations, such as open cuts along the outcrop of the veins. The Dawson Shaft is down 100 feet, and follows the vein which runs northeast and southwest, with dip of about 72 degrees to the south. This vein was about 20 inches in width at the surface, and is about 36 inches wide at the 100 feet level. The walls are well-defined, and the ledge matter is exceedingly favorable for ore, though the assays so far show a low grade. From the bottom of this shaft two drifts are being run, one north, the other south. The north drift is in 26 feet at this time, and we passed through about 20 feet of very hard ground, then run into stratified lime, which is favorable for good ore. In fact we have found small seams of quartz and ore at several points along the drift, but think we will have to drive the drift about 100 feet before we strike the main ledge which crops out at the surface about 130 feet north of the Dawson Shaft. The south drift is in 20 feet. The ground in this drift does not show any very favorable indications of ore, and work has been stopped in it for the present. We are now driving the north drift with two shifts of men, and are now running night and day. Shaft No. 2, or Combination Shaft, is on the above ledge, about 150 feet east of the Dawson Shaft, and has yielded some very fine ore. I have taken samples of ore from the outcrop at this shaft that assayed over \$600 per ton. The shaft is about 30 feet deep, and has passed through ore the whole distance. I have made numerous assays of this ore from \$40 to \$50 per ton, and I would recommend that the Company have some work done upon this shaft—say sink 70 feet more and run drifts through the vein. By doing so, I think you would develop a good paying property. There is also an outcrop of a ledge on the west end of the property that shows some good looking ore. I think this is a north and south vein, and on the same belt as the Stafford and Burning Moscow, and being between the above mines, I should recommend some work being done upon this vein—say sink a shaft 50 feet, to determine the width of the vein, quality of the ore, &c.

In conclusion, would say that your property is regarded as a very valuable one by competent mining men, and it is my opinion that all that is necessary to develop it into a largely remunerative mine is a fair amount of work and money judiciously expended.

Respectfully,

S. F. PAUL, *Supt.*

TREASURE CITY, April 8th, 1879.

Letter of Professor J. E. CLAYTON.

EUGENE N. ROBINSON, Esq., New York City.

My Dear Sir: In response to your inquiry about my knowledge of the "SWEETWATER MINE," and the "BALDY SOUR MINE," both on Treasure Hill, White Pine County, Nevada I beg leave to state that I know the position and general appearance of both mines well. I lived on Treasure Hill about two years (1869 and 1870), and during that time made a careful study of every portion of the district.

From my recollections of the ground covered by the above-named mining claims, I can say that no portion of Treasure Hill presents more favorable surface appearances for rich ore deposits.

The northeast half of the "Baldy Sour" and the southeast half of the "Sweetwater" claims are especially favorable grounds. I have seen rich ore in the outcrops, and in shallow pits in the above-mentioned portions of both these claims, and have no doubt of the existence of good ore bodies in both of them, that may be brought to light by proper explorations.

Good judgment, and a thorough knowledge of the peculiarities of the ore deposits of the district, will be required by any one having charge of the development of these mines. In this respect you have been fortunate in securing the services of Mr. Paul to superintend the explorations.

I knew Mr. Paul intimately during the time of my residence in the district, and he always impressed me favorably as a man of good judgment, close observation and integrity, and particularly well posted in the character of the Treasure Hill mines.

In answer to your inquiries about Captain Joseph Potts, I take pleasure in saying that he is one of the best underground mining Captains and Superintendents in the West, and knows as much about the mines of Treasure Hill as any man in Nevada. As a Consulting Engineer, to aid in directing your underground explorations, his services would be more valuable, in my estimation, than that of any mining engineer less familiar with the Treasure Hill mines.

Very respectfully yours,

J. E. CLAYTON.

New York City, April 11th, 1879.

Extract from letter of JOSEPH GRANDEMEYER to E. N. ROBINSON, March 7th, 1879.

"I went over part of your ground with Messrs. Potts, Kendall and Paul. Mr. Potts is an old, thoroughly practical and very successful miner. He has had some six years experience on Treasure Hill. It was Joseph Potts who made the Richmond Company at Eureka a success, and he has had large experience elsewhere. He expressed his opinion of your ground in the most favorable terms to Mr. Kendall and others. He says there are millions in your southwest ground, and he points out that great depression in Treasure Hill as the proof, if you remember, we talked over and over. Mr. Potts promised me he would write you his opinion of your property. Also Capt. Frank Drake, Superintendent of the Eberhardt and Aurora, thinks exceedingly well of the property, and said he would write you in person about it. As for my opinion, there is not and never was a shadow of doubt in my mind but that it will prove huge. It is only a question of work required and time to do it in."

Extracts from Report, dated January 5th, 1877, of GEORGE ATWOOD, of London, upon a portion of the property now embraced by the BALDY SOUR MINE.

"The mine being situated so near as valuable a mine as the Hidden Treasure (the latter mine having produced a very large quantity of silver, several millions), and is near the same a little to the northwest and a little

down the mountain, the slope of which is in westerly direction. The course of the lode is a little north of east and south of west, and by following the same you are very likely to strike the main bonanza of the Hidden Treasure.

"From the assays you have obtained, and also from the favorable appearance, not only of the 'vein stone,' but from the appearance of the 'walls,' I have but little doubt that your efforts will be amply rewarded by finding a valuable property."

In a letter written by Captain JOSEPH POTTS, under date March 26th, 1879, he says: "While I was in the employ of the Eberhardt and Aurora Company as Mining Superintendent, I extracted from those mines \$4,700,000.00. This was from the 14th of October, 1870, until May, 1874. But prior to the former and since the latter date, a large amount of money has been taken out of those mines.

"In conclusion, I would state that it is my belief that, under the management of men of proper intelligence, Treasure Hill could be made as large a bullion-producing district as any in the State of Nevada."

The district presents many advantages, among which are cheap fuel. There is no water to contend with, and many large chambers have been opened and the ore extracted without the use of a single brace or post. Generally, in mining, the main items of expense are pumping and timbering; and we have to do neither.

Many prominent parties are largely interested in this mine, among whom is Wm. M. Lent of California.

Any further information will be given at the office of the Company, No. 43 Exchange Place, New York.

EUGENE N. ROBINSON,
President.

BERTHA AND EDITH GOLD MINING COMPANY,

GOOCHLAND COUNTY, VIRGINIA.

Office of the Company, 52 Broadway, New York. Officers, E. B. Grant, President; E. H. Denslow, Vice President; J. Mildeberger Smith, Secretary and Treasurer; E. B. Grant, E. H. Denslow, J. M. Smith, Henry Aitken, S. S. L. Fogg, Directors; H. C. Foljambe, General Superintendent. Capital, \$500,000. 500,000 Shares at \$1 per Share.

The property of the company is located in Goochland County, Virginia, 55 miles west of Richmond, and four miles from the town of Columbia. It consists of about 700 acres of land, and for many years has been worked successfully as a placer. Developments made in the fall of 1878 proved the existence of rich veins of gold bearing quartz. These discoveries led to a contract, made in March, 1879, with Fraser & Chalmers, of Chicago, for the erection of a mill with power to drive 40 stamps. Of these, 20 stamps are in process of erection, and will be in operation by June 15, 1879. The principal vein which it is designed to work, averages 12 feet in width, and assays \$35 per ton. The ore is free milling, and can be wrought at an expense for mining and milling of \$4 per ton. In addition to this vein many others have been discovered, the ore from which assays from \$40 to more than \$100 per ton. Labor at the works is 75 cents per day, and fuel from 75 cents to \$1 per cord.

BODIE CHIEF MINING COMPANY.

BODIE, MONO COUNTY, CAL.

Offices of the Company, Rooms 6 and 7, Stock Exchange Building, San Francisco; and Room 29, No. 34 New Street, New York. A. Forbes, President; D. F. Verdenal, Secretary; Gen. Geo. F. Vernon, Superintendent; A. Forbes, R. Sherwood, H. A. Charles, E. B. Clement, S. F. Gashwiler, Trustees. Capital Stock, \$10,000,000, divided into 100,000 Shares of the par value of \$100. No. of feet, 1500.

The Bodie Chief Mine is situated in Bodie Mining District, Mono County, California, on the same mineral belt or lode, and in close proximity to the famous Standard, Bulwer, Bodie, Bechtel, and other mines. The shaft is near the centre of the claim, and about 100 feet deep, having followed the ledge from the surface down. The vein, like that of most of the mines in the district, is small near the surface, but becomes larger as depth is attained. Assays of ore taken from the shaft, like that of all gold-bearing quartz, differ very much in value, running from a few dollars up to thousands per ton; but enough has been done to prove that it will average from \$60 to \$70 in gold per ton, there being but little silver.

A glance at the operations of some of the contiguous mines may be profitable, as indicating what may be reasonably expected in the future of the "Bodie Chief." The "Standard," in the immediate vicinity, has been open about two years, during which time it has produced in bullion over \$2,000,000, paying regular monthly dividends. The "Bodie," also adjacent to the "Bodie Chief," produced over \$2,000,000 in two months. The "Bulwer" is producing about \$100,000 per month, under careful and systematic working. Mr. Dudley Hoyt, a well-known expert in California, says: "The location of the Bodie Chief Mine is equal to any in the district, and I can see no reason why in depth it should not prove as valuable property and pay as well as the Standard and Bodie, *being on the same lode.*"

To enable the Company to push the work forward as fast as possible, the management have decided to sell 20,000 shares of the capital stock at \$1 per share. The stock may be had at the New York office (34 New street), where maps of the property may be seen, and further information obtained.

BUCKEYE MINING AND TUNNELING COMPANY,

BOULDER, GILPIN, CUSTER AND FREMONT COUNTIES, COLORADO.

Incorporated under the laws of the State of Colorado; New York Office, 52 Broadway; Denver Office, 513 Curtis Street; Alexander M. Cassidy, President; C. E. White, Secretary; D. R. Cassidy, Treasurer and Superintendent; F. A. White, Financial and Transfer Agent; Alexander M. Cassidy, Oscar Roop, D. R.

Cassiday, J. V. Harbour, J. B. Hinman, of Colorado, S. F. Dunn and A. Vanderbeck of New Jersey, and F. A. White of New York, Directors. Capital Stock, \$2,000,000. No. Shares, 400,000. Amount per Share, \$5.00.

The Buckeye Mining and Tunneling Company became a corporate body on the 5th day of February, 1876. Its object was the acquisition, by location and purchase, of mineral lands, lodes and placers, in Colorado, in such quantities as to justify extensive mining operations in gold, silver, copper and lead. On the 28th day of April, 1877, the company owned sixteen mines of 1,500 feet each, or 24,000 lineal feet of gold and silver bearing lode property, in Gilpin and Boulder Counties, with developments on each sufficient to demonstrate the fact, that, as distinctive properties, they possess great merit, and as a consolidation are of immense value. At the same time the company owned 80 acres of placer mining lands. Subsequently 720 additional acres were purchased, so that the company now owns in a single body, 800 acres of placer ground. This ground has been thoroughly prospected, and at every point gold in greater or less quantities has been found, often showing several pieces of coarse gold in a single pan. The company next purchased 2,300 acres of mineral and timber land on which fifty-two mines have been opened, each showing a well-defined paying ledge. This land is heavily studded with timber, from which an income of \$30,000 per annum can be realized, when it is deemed advisable to operate in that direction. The company also own three tunnel rights, with adits driven, respectively, 140, 190, and 200 feet. In 1878 the company purchased the "King of the Valley" mine, situated upon the rich chloride deposits at Silver Cliff, in Custer County. This mine is 1,500 by 300 feet, with ledge 80 feet in width. The work of fully opening-up the mine is being pushed forward day and night. A shaft has been sunk and the ledge cross-cut at different levels, showing uniform width of ore-body and an increased per centage in value per ton as depth is attained. The developments warranted additional purchases by the company, and the controlling interest in seven claims in the vicinity has been secured. The mines are each 300 by 500 feet, and are named as follows: "Alice," "Laura," "Champion," "American Eagle," "Song Bird," "Little Maud," and "Brookvale."

Being an acquiring and developing company, its resources have, thus far, been expended in that direction. During the past winter there has been no cessation of work on their Southern properties, and it is now resuming operations in the Northern districts. And henceforward work will be vigorously prosecuted all along the line. There are now hundreds of tons of ore on the dumps, waiting for the mills and furnaces, and thousands of tons can be produced as soon as milling and smelting facilities are ready. The certificates of assays made by Mr. Burlingame, State Assayer, and of Mr. Cassiday's Mill Tests, are on file at the company's offices in New York and Denver, and the officers invite inspection and full investigation.

BELL ELDRIDGE GOLD MINING COMPANY.

BLACK HILLS, DEADWOOD, DAKOTA TERRITORY.

Office of the Company No. 61 Broadway, New York.

The property of this company consists of the Grand Worthy Chief, Frank Davey, Forest Queen lodes, and the Bell Eldridge Tunnel site, all located adjacent to each other in Spruce Gulch, one mile from Deadwood. They are located in a district which has attracted more attention within the past four months than any other in the Black Hills, and numerous investments have been made. The tunnel site of this company was located in November, 1877, by Aaron Dunn, John H. Davey, and C. F. Leimer, and being at a time when no locations were made on the line of the tunnel it is well to know that any subsequent locations on the line of the tunnel (which embraces 3000 feet in length and 750 feet on each side of the tunnel line) made by any other parties or the company, belongs to the company. The projectors of this tunnel have conformed in all respects to the law as prescribed by the United States in each and every particular from the very beginning, thus receiving all the benefits of the law and avoiding any and all possible conflict, and making it a positive certainty of absorbing all interests discovered in the running of this tunnel to its own benefit.

The Grand Worthy Chief lode, through which the tunnel runs, is on a line with the Frank Davey lode, each comprising 1500 feet in length, and being adjacent to each other, places more mineral ground in the possession of this company than any other company in the Black Hills.

The Frank Davey lode was discovered in the Bell Eldridge Tunnel, and is now developed 125 feet, also having a side cut of 35 feet on the right, and one on the left, all of which are at this time being prosecuted vigorously. The Superintendent, Mr. A. Dunn, is an old miner of over fifteen years experience. Within a short space of time he has taken out nearly 200 tons of good pay ore which lays on the dump ready for milling. It is estimated that over 300 tons are on the dump now. The ore being a continuous ledge and an average thickness of 8 feet, these mines can deliver as much ore per day as any mines in the hills of first-class standing. The mountain into which this tunnel runs has a face or slope of about 60 degrees, and by the time the workings reach a point even with the crest of the hill it will be 400 feet below the surface. There are four distinct ledges cropping out of the surface which this tunnel crosses in its workings before the crest of the hill is reached. As soon as any of these lodes are struck the property is recorded in the company's name, and to which the company is entitled, being 1500 feet in length and 300 feet in width. The ore from the Frank Davey and Grand Worthy Chief has assayed as high on an average of \$40 per ton. The tunnel now shows a vein from 7-9 feet in thickness with all facilities, having a good ore dump, a good wagon road to the water only 600 yards distant, and what is a very valuable acquisition, an immense quantity of timber on the claims, which is a heavy item in the running of a mill and timbering in the mines. The float rock, or outcroppings, along the line of this tunnel are the richest in the Black Hills, and numerous assays have shown it to run as high as \$300 to \$500 per ton. The company also owns a good mill site (with abundance of water at hand) on which a mill will be erected of sufficient capacity to accommodate the workings. Statistics show that ore can be mined, hauled and milled for \$2 to \$2.50 per ton, and the ore from these mines is easily extracted, being of a soft nature. The property above described is beyond question the largest and has the best prospect of any that has yet been placed before the public. The company is stocked in New York city for \$1,000,000 capital stock, and divided into 200,000 shares of \$5 each. The stock is full paid and non-assessable. The mining property is all paid for and there is no indebtedness and is free from all incumbrances. The company has prudently set aside 100,000

shares for working capital. The company has competent men to take charge of its affairs whose standing for integrity is beyond a question, the President being Colonel Cormack, who is now President of the Cheyenne Gold Mining Company of the Black Hills, the success of which company is now an established fact.

CHEYENNE MINING COMPANY.

Office of the Company, No. 61 Broadway, New York. Officers of the Company, Col. R. P. Cormack, President; D. B. Canoll, Vice-President and General Manager; R. McNaught, Secretary and Treasurer. Directors—Col. R. P. Cormack, Delhi, N. Y.; A. C. Edgerton, Delhi, N. Y.; R. McNaught, Cashier First National Bank, Hobart, N. Y.; D. B. Canoll, G. Frisbee, and H. H. Folk, Deadwood.

One of the most prominent, prosperous, and promising mining corporations of the hills, the Cheyenne, was organized under the laws of New York late in the year 1873, and has already secured possession of three valuable mines upon the great gold belt, in close proximity to the famous Father De Smet; and by the rapid development made, and the manner of prosecuting work, they have elicited the admiration of the community at large.

The principal office is at 61 Broadway, New York City, with a branch at Deadwood, the latter, together with the works, being under the immediate supervision of Mr. Carroll, one of the most sagacious and successful mining experts in the West.

The stock of the company, divided into 200,000 shares of a par value of \$5 each, was originally placed at \$1 per share, but the success of the company in developing their original purchase, and the subsequent possession of two adjacent mines, each free of litigation and showing large bodies of high grade ore, advanced their value 50 cents a share. These shares are, by reason of their non-assessable character, considered unusually good property, both for speculative purposes and for permanent investment, and as such are being rapidly absorbed. The working capital of the company was derived from the sale of 50,000 shares, contributed by original subscribers, and is ample to meet all expenses until the property shall be placed on a paying basis, which, judging from the present outlook, will be accomplished ere the close of the present year. The property of the company consists of the Cheyenne, Hoodlebug, and Moore lodes, lying contiguous to each other, upon "the belt," and in close proximity to the De Smet, Roderic Dhu, Erin, Gopher, Terra, and other well-known claims of the California Company. The Cheyenne, the original purchase, is but a trifle less than a full location, being 1,232 feet in length by 282 feet in width, showing a true fissure vein of over 80 feet in width, lying between slate and porphyry, and composed of chloritic slate intermixed with quartzite, white flint or silica, hematite, and sulphide of iron, with its proportion of precious metals. The ore-body shows a uniform character, and various mill runs, about 250 tons in the aggregate, show its value to be about \$10 per ton, albeit certain streaks are of surprising richness, as per assays made by Chambers C. Davis, the well-known metallurgist, who returned as high as \$1,162.50 per ton. The mine has been thoroughly opened, and the company's mill is now running upon ten dollar rock. West of, and running obliquely from, the Cheyenne is the Hoodlebug mine, recently purchased and merged into the Cheyenne. It is a full location with an unclouded title, and shows an immense body of ore, which of itself, even should it produce but \$5 per ton, will prove a veritable bonanza to the fortunate owners. The locators thoroughly explored and developed the property, milling upwards of four thousand tons, conclusively proving its value second to none in the hills. The present owners have a large force of men at work upon this mine as well as the Cheyenne, and are taking out rock that will average \$12 per ton. The company has just perfected the purchase of the Moore mine, a full location lying east of and parallel with the Hoodlebug, and joining the Cheyenne on the south. This property, although but partially developed, is sufficiently exposed to show the presence of a large ore-body, easily mined, and of free-milling quality. The company is at present negotiating for the purchase of the Grand Deposit and Baltic mines, lying upon the east and west of the Cheyenne respectively. Should the purchase be effected, the Cheyenne Company will have a larger area of mining property than any other corporation in the hills.

In addition to the above, the company owns the Badger twenty-stamp mill, mill-site, water right, and the Oro mine, distant from the Cheyenne about 400 yards, and connected therewith by an excellent ore road of easy grade. It is the purpose of the company, however, to erect a tramway for the delivery of ore in cars by gravity. Arrangements are almost completed for the enlargement of the mill to thirty-stamp capacity, with reasonable probabilities that an improved eighty-stamp mill will be erected during the coming season.

Collectively the Cheyenne property is an immense possession, best illustrated by the fact that the ore-body from the west side of the Hoodlebug to the east line of the Moose measures 4,000 feet in width, as determined by tunnellings and croppings, and can be traced on the surface fully 2,000 feet along the several locations, affording abundance of quartz to keep a one hundred and twenty-stamp mill in constant operation for fifty years.

Careful computation by Superintendent Frisbee establishes the cost of mining the ore to a depth of 150 feet at 80 cents per ton—which will be greatly reduced as soon as cheaper labor and diamond drills are introduced, as contemplated—the cost of milling at 90 cents per ton, and of amalgamating, retorting, and reducing to bullion at 20 cents per ton, so that, with ten dollar rock, the company must realize a net profit of eight dollars and ten cents per ton.

CANAJOHARIE MINING COMPANY.

CANAJOHARIE, MONTGOMERY COUNTY, NEW YORK.

Office, 206 Broadway, New York. T. A. Howland, President, A. G. Sanford, Secretary; T. A. Howland, John L. Randall, A. G. Sanford, J. B. Hulbert, John T. Banker, John R. McNulty, Benj. G. Sanford, Directors. Capital Stock, 100,000 shares of \$10 each. Organized in New York.

CASCADE MINE.

CASCADE DISTRICT, CLEAR CREEK COUNTY, COLORADO.

Office of the Company, No. 62 Broadway. Officers of the Company, James M. Leavitt, President; J. Warren Brown, Vice-President; Nathaniel A. Boynton, Treasurer; Q. A. Atwood, Secretary; G. Mansfield Henty, E. M., Consulting Engineer; Ed. O. Wolcott, Counsel. Board of Trustees—James M. Leavitt, Washington Avenue, Brooklyn, N. Y.; N. A. Boynton, of Richardson, Boynton & Co., New York; J. Q. Preble, of J. Q. Preble & Co., New York; H. H. Dunclee, New York; L. Lincoln, late L. Lincoln & Co., New York; Q. A. Atwood, of Dunham, Ives & Co., New York; J. Warren Brown, 10 Maiden Lane, New York. Capital Stock, \$300,000. Shares, \$10.

Six years ago discoveries of rich mines were made in this district lying a few miles east of Georgetown and north of Cascade Creek. The Cascade Mine is the only one in the belt upon which much development has been made, and for some time, owing to a conflict in title, but little work has been done upon this. The trouble has all been amicably adjusted upon this property, and the work of opening the mine will now go forward as rapidly as men and money can push it. The reason the district has not been worked more, was its inaccessibility to an ore market, an obstacle that has been removed.

The Cascade lode can be traced from Ute Gulch, at the point where the tunnel has been started on it, clear across the mountain to Cascade Creek, a distance of a little more than a mile. It is a monster lode, if we may judge from the prominence and immense width of the quartz outcroppings. Several shafts have been sunk on it, in different places, and wherever opened pay has been taken out. At the mouth of the tunnel we found a good blacksmith shop and ore house. The tunnel is substantially timbered as far as necessary, and is supplied with a railway track the entire distance it has been driven. In the present breast of the tunnel there are about five inches of good ore on the banging wall. The tunnel will make depth on the lode rapidly from the present face, and we hazard the prediction that it will prove up the Cascade to be one of the best silver mines in the Territory. There is, in fact, no "hazard" about it, unless all indications fail. We have examined the certificates of thirty-one tons of ore taken out in driving the tunnel, and sold at the Whale mill, which show a range of from 106 ounces to 520 ounces silver per ton, giving a general average of about 250 ounces. Specimen assays have been had of ore running as high as 1,864 ounces. The quartz is an iron stained hard, yellow, compact rock, and any of it will assay from twenty to fifty-three ounces; one lot of four tons of this rock showing no mineral, run as an experiment, gave 53 ounces per ton silver. The mineral streak carries galena, black sulphurets, gray copper, ruby, wire and leaf silver. It is proper to say here that as much ore was sold to Hill as was sent to the Whale Mill.

CASHIER MINING COMPANY OF COLORADO.

MAMMOTH HILL, COLORADO.

Incorporated under Laws of State of New York. Office, 52 Broadway, Rooms 33 and 34, New York. Stephen B. French, President; Jas. M. Coleman, Secretary and Treasurer. Capital, \$500,000. No. of Shares, 250,000. Issued Full Paid and Unassessable.

The property is situated on Mammoth Hill, $\frac{1}{4}$ mile distant from the depot of the Colorado Central R. R. at Central City, and is surrounded by the mines which have given prominence to the gold interests of the State. It consists of the Cashier Lode, 1500 linear feet on the vein by 150 feet in width, covered by U. S. Govt. Patent, and the North Cashier and South Cashier, parallel veins on either side, the whole covering an area 1500 feet in length by 400 feet in width.

The Cashier Lode is that part of the Bobtail Vein lying midway between the "Bobtail," "East Bobtail," and "Denmark" mines on the east, and the "Clark-Gardner," "California" and "Hidden Treasure" mines on the west of the same, and covers the intersection of the Gregory Vein with the Bobtail.

Upon coming into possession of the property one year ago, the company continued the opening of the mine under the superintendence of Joseph W. Holman, with the view to a daily output of ore corresponding with its location in reference to the large bullion producers on the same vein, and in the immediate vicinity.

The body of ore in sight, which can be mined without interfering with the further development, is sufficient to supply to its full capacity the 35 stamp mill the company expects to have in operation early in July.

CASTLE DOME MINING AND SMELTING COMPANY.

CASTLE DOME DISTRICT, YUMA COUNTY, ARIZONA.

Office of the Company, No. 34 New Street, (Room 29), New York. Leopold Balbach, President; William H. McClintock, Secretary; Leopold Balbach, A. P. Minear, William P. Miller, Trustees. Capital Stock, \$4,000,000. divided into 40,000 Shares of the par value of \$100.

The property of the Castle Dome Mining and Smelting Company consists of nine claims, lying upon three distinct lodes, as follows: On the Buckeye Lode—the "Hopkins," 600 by 200 feet; the "Norma," 1000 by 200 feet; the "Caledonia," 1050 by 600 feet; the "Wm. Penn.," 1500 by 600 feet; the "Miller," 1500 by 600 feet. The Flora Temple Lode—the "Little Dome," 1500 by 600 feet; and on the Big Dome Lode—the "Little Willie," 1400 by 200 feet; the "South Dome," 1500 by 600 feet; the "Conglomerate," 1500 by 600 feet—aggregating 11,550 feet along the vein. The mines lie eighteen miles east of the Colorado river and forty-five miles northeast of the town of Yuma. On the Colorado river the Company has a blast furnace, with an engine of 20-horse power, with capacity of twenty tons per day.

The Castle Dome ores are argentiferous galena—lead and silver in gangue of fluor-spar—showing no trace of antimony, bismuth, arsenic, zinc, or other base metal so detrimental to smelting and the production of pure lead. These ores, after extracting the silver, command the highest price in the San Francisco market for the manufacture of white lead—the consumption of which on the Pacific coast is

about 400 tons per month. The cost of mining and transporting the ores to San Francisco, is \$28.50 per ton, and the regular market price, based always upon assay value, is from \$45 to \$65 per ton. Time to San Francisco, 60 hours, and freight on ores only \$11 per ton.

The Company is under careful, economical, yet energetic management, and handsome dividends to stockholders may confidently be expected. Maps, reports and specimens of the ore may be seen and inspected at the Company's (New York) office.

CLEVELAND GOLD COMPANY.

GILPIN COUNTY, COLORADO.

Office, 54 William Street, New York. Officers, Hiram A. Johnson, President; George E. Hutchinson, Treasurer and Superintendent; Thomas L. Carpenter, Secretary; Hiram A. Johnson, George E. Hutchinson, George H. Burt, Francis A. White and Thomas L. Carpenter, Trustees. Registrars, Farmers' Loan and Trust Company, No. of Shares, 100,000, of the par value of \$10 each. Stock fully paid up and unassessable. Listed on the New York Mining Stock Exchange.

The mines of the company are situated on Quartz Hill, near Central City, Gilpin County, Colorado, and are as follows: The Alps-Mackie, 1,525 linear feet; Winslow, 1,400 feet; Bonaparte, 1,500 feet; Florence, 1,500 feet; Dan Eells, 1,500 feet; making an aggregate vein length of 7,425 feet. The Alps-Mackie is the Lode on which the principal developments have been made. The main shaft has reached the depth of 567 feet, on which the sinking will be continued. The work is conducted by a regular system of shafts, levels and winzes, which has exposed large bodies of ore, estimated to be already sufficient to employ a 50 stamp mill for years.

The company has recently placed two large steam pumps in the Alps-Mackie mine, which, together with the ore hoisting works, are operated by a steam engine of ample power erected over the main shaft. The machinery, buildings and other superstructure works are in excellent condition for the economical and efficient working of the mines. The veins are true fissures encased between well defined walls of granite formation of an average width exceeding four feet, and presenting evidences of great richness and durability. The vein material consists mainly of iron and copper pyrites, carrying gold, silver and copper, the gold, however, largely predominating in value.

These mines are surrounded on all sides by the most productive gold producing properties in the State, and are situated near the summit of a mountain that has yielded from a superficial exploration of only a portion of its mines more than \$20,000,000. It is questionable whether Quartz Hill has a parallel in any known mining region for either the richness or number of its gold mines.

From a careful calculation, based on essays of the ore found at different points in the mine, and on the yield of that already extracted, it is estimated that the reserves now in sight have a cash value of fully \$300,000.

The mines had produced upwards of \$500,000 in gold before their purchase by this company. It has been the plan of the company to thoroughly develop the Alps-Mackie Mine, so as to be assured of its capacity for ore production, before erecting reduction machinery, and the company has decided to erect a 50 stamp mill in convenient proximity to the mines. No ore has been sold or reduced since the company commenced work, excepting such as has been necessarily extracted in driving levels, winzes and shafts, and yet 2,150 tons have been milled, giving an average of \$10.57-100 per ton, while 132 tons have been sold to the smelters at an average price of \$52.46-100 net, per ton. On the erection of the mill it is confidently expected that the company will commence the payment of handsome and regular dividends on its capital.

The Colorado Central Railroad is already completed to within a mile and a quarter of the Alps-Mackie, and it is stated that a feeder to the main line will soon be extended up the mountain to a point very near the mines. Good wagon roads have been constructed, radiating from the company's works in all directions; and being less than a mile and a half distant from Central City, the base of supplies for that region, the location becomes a most accessible and desirable one, offering every advantage attainable in that country for successful mining.

COLORADO MINING AND LAND COMPANY.

ANIMAS PARK, UNCOMPATIGRE DISTRICT, COLORADO.

Office, 20 Broadway, New York. Charles H. McIntyre, President; J. S. Buell, Secretary and Treasurer; David H. Anthony, Chas. H. McIntyre, John Roberts, W. H. Baker, Wm. F. Rogers, Matthew Witbeck, Frank Unger, Harvey D. Reynolds, John C. Sheehan, Frank Hammond, F. Wilting, Alex. H. Brown, Jonathan S. Bull, Directors. Capital Stock, 40,000 shares of \$25 each. Organized in New York.

COLUMBIA CONSOLIDATED GOLD AND SILVER MINING COMPANY.

ELKO COUNTY, NEVADA.

Office of the Company, 33 Wall Street, New York. Officers, Washington Lee, President; Cassius H. Read, Secretary and Treasurer; B. B. Vandusen, Superintendent; Charles A. Watson, Cashier; Washington Lee, Cassius H. Read, R. S. Grant, Joseph Steckney, John R. Dos-Passos, Trustees. Annual meeting third Monday in May. No. of Shares, 100,000. No. of feet, 3500. Par Value, \$50. Stock Not Assessable.

This company was organized under the laws of the State of New York in May, 1878, and immediately commenced operations on their property situated on Bull Run Basin, Elko Co., Nevada—about seventy-five miles north of Elko.

Their property then consisted of two adjoining claims, known as the "Infidel" and "Columbia," with an aggregate run of 2500 feet. When the company took possession of the mines a two-foot lode had been developed to the depth of about seventy-five feet, and the assays of the ore showed an average of over \$100 to the ton. A ten-stamp mill was erected to run by both steam and water power, and started in November, 1878, and in six weeks turned out over \$60,000 in silver bullion.

In January, 1879, the mine had been developed to such an extent and improved so much, both in quality and quantity, that the company deemed it advisable to increase their milling capacity—consequently the mill was shut down, and arrangements made to give it double its original capacity—say from thirty to forty tons per day.

During the winter of '78 and '79 work has been steadily going on in the mine, and a large body of rich ore has been developed to the depth of over 400 feet. A tunnel has been driven in, and the lode has been tapped at a depth of 200 feet from the outcrop, and a second tunnel is now being driven in to meet the lode at a further depth of 556 feet below the outcrop. Thus all the ore above the lower tunnel will reach the mill by gravity.

Mr. B. B. Vandeusen, formerly the Superintendent of the Telegraph mines at Salt Lake, is now in charge of the works, and is arranging to extract the bullion by a leaching process, in which he has been so highly successful at Salt Lake.

In his report to the President of the company, March 12, '79, he says: "The vein has been developed about 375 feet measured on the incline. It shows great regularity—is from two to five feet wide, and has increased in richness as it has progressed in depth. The future of the mine is as well assured as it can be; in any mine with the same development ore has been stoped out over a surface of 100 by 125 feet. This ore was reduced last Fall at the company's mill, netting over \$60,000 of silver bullion, notwithstanding the severe loss occasioned by gross mismanagement in the mill, which must have exceeded \$50,000. There is at present sufficient ore on the dump and in the ore house to increase the net result referred to, more than one-half.

"No stoping out has been done below the third level. A winze, however, is being sunk from this level as rapidly as possible. It is now down about forty feet, and so far the vein has grown larger, more regular, and higher grade.

"I made assays of several samples of ore taken at different depths in the winze and found that they uniformly contained from \$100 to \$200 per ton, and selected samples assayed as high as \$1700 per ton.

"The vein is in limestone formation, with the presence of porphyry. I have no doubt of its being a true fissure vein, and has every indication of going to great depth.

"From the examination I have made of your mines, I should estimate that, when reduction works are completed and in operation, your company should realize monthly dividends of say \$50,000, and I look for results even better."

In reporting upon this mine Mr. Vanduesen says: The shute of the ledge in this mine is Northwest and Southeast and dips Northeast. It is in a lime stone formation with a dark slate forming the top part of the foot wall.

A shaft or incline is sunk on the ledge above about 350 feet, showing a strong, well defined vein from five to seven feet wide, samples from which assay from \$30 to \$200 per ton. It can be safely estimated that the present developed portion of the mine contains, at least, 6000 tons of ore averaging from \$40 to \$50 per ton, which can be extracted and reduced into bullion at a cost not to exceed \$8 per ton.

THE "ALPHA" LEDGE.

During the past winter a new ledge—4 to 5 feet thick—was discovered within twelve feet of the Columbia ledge, and apparently running down parallel with that ledge. It was located and named the "Alpha." It has been developed about forty feet in depth and 200 tons of ore have been raised, averaging \$100 per ton. Whether this vein becomes merged in the Columbia or is a separate, independent lode, it is looked upon as a valuable accession.

THE MOUNTAIN LAUREL MINE.

In December last the company purchased the Mountain Laurel Mine, situated near Mountain City, and about ten miles from the Columbia. This vein is now developed 425 feet in depth, has an average thickness of eight feet, is good pay ore, and can be easily and cheaply reduced by the leaching process. The company have not increased their capital stock on account of this purchase, and propose to erect extensive reduction works, and conduct both operations under the same management.

CONSOLIDATED BOBTAIL GOLD MINING COMPANY.

GILPIN COUNTY, COLORADO.

Office, 76 Wall Street, New York. President, George A. Hoyt; Secretary, John Stanton, Jr.; Directors, George A. Hoyt, J. B. Chaffee, E. C. Litchfield, E. H. Litchfield, John Ewen, W. Ferguson, L. H. Brigham, J. Stanton, Jr., R. J. Hubbard. No. of shares, 227,326, of the par value of 15 cents each. Listed on New York Mining Exchange.

CONSOLIDATED BONANZA GOLD AND SILVER MINES.

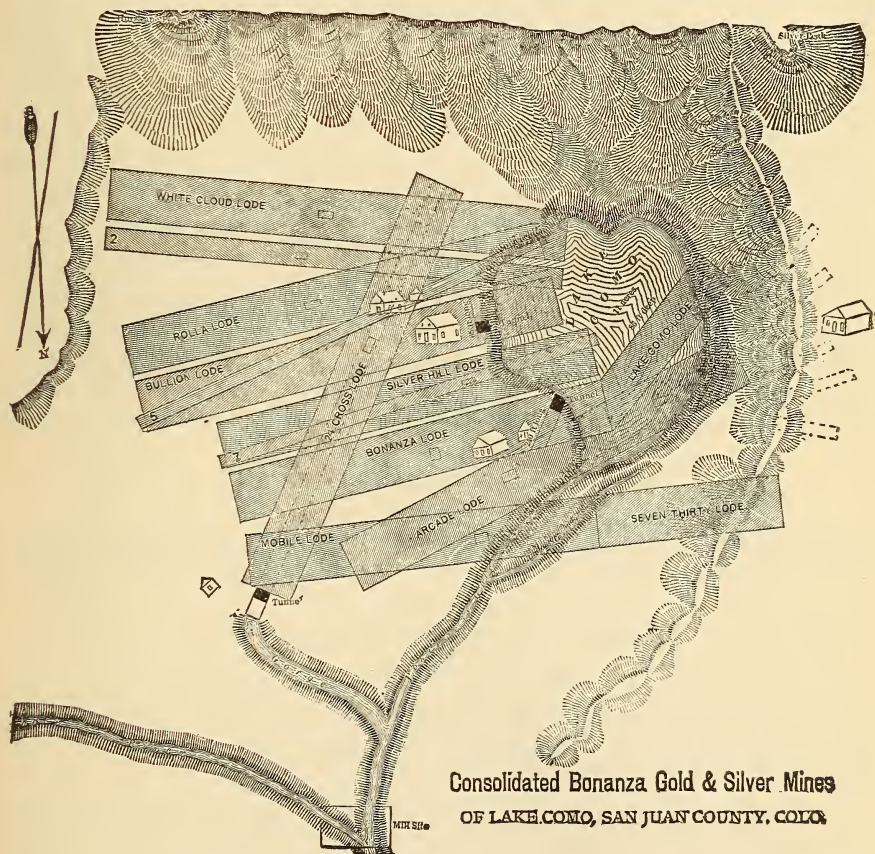
LAKE COMO, SAN JUAN COUNTY, COLORADO.

The property of the Consolidated Bonanza Gold and Silver Mining Company consists of seven distinct veins or lodes, each of 1500 lineal feet, as follows:

The "Bonanza," "Arcade," "Lake Como," "Silver Hill," "Bullion," "Rolla," and "White Cloud," aggregating 10,500 feet. The mines are located in Poughkeepsie Gulch, 12 miles north of Silverton, 8 miles south of Ouray, and 3 miles north of the Lixivation works at Gladstone. The principal line of approach to the mines at this time is by way of Saguache, through the Uncompahgre Valley, to Ouray. There is also a good route to within less than a mile of the mines by way of Lake City. Three lines of railroad are now approaching the vicinity, vieing with each other to reach Silverton, Ouray and Animas Forks.

The Bonanza mines were discovered in October, 1873. The lode has its origin in Lake Como, which is evidently the crater of the extinct volcano of the region. This crater is now filled with water, ranging in depth from 15 to 86 feet, and covering an area of 11 acres. On a clear day, by using of a raft out on the lake, over the lode, you can look down through water 10 to 20 feet deep, that is as clear as crystal, and see masses of ore standing up in ledges that almost surpass imagination. The entire bottom of the lake seems one mass of ore. The amount thus volcanically placed in sight,

if continuing to reasonable depth, would reach far up into the thousands of tons. From this old crater, some 15 or 20 lodges radiate, all remarkable for their size and the richness of their ores. The Bonanza is the union of a large number of these veins into one monster vein. Its southwest end is in the lake, some 350 feet from the shore, and extends thence in one solid vein 1500 feet in a northeasterly direction, with 150 feet of ground on each side of the centre of the vein. The lode is from 80 to 100 feet wide, and embraces seven mineral veins varying in thickness from 15 inches to 4 feet. The lode dips 86 degrees, east, and is a true fissure and the mother lode of the region. The walls so far as exposed are smooth and solid. The difference in the composition and structure of the vein matter and that of the country rock is so marked that we must recognize this lode as the result of a great cataclysm of nature, by which the solid crust of the earth has been sent asunder to unknown depths by volcanic force; and that the valuable mineral products of the vein extend to a depth far beyond the ingenuity of man to work. The three ore-bodies on each side of the lode dip to the centre one, indicating that at a depth of 100 or 200 feet at the farthest, they will all come together, forming one massive, solid mineral vein or ore-body not less than 20 feet thick. The off-shooting lodges from the southwest end of the Bonanza vary in width from 8 to 30 feet, all carrying the same general class of minerals, rock and gangue matter of the mother vein. The average of the surface ore that has been treated up to the present time has



been from 125 to 250 ounces of silver per ton. So far no ore has been found in the mine that yielded less than 80 ounces in silver per ton. One of the largest veins (4 feet) is composed of a rich argenteriferous galena carrying 80 ounces of silver per ton. Another vein (30 inches) shows sulphurets of iron and copper, carrying 100 ounces of silver per ton. Another vein (4 feet) carries sulphurets of baryta, and richly intermingled with gray copper, carrying 400 to 800 ounces of silver per ton. There are four more veins, respectively 15, 18, 24, and 36 inches in width, the principal ores being the different classes of sulphurets and oxides, viz.: Gray copper; black and gray sulphurets; brittle silver; silver glance and a small amount of antimonial silver; black and gray oxides of silver; oxide of iron and zinc blend in small amounts. These are no refractory ores in the mine, all being dry milling and free smelting.

Two shafts have been sunk to a limited depth on the property; but the principal developments being made are by tunnels. A tunnel was started last Fall at the southwest corner of the lode, near the edge of the water. It has been driven in, northeasterly, diagonally across the lode, and is now 240 feet in length. It has cut five of the ore-bodies, and many tons of ore have been extracted yielding from 400 to 800 ounces per ton. The present output of ore is about 50 tons per day, but with very lit-

the labor this can be doubled or even quadrupled. Wood and water, and a splendid water power, are within convenient distance.

In closing an able and elaborate report on the mine, Mr. H. C. Justice, mining engineer, says: "If properly managed, by the first day of August, 1879, at least 250 men could be put to work profitably, and the output increased to 250 tons per day; \$50,000 will erect all the buildings, purchase, ship and put in running order all the machinery for a reduction mill of a daily capacity of 50 tons, and supply steam drills to excavate tunnels, and all the tools for a first-class mining company. 50 tons per day would net at the lowest calculation \$3500 per day, and over \$1,000,000 per annum. I believe that after the first year over \$3,000,000 will be realized annually. There is an immensity about this whole property that stops one's calculations as to what it is worth. It is certainly the most extensive body of rich mineral that I have ever seen either in Colorado or elsewhere."

Attention is called to the accompanying map, showing the position of the Bonanza mines.

CONSOLIDATED REPUBLICAN MOUNTAIN MINING COMPANY.

GEORGETOWN, COLORADO.

Organized under the Laws of the State of New York. Officers of the Company, J. Warren Brown, President; Chas. E. Quincey, Vice-President; Walter T. Hatch, Treasurer; H. H. Duncklee, Secretary. George M. Henty, E. M., Superintendent; Ed. O. Wolcott, Attorney. Board of Trustees—J. Warren Brown, 62 Broadway, New York; Ed. Elisha Mack, Albany, N. Y.; Walter T. Hatch, 34 Wall Street, New York; N. A. Boynton, 232 Water Street, New York; Chas. E. Quincey, 19 Broad Street, New York; W. B. Wadsworth, 10 Wall Street, New York; Joseph Tilney, 2 Nassau Street, New York. Capital Stock, \$1,200,000. Divided into 120,000 shares of the par value of \$10. Full Paid and Unassessable.

The mines of the company are situated upon the side of Republican mountain, extending from within a few hundred feet of the city limits of Georgetown, Colorado, nearly to the village of Silver Plume. They consist of twelve discovery claims, of from 600 to 1500 feet each—"Barbary Allen," "Edward Everett," "Edinboro," "South America," "Morning Star," "Fenian," "Dryden," "Peru," "Rocky Mountain Mammoth," "Kit Carson," "Par," "Granada," and form a complete chain three-fourths of a mile in length, unequalled in extent and value by any mines in the State. The ore mills from 300 to 900 ounces per ton.

It is proposed to thoroughly open and develop the mines as speedily as judicious economy will admit. To this end \$200,000 of the capital stock has been placed in the hands of a special Trustee, as working capital, but only such portions will be used as may be necessary should the products of the mine at any time be less than the receipts for ore.

Mills are located within a quarter of a mile of the mines, and it is less than a mile to the railroad depot. The company own valuable water powers in the immediate vicinity, upon which they will erect a mill should they decide to treat their own ores.

Maps, reports, ores, assays, etc., may be seen at the New York office of the company—62 Broadway.

CRYSTAL LAKE MINING COMPANY.

LAKE AND SUMMIT COUNTIES, COLORADO.

Office, Bridgeport, Connecticut. President, Alexander Robert Chisolm; Secretary, H. W. Watson; Directors, Hon. W. H. Barnum, David P. Morgan, A. R. Chisolm, David S. Draper, George H. Price. No. of feet, 12,000; No. of shares, 4,000, of the par value of \$25 each.

DAHLONEGA GOLD MINING COMPANY.

AURORA, GEORGIA.

Organized under the Laws of the State of New York. Officers of the Company, Loring L. Lombard, President; Alfred L. Faris, Vice-President; Chas. A. Trowbridge, Secretary and Treasurer; Loring L. Lombard, Stephen R. Halsey, Alfred L. Faris, Chas. A. Trowbridge, of New York; and Thomas R. Lombard, of Dahlonega, Ga., Directors. Mines, Water Power and Water Rights Property situated near Dahlonega, Lumpkins County, Georgia. Principal Business Office, 40 Broadway, New York. Capital Stock, \$250,000, divided into 250,000 Shares of the par value of \$1 per Share. Unassessable.

The property of the Dahlonega Gold Mining Company (formerly known as the Battle Branch Gold Company) consists of 80 acres of mineral land situated on the Etowah river, about one mile from the village of Aurora, Georgia; water-rights and power, including a dam across the Etowah, a race 750 feet in length, and 21 miles of ditches for supplying their own and adjacent mines with water at all seasons; a splendid 10-stamp mill, capable of crushing fifteen to twenty tons of ore per day; the Little Giant Hydraulic works which do the work of fifty men; and a tramway for transporting the ore from the mine to the mill.

By the aid of their splendid water-power the company is enabled to wash all the top dirt, and thoroughly expose the ledge, cutting a channel 100 feet wide by from 100 to 150 feet in depth, and saving every particle of gold in the sluice boxes. The debris is all carried off in the freshets of the Etowah. The vein matter thus uncovered is then carefully taken out and run down the tramway to the mill. Some of this rock is so rich that it is pulverized by hand in mortars. There is ore enough to keep the mill running for years. The superintendent, from careful surveys, prospectings and assays, is of the opinion that enough gold will be taken out in the next few hundred feet to pay back in dividends the full amount of the capital stock. Near where the company is now working, and on the same vein, \$100,000 was taken out in less than 100 feet. The present workings of the mine are all above water-level, and the deep-workings—always the richest—are all in the future. Hence the management need feel no hesitancy in assuring stockholders and the public generally, that the future of the Dahlonega is well established, and will be eminently satisfactory.

DUNDERBERG MINING COMPANY.

GEORGETOWN, COLORADO.

Officers of the Company, J. Warren Brown, President; Charles Dennis, Vice-President; Walter T. Hatch, Treasurer; H. S. Bradford, Secretary; J. Warren Brown, Charles Dennis, Thomas Slocum, Emery Thayer, Geo. H. Morrison, S. B. Elkins, Walter T. Hatch, C. E. Quincey, E. S. Mills, Hiram Deming, H. H. Duncklee, Trustees.

The Dunderberg Mining Company has consolidated the following claims.—“Dunderberg,” 3000 feet; “East Terrible,” 500 feet; “Sub-Treasury,” 1500 feet; “Silver Chain,” 1500 feet; “Muldoon,” 700 feet; “Elephant,” 700 feet; making 7900 feet on the series of fissure veins that extend for some miles through the mountains of Clear Creek Valley. Upon this Belt of lodes are also situated the famous “Terrible,” “Pelican,” “Dives,” “Maine,” “Baxter,” and other mines, which, during the past few years, have yielded millions of dollars, and are still productive.

The Dunderberg mines are located at Brownville about two miles from Georgetown, Colorado. Sufficient work has been done on the lode to justify the management in assuring the public whom they invite to become shareholders, that the mine is rich and a true fissure vein practically inexhaustable. Mr. E. B. Dorsey, recognized on the Pacific coast as a thoroughly competent expert and engineer, after a careful survey and examination of the mine, says: “The vein is a true fissure, and one of the most constant and continuous I ever saw, being in good pay ore for a distance of over 2000 feet, and to the depth of 800 feet.”

George M. Henty, M. E., in his report made in March, 1879, said—“The lode is of that class and character which in other parts of the world have been worked for centuries without sign of decadence;” and then adds that the property is by far the most valuable of any in that celebrated silver-producing county. Professor Rothwell, of New York, estimates a profit of \$500,000 per annum from the small portion of the mine now open. General F. L. Vinton, in closing his report on the Dunderberg, says: “Knowing as I do the remarkable value of its past product, and believing as I do in the permanency of the vein, I am quite free to say I regard it as one of the safest and most promising investments in the State; and such is the opinion of all persons with whom we have conversed upon the subject.”

The company has been organized with a capital stock of \$1,500,000 divided into 150,000 shares of the par value of ten dollars. The stock is full paid and unassessable.

We understand that detailed reports, maps, and specimens of ore from all the workings of the mine, together with authenticated statements of ore sold to date, may be seen at any time at the office of the company.

The character of the Brownville district, the great number of feet owned by the company on the lode, the richness of the ore and the permanency of the ore-body, combined with the fact that the mine is under honest, energetic and judicious management, leave no doubt of a brilliant future for the company.

EMPIRE GOLD MINE.

PLYMOUTH, AMADOR COUNTY, CALIFORNIA.

Office, 8 Wall Street. Algernon S. Sullivan, President; W. B. Leonard, Vice-President; S. V. White, Treasurer; G. H. Handforth, Secretary. Directors: A. S. Sullivan, W. B. Leonard, C. J. Osborn, J. L. Hathaway, S. V. White. Capitalized under the laws of the State of New York; 200,000 shares of \$10 each, full paid and non-assessable. Total dividends to date, \$136,600; last dividend, April 30th, eight cents per share.

The Empire Mine is situated at Plymouth, Amador County, California. The claim is 1,900 feet long, on a section of what has been known in times past as the “Great Mother Vein” of California. This term dates back almost to the first discovery of gold on the Pacific Coast, and although this so-called vein is not continuous in length, it is made up of separate and disconnected veins following a general direction. Upon its course are situated some of the most noted gold mines in California.

The vein upon which this mine is situated is inclosed in a black argillaceous slate; its direction is northwest-southeast, with a dip to the east of sixty to seventy degrees. Both the walls are of slate. The vein is very massive, varying in width from a few feet to nearly fifty feet; its average width is from thirty-five to forty feet. The quartz extracted from this mine is of a greyish-white color, interlaminated with seams of soft slate, which frequently have a direction parallel to the walls of the vein. The mine is opened by two shafts, which are worked independently of each other. The quartz is extracted from both shafts in buckets running on guides. The mine is very dry. The principal developments of the mine are connected with the south shaft, from which levels have been run off in the vein at intervals of one hundred feet. Since the organization here, the mine has been paying its monthly dividends and the shafts have been sunk deeper until the 1200 foot level has been attained. The mine is on a lode and under a management where mining has always been successful. The mine is now acting like the Old Amador, out of which more than \$12,000,000 have been taken and which is still paying, being now down 2200 feet. The Empire has been increasing in richness from the 800 to the 1200-level. The present management are perfecting extensive improvements.

There is an eighty stamp mill at the mouth of the shafts owned by the company, supplied with water brought in a ditch over 25 miles long (also the property of the company), from the Cosumnes river, which not only furnishes the power for running the mill, but is a canal in which all the necessary timber and wood for the mine are floated from the immense timber supplies of the Sierra Nevada mountains. Besides these there are ample steam engines and machines for hoisting and running the stamp mills should any accident to the ditch temporarily cut off the supply of water.

From the above we can draw the following conclusion: That this property is situated in a region on an auriferous belt, where, as a rule, the quartz mines have proved *more lasting, more uniform* in their yield and *more persistent* in depth, than anywhere else in California; that this mine exhibits no features of weakness in the lower levels, but, on the contrary, the quality of the quartz *improves* as the works progress in depth towards the south; that these evidences are so marked that future develop-

ments may be expected to add largely to the value of the property and that this mine will last for years to come; that the vein is exceedingly massive and capable of turning out a large quantity of quartz from each new level opened; that although the actual amount of quartz now standing in the mine is very large, its quality is indefinite.

EMPRESS MINING COMPANY, OF COLORADO.

GREGORY MINING DISTRICT, COLORADO.

Incorporated under the Laws of the State of New York. Office of the Company, 52 Broadway, (Rooms 33 and 34), New York. Officers, James Howell, President; Junius Schenck, Secretary and Treasurer. Capital Stock, \$500,000. Par Value of Shares, \$2. Full Paid, Unassessable.

The mining property of the company is situated on Mammoth Hill, Gregory Mining District, Gilpin County, Colorado, one-fourth mile distant from the depot of the Colorado Central Railroad at Central City, and midway between the adjoining cities of Black Hawk and Nevadaville.

The "Empress Lode" is on the celebrated Fisk vein, which is reputed to have yielded over \$2,500,000 gold within the past few years, and is that part of it west of the "Treasury" property, which it adjoins, and lies about 500 feet south of the Bobtail vein, parallel to and opposite the Cashier Mine.

It comprises 1500 feet on the vein by 150 feet in width, and under former workings had been developed by three shafts down to the respective depths of 110, 90 and 35 feet, with 150 feet of levels, the ore yielding from $4\frac{1}{2}$ to 9 ounces gold per cord under stamps.

The present organization acquired the property in March, 1879, and the work of development has since then been pushed forward as rapidly as possible upon an extensive and systematic plan, with the view to a large production as soon as the requisite shafts and levels are opened.

Under the present management ore is being extracted which mills from four to ten ounces per cord, with well-defined, true fissure veins, for which Gilpin County is celebrated.

There can be no question but what the "Empress mine," with its present prospect, will take its place among the largest producers of bullion in Gilpin County.

ENTERPRISE MINING COMPANY.

BODIE DISTRICT, MONO COUNTY, CALIFORNIA.

Office of the Company, No. 327 Pine Street, San Francisco. Officers of the Company, M. Mayblum, President; D. F. Verdenal, Secretary; M. Mayblum, S. Heydenfeldt, Wm. Sherman, A. Forbes, W. H. Sharp, Trustees.

The Enterprise Mine is located in the Bodie Mining District, Mono County, California; is incorporated in San Francisco. This property joins the famous Bodie Mine, out of which so much gold has been taken during the last eighteen months. The shaft is now down about 100 feet on a well-defined ledge. It is well known that the main ledge, on which the Standard and Bodie Mines are located, pitch to the west, and the Enterprise is located a little to the west of the main ledge on the surface, so that in sinking the shaft on the Enterprise it will strike the main ledge at three to four hundred feet deep.

ESSEX MINING COMPANY.

PIONEER DISTRICT, ARIZONA TERRITORY.

Office, 52 Broadway, New York. A. W. Blair, President; E. B. Booth, Secretary.

FINDLEY GOLD MINING COMPANY OF GEORGIA.

DAHLONEGA, LUMPKINS COUNTY, GEORGIA.

Office of the Company, No. 70 Broadway. Officers of the Company, D. A. Boody, President; W. B. Price, Vice-President; James Francis, Treasurer; Charles A. James, Secretary; Alanson T. Enos, Superintendent; Directors, D. A. Boody, James Francis, W. J. Gelston, Spencer Trask, Wm. B. Price, E. C. Stedman. Capital Stock, \$200,000. No. of Shares, 200,000, of the par value of \$1.00.

The property of the Company consists of 120 acres of land, all mineral bearing, containing large bodies of free quartz ores, yielding from \$1 to \$20 per ton. One 10-stamp steam mill, and one 40-stamp water mill. The Company pay regular dividends of one per cent per month, with every prospect of an increase in the near future, when the new stamps are at work. When certain improvements are completed, more than enough money to pay for which is already in the Treasury, the mills will be able to crush 120 tons of ore per day, giving, as is estimated, a gross yield of \$500 per day, at an expense of not over \$60, including mining and milling expenses, and all incidentals, leaving a net profit per day of \$440, and per month of \$13,800.

The reports of Mr. John C. Randolph and Mr. R. M. Wilson, two able and well-known mining engineers and experts, agree as to the inexhaustible field of ore, as well as to its uniform value. Mr. Wilson says: "The quantity exposed is immense, and there is no doubt but that it extends downwards to any practicable depth. I am satisfied that you will find it containing free gold at least to the level of the Yahoola river, a depth of over 450 feet. This great depth, with veins of such magnitude, guarantee you an almost unlimited quantity of free milling ore, sufficient to keep all the stamps you could conveniently erect, running constantly for years."

FORD CONSOLIDATED GOLD AND SILVER MINING COMPANY OF COLORADO.

MOUNT LINCOLN, PARK COUNTY, COLORADO.

Office, 29 Broadway, New York. Charles K. Bill, President; James Plant, Secretary; James E. Broome, James A. Betts, Charles K. Bill, Geo. L. Hooper, James Plant, W. L. Tompkins, Directors. Listed on New York Mining Board. Capital Stock, \$100,000, in shares of \$10 each. Organized in New York.

GOLDEN FLEECE GOLD AND SILVER MINING COMPANY.

PEAVINE DISTRICT, WASHOE COUNTY, NEVADA.

Office of the Company, No. 17 Broad Street. Principal place of business, Reno, Washoe Co., Nevada. Officers of the Company, T. K. Hymers, President; M. Lippman, Secretary. Bankers at New York, M. & S. Sternberger. Capital Stock, \$800,000. 30,000 Shares at par value of \$10 each.

The location of mine and works of the Golden Fleece G. & S. M. Co. is in Peavine District, Washoe Co., Nevada. The claim is 1,500 feet in length by 600 in width.

GOLDEN GATE MINING COMPANY.

BODIE MINING DISTRICT, CALIFORNIA.

Office, 61 Broadway, New York. J. R. Scupham, President; J. E. McElrath, Secretary; A. W. Havens, B. B. Minor, J. F. Thompson, Directors.

GRANVILLE GOLD COMPANY.

STANLY AND McDOWELL COUNTIES, NORTH CAROLINA.

Incorporated under the Laws of New York. Office of Company, No. 23 Dey Street, New York. F. A. White, President; William Brandreth, Vice President; Gen. Jno. E. Mulford, Treasurer; Edwin H. Mulford, Secretary; R. M. Eames, M. E., Consulting Engineer; Thaddeus Judson, Superintendent. Capital Stock, \$300,000, divided into 300,000 unassessable Shares of par value of \$1 each.

One mine is situated in Stanly County, North Carolina, twenty-three miles south-east from Salisbury, and twelve miles from Albemarle, the county seat of Stanly, and on the bank of the Tadkin River, and is a combined placer and quartz property, seven good veins having been opened, and several hundred acres of good placer ground having been prospected, yielding nuggets of gold of three pounds weight and under.

The other mine is in McDowell county, North Carolina, twelve miles south from Marion Court House on Muddy creek, between Brindle Mountain and the Huntsville range, and consists of 1250 acres of valuable quartz and placer ground, and the ownership of about 1000 inches of water, miners measure. The ore so far worked from these mines has yielded by mill process from \$15 to \$70 per ton; some one has assayed as high as \$600 per ton of 2000 pounds.

GREAT EASTERN GOLD MINING COMPANY OF NEW YORK.

LAWRENCE COUNTY, DAKOTA TERRITORY.

Office, No. 31 Broad Street, New York City. Officers: Thomas L. James, President; James D. Smith, Vice President; Gilbert L. Haight, Treasurer; Silas C. Hay, Secretary; Stewart L. Woodford, Counsel. Hon. Thomas L. James, Postmaster, New York City; Hon. Thomas C. Platt, President Tioga National Bank, Owego; Hon. Stewart L. Woodford, U. S. District Attorney, New York; James D. Smith, Banker, of Jameson, Smith & Cotting, New York; Gilbert L. Haight, Banker, of G. L. & L. Haight, New York; Gen. E. E. Cunningham, Deadwood, Dakota; Silas C. Hay, New York, Directors. Capital Stock, \$300,000. Par Value of Shares, \$1 each. Unassessable.

The property of this company is located on and near Deadwood Creek, about two miles above Deadwood City, in Whitewood Quartz Mining District, Lawrence Co., Dakota Territory. It consists of the Great Eastern Mine, which embraces three mining locations known as the Great Eastern, Golden Rule and Elgin Lodes, together with a 20 stamp mill and mill site. The total area included by these three locations is 1325 feet on the west side, 1125 feet on the east side, 762 feet at the north and 312 feet at the south end. It is located upon the same great zone of ore as the celebrated Homestake Mine, and is regarded by the miners of the Black Hills as being equally valuable.

The ore body thus far developed, and worked, is found in a flat or horizontal vein, varying from three to fifteen feet in thickness and opened by working tunnels on both sides of the hill at six different points, disclosing a continuous body of ore underlying the entire area. A vertical vein 30 to 40 feet wide crosses the south end of the mine. This vein has not been disclosed within the lines of the Great Eastern, but at a distance of 75 feet outside thereof, and on the ground of the Clipper Mine, it has been opened and is at present producing ore of a high grade.

The mill property consists of a twenty-stamp mill and machinery in perfect order, mill house and ore rooms, bed rock drains and well, furnishing an abundant and unfailing supply of water, sufficient to run 60 stamps the entire year, mill site 510 feet long by about 200 feet wide, affording room for extensive wood yards, ore roads, and dumping ground for tailings, and a right in the several ore roads, built from the mill to the Great Eastern and surrounding mines.

The mine is now producing from 30 to 50 tons of ore per day, worth from \$10 to \$15 per ton, and the cost of mining, hauling and milling is about \$5 per ton.

GREEN MOUNTAIN MINING COMPANY.

INDIAN VALLEY, PLUMAS COUNTY, CAL.

Officers of the Company, C. H. Bidwell, Greenville, Cal., President; R. E. Brewster, San Francisco, Cal., Vice-President; T. C. McLeod, 305 Chestnut Street, Phila., Secretary; Belloc & Co., San Francisco, Cal., Treasurer. Directors—H. C. Bidwell, Greenville, Cal.; R. E. Brewster, San Francisco; P. H. Krainer, San Francisco; E. V. Joice, San Francisco. Capital Stock, \$1,250,000. 125,000 Shares of Stock, at \$10 each. C. T. Yerkes, Jr., & Co., 305 Chestnut Street, Philadelphia, Agents for sale of Stock.

The mines belonging to the Green Mountain Mining Company are three in number—the Brilliant, Ruby, and Emerald—and are situated on the westerly side of Indian Valley, Plumas County, California. The aggregate length of the company's claim on the lode is 4350 feet, and the title is perfect. A tract of 160 acres of timber land is connected with the quartz claims, and forms a part of the property of the company. The improvements consist of two quartz mills—one of twenty and the other of twelve stamps—standing side by side, a large commodious boarding house, dwelling houses, blacksmith and carpenter shops, office, dump, ore houses, stables, etc.—all in excellent condition.

The ore vein, at every point opened, shows regular and well defined walls, with a uniform southern dip of about 55 degrees. The ore mills from \$5 to \$10 per ton, at a total cost for mining and milling of \$2.50 per ton. The 32-stamps will crush about fifty tons per day.

This mine has been producing for years, and it is now being worked in such a manner as to ensure good dividends every month. It is not so much a speculation as an investment. Full reports may be obtained by addressing the Philadelphia agents.

The main office of the Company is at 54 Broad Street. L. D. CORTRIGHT, Secretary, and L. P. BAYNE & CO., General Agents.

HORN SILVER MINING COMPANY.

FRISCO, BEAVER COUNTY, UTAH.

Office of the Company, No. 44 Wall Street, New York. Officers of the Company, Charles G. Francklyn, President; Frank G. Brown, Vice-President; William S. Hoyt, Secretary; Allen G. Campbell, Treasurer; Charles G. Francklyn, Frank G. Brown, William S. Hoyt, Allen G. Campbell, Matthew Cullen, D. Ryan, A. Byram, Directors.

The Horn Silver Mining Company, was organized at Salt Lake City, Utah, on the 17th day of February, 1879, under the laws of the Territory, with a capital stock of \$10,000,000, divided into 400,000 shares of the par value of \$25 each. The stock is full paid, unassessable, and entirely free from personal liability.

The property of the company consists of—

1. The Horn Silver Mining Claim, embracing 1,440 feet on the lode by 600 feet wide.
2. The Horn Silver Mill site, in the town of Frisco, 330x660 feet, containing five acres.

Secured by patent from U. S. Government.

3. The Grampian Mill site, 330x660 feet, also in Frisco.
4. A smelting plant consisting of three stacks, with engine, boiler, and other appurtenances.
5. Refining works in Chicago.
6. Certain Iron mines near Frisco, and numerous charcoal kilns.
7. And miscellaneous property.

The Horn Silver Mine is located near Frisco, Beaver County, Utah, 225 south south-west from Salt Lake City. The Utah Southern Railroad, now operated as far as York, 75 miles south of Salt Lake city, will be extended to Frisco during the present season.

The Horn Silver Lode was discovered September 24, 1875, by James Ryan and Samuel Hawkes. The claim was sold February 17, 1876, to A. G. Campbell, Matthew Cullen, Dennis Ryan, and A. Byram, to whom is due the credit of having developed the mine and brought the district to its present state of prosperity. These developments have resulted in proving the vein to a depth of over 280 feet, and about 25,000 tons of ore have been extracted and turned into bullion. Two smelting establishments have been built and successfully operated in Frisco, and refining works established and conducted in Chicago. The town of Frisco now numbers about 1,000 people, all of whom are more or less directly dependent on the Horn Silver Mine.

The Horn Silver is unquestionably the richest silver mine in the world now being worked. In March of the present year (1879), W. A. Hooker, E. M., made a careful survey of ore in sight on the five levels now open, and gave as his estimate 513,000 tons. The average value of the ore, based upon the 25,000 tons reduced, and upon hundreds of assays made, is about \$53.00 per ton, silver, exclusive of lead, giving a total valuation of ore in sight of over \$27,000,000. The estimate of Mr. Henry Cummins, made about the middle of April (1879), when the work of development was somewhat further advanced, places the gross valuation of silver and lead at over \$45,000,000. Both of these gentlemen believe that the ore body will hold its present width in still lower levels, and will increase in richness as depth is attained. In concluding his report Mr. Cummins says:—

“The special advantages of this mine are—

1. The absolute, unquestioned and unquestionable title.
2. Its unexceptionable favorable location, climate and accessibility.
3. The enormous and almost inexhaustible body of rich ore *in sight and measurable*.
4. The accessibility of the ore and the ease and cheapness of extracting it.
5. The certainty, regularity and long continuance of the ore supply.
6. The uniformity of the ore and its unchanging character and value.
7. The entire freedom from gangue rock, waste, material and water.
8. A vigorous, intelligent, experienced, prudent, and thoroughly honest and reliable business management.
9. The marked geological formation of the country, and the position, structure, extent and character of the lode
10. The possible and probable further vast extent and depth of the ore body.”

Mr. Hooker, in concluding his able and exhaustive report upon the mine, says that the lode may be traced for more than two miles on the surface, while his estimate of 513,000 tons in sight, covers only

300 feet on the lode, and a total depth of 282 feet. He adds, "The continuance of the vein beyond cannot be doubted, and there is every reason to anticipate that this amount of ore as estimated, will be many times multiplied before the deposit is exhausted." The exploitation has been judiciously done, and the mine is in every way in excellent condition.

The vein is a contact one, having for its hanging wall quartzites and dolomites, and for its foot wall trachyte. It has an average width of 50 feet—in many places is cross cut over 81 feet. All the material between the walls is ore, and goes to the smelter. There is no waste dump at the mine.

About two-thirds of the ore carries silver and lead, averaging 45 per cent lead, and 53 oz. in silver in upper levels, the lower levels average 83 oz. silver, and about same in lead. The balance say one-third is free milling ore, running from 200 ounces way into the thousand ounces. The ores are free to an unusual degree of base matter, and are easily worked. The refined silver and lead being almost pure.

HUKILL GOLD AND SILVER MINING COMPANY OF NEW YORK.

IDAHO SPRINGS, COLORADO.

Office of the Company, No. 17 Broad Street, New York. Officers of the Company, J. L. Brownell, President; S. V. White, Treasurer; J. S. Delano, Superintendent.

This Company owns the Hukill and Whale Mines, together with a large Placer Mine of some 13 acres, on which is located a large mill 285 feet in length by 70 feet in width. The location of the property cannot easily be excelled. It lies directly on the Colorado Central Railroad, which runs a switch into the Company's mill. The Company owns on the Whale and Hukill, 3,188 feet of lode, of which about 1600 feet are thoroughly developed. The present Company was organized in March, 1877, and has paid 21 dividends of one per cent each. The condition of the property at present is excellent and promising.

INDICATOR MINING COMPANY.

FRESNO COUNTY, CALIFORNIA.

Office of the Company, Room 10, Cosmopolitan Hotel, San Francisco. Officers of the Company, Col. C. L. Weller, President Bank of California, Treasurer; James Newlands, Secretary. Capital Stock, \$5,000,000. 100,000 Shares, \$50 each.

The property consists of a number of free gold quartz mines, on Fine Gold Gulch and the Fresno river about forty miles west of the Mammoth Mine in Lake District, and from twenty-five to thirty-five miles east of Madera and the Southern Pacific Railroad. Is but fourteen hours' ride by rail and stage from San Francisco. By its developments it will undoubtedly be one of the most extensive and valuable mining interests placed East. Mr. W. B. Murdoch is one of the largest stockholders in the Company.

KING'S MOUNTAIN MINING COMPANY.

NEAR CHARLOTTE, NORTH CAROLINA.

Offices of the Company, 70 Broadway, New York. Officers of the Company, Hon. A. G. Curtin, President; Wm. F. Buckley, Vice-President; W. S. Nichols, Secretary; Arthur Macy, Mine Superintendent; Spencer Trask and Francis, Bankers, New York, Treasurer. Directors: Hon. A. G. Curtin, Ex-Governor of Pennsylvania, Bellefonte, Penn'a.; W. F. Buckley, Treasurer St. Louis & San Francisco Railroad; Geo. F. Stone, New York; B. K. Jamison, Banker, Philadelphia; C. R. Early, Pennsylvania; Hon. N. Horatio Twombly, New York City; W. S. Nichols, W. S. Nichols & Co., Bankers, New York; Fred. Taylor, President Burlington & C. R. R., New York; Hon. Gilbert C. Walker, M. C., Ex-Governor of Virginia.

The King's Mountain Mining Company was organized on the 5th day of September, 1877, under the laws of the State of New York, with a capital stock of 120,000 shares, at a par value of \$10 per share, stock unassessable. The company owns in fee, clear of all incumbrance, about 580 acres of land. The mine was discovered in 1834, and for a period of nearly thirty years was worked by the old "Carolina method." In 1860, it fell into the hands of Commodore Stockton, of New Jersey, who began two shafts on it—the first deep shafts ever sunk on the property. Before reaching a sufficient depth to penetrate the hanging wall into the deposit, the war broke out and the property was confiscated. Up to the time the mine passed into the hands of the present company, five additional shafts were sunk by different owners, and at the 110 and 210 foot levels of the Briggs shaft, considerable ore was stoped and breasted, over \$150,000 having been taken out in eleven months. The Dorsey shaft also raised considerable ore from the 113 foot level. These works were all badly planned and badly timbered, and have been abandoned.

The present company has sunk a new shaft 300 feet. From this adrift has been driven 135 feet which cuts the vein, which at this date (May 15, 1879) is already fifteen feet wide, the foot wall not having yet been reached, Assays run all the way from \$15 to \$402 per ton. The forty-stamp mill has been reconstructed, and will work the ore to near its assay value. Other machinery, improvements and supply depots have been added, including several new engines, hoisting works, pumps, assay office, a fully supplied store, buildings, miners' houses, &c.

LACROSSE MINING COMPANY.

NEVADA DISTRICT, GILPIN COUNTY, COLORADO.

New York Office, 50 William Street. John Van Nest, President; Henry Smith, Secretary; Albert F. Day, John H. Small, A. H. Ward, Henry S. Smith, John Van Nest, Directors. Listed on New York Mining Stock Exchange.

LEADVILLE MINING COMPANY.

Incorporated December 26th, 1878, under the Laws of New York. Office of the Company, No. 57 Broadway. Officers of the Company, A. W. Gill, President; J. S. Lockwood, Secretary; S. B. Elkins, A. W. Gill, W. S. Nichols, E. B. Dorsey, Robert Sewell, Vanderbilt Allen, Geo. R. Blanchard, Trustees. Capital Stock, \$2,000,000. 200,000 Shares, par value \$10. Dividends declared payable April 1, 1879, \$20,000; May 7, 1879, \$20,000, and June 7, \$20,000.

This company owns all of the Carbonate mine, and an undivided half of the Shamrock mine, situated in Leadville, Colorado, both claims 1500 feet long by 300 feet wide, both held under the United States patent, being the oldest location and patent in their vicinity.

These mines were discovered and located by Messrs Halleck and Cooper, who worked them in a very rude and primitive manner. From the carbonate alone, they took out previous to the sale to the present company, January 14, 1879, about \$200,000; all this from a very small part of the claim.

The only work on the Shamrock has been confined to a shaft some 1500 feet to the south-east of the workings of the Carbonate. This shaft produced ore that sold for \$750 per ton, being the richest produced by any mine in Leadville, as this 1500 feet of vein is entirely unexplored, with \$750 ore at one end, and the large yield of the carbonate workings (over \$275,000 in all to date) at the other end, the owners naturally expect very large results when they explore this piece of virgin ground.

With the exception of the Shamrock, the Carbonate mine has produced the richest ore of any mine in Leadville, the first class assaying over 350 ounces per ton; second class 200 ounces; third class 100 ounces.

This carbonate vein has been thoroughly tested in the Henrietta, Morning Star, Evening Star Waterloo Crescent, Yankee Doodle, Carbonate and Shamrock, and has been found to improve in quality and quantity as depth is attained; in the Morning Star, the upper workings scarcely paid, while at the depth of 600 feet on the incline, they found twelve feet of 150 ounce ore, being by far the largest and richest body ever found in the mine.

The Carbonate has eight feet of first class ore on the fourth level north (at present the deepest workings in the mine), this is also the largest and richest ever found in the mine. These facts are very encouraging, as they show that the vein not only continues in depth, but actually improves in quality and quantity.

The following is the geological description of the formation, as given by the New York *Graphic's* correspondent:

The ore is found in what is known in geology as a "bedded vein;" that is, a vein lying between two different strata. In this case it is limestone, more or less silicious underneath, with porphyritic trachyte on top.

This ore bed or vein, which varies from five to thirty-five feet in thickness, consists principally of oxide of iron, carbonate of lead and silver, and dips about 25 degrees from the horizontal to the east into the mountain. It was probably formed in the same manner as a coal vein; that is, the limestone was first deposited, then on top of this the iron, silver, and lead ores, and after these the trachyte on top of all. Subsequently all these layers were tilted up by some movement of nature to an angle of 25 degrees. As coal veins have been found to be very continuous and uniform, and this vein has been formed in the same way, it is natural to suppose that it will be equally continuous and extensive.

LITTLE PITTSBURG CONSOLIDATED MINING COMPANY.

LEADVILLE, COLORADO.

Incorporated May 5, 1879, under the laws of the State of New York. Offices of the Company, 47 & 49 Boreel Building, 115 Broadway, New York. Officers of the Company, Jerome B. Chaffee, President; George C. Lyman, Secretary. Directors: Jerome B. Chaffee, H. A. W. Tabor, John N. A. Griswold, Henry Howard, Henry Hayemeyer, Charles L. Perkins, Charles C. Dodge, James L. Soutter, M. L. Potter, I. C. Babcock, James D. Smith, A. J. Dam and D. H. Moffat, Jr. Capital 200,000 Shares, \$100 each—\$20,000,000.

Little Pittsburg Consolidated Mining Company, consists of Little Pittsburg, New Discovery, Winnimuck and Dives, all situated on Fryer Hill, Leadville, Colorado. Ore was discovered in the New Discovery in April, 1878. Soon after that the other mines were located, and all commenced to extract ore in the summer and fall. In order to settle pending litigation between these mines, all were consolidated in November, 1878, this gives them an undisputed title to four locations, of these the New Discovery and Little Pittsburg have obtained U. S. patents. The New Discovery is also the oldest location on Fryer Hill.

Since the consolidation in November the mines have been worked in a thorough miner-like manner with reference to exploring ground and not extracting ore, the result has been to show large bodies of rich ore that can be taken out whenever the owners desire. The ore produced from this work from the discovery of the mines to April 30th, 1879:

Sold for over.....	\$1,600,000
Total expenses for same period.....	160,000
Net profit for same period.....	\$1,440,000

or about ten per cent. of the gross yield which is larger profit than that ever produced by any other silver mines in the United States. The trustees expect to declare monthly dividends of \$100,000, and extra dividends as the earnings of the company will justify after the completion of the railroads to Leadville the coming summer.

LOLA MINING COMPANY.

GLOBE DISTRICT, MARICOPA COUNTY, ARIZONA.

Officers of the Company, L. L. Robinson, President; D. F. Verdenal, Secretary; Wm. P. Miller, Superintendent; L. L. Robinson, Robert Sherwood, J. W. Gashwiler, A. Forbes and C. Grunell, Trustees.

The Lola Mine is located in Globe Mining District, Maricopa County, Arizona. It is 1500 feet long by 600 feet wide, and is on the same vein or lode of the Silver Nugget Mine, and adjoins it on the

southwest— There is no question about the Silver Nugget and Lola Mines being on the same vein. The Lola property was incorporated in California. There has been but little work done on the mine—a few tons of the ore brought to San Francisco and sold for \$5,080 per ton, being precisely the same as the Silver Nugget, out of which was shipped to and sold in San Francisco, about 40 tons, which netted a little over \$82,000, or over \$2,000 a ton. There is both wood and water near the mine for milling purposes, and it is the intention of the company to build a mill on the mine this summer. The ledge is full three feet wide. Of course only a small portion of the ore will go up into the thousands, but experts say the whole ledge will pay \$150 per ton, and the ore easily mined and milled.

Mr. D. G. Chilson, discoverer and locator of the Silver Nugget Mine, was born in Burleson Co., Texas, in 1850. Soon afterwards his father moved to the western part of the State, where he was elected Judge, a position which he held until 1868. During these years Judge Chilson's time was about equally divided between rendering judicial decisions, practicing law, and the inaugurating and carrying out of measures to protect his family and neighbors from the hostile Camanche Indians. In 1868, Judge Chilson, with his wife and six children, started across the plains for California. The journey was attended with the usual hardships and excitements, but without any serious disaster, until near Fort Cummings, in New Mexico. Here the Indians made a raid upon them, stealing all their cattle and horses, and leaving them afoot and alone, with their destination a thousand miles ahead, and civilization a thousand miles behind them. This was enough to try the stoutest heart; but the Judge was ably seconded by his heroic wife, and they pushed on, arriving in California, after innumerable trials and hardships, in 1869. In 1871, at the age of 21 years, Mr. D. G. Chilson, started for the mountains and deserts of Arizona, a territory then comparatively unknown and unexplored, over which bands of fierce Apaches roamed at will, butchering mercilessly all pale faces who came within reach of their arrows and tomahawks. With his pick and shovel, blankets, and primitive apparatus for testing ores, young Chilson boldly entered the Indian country, and began his prospect tour. Over the hills and across the deserts, with the hot sun scorching and blistering him by day, and the blue sky his covering by night; with Indians lurking on his trail, vipers hissing in his pathway, centipedes and tarantulas crawling around him, he pushed on for the "land of Ophir." A well knit frame, a sound constitution, an immense amount of pluck and reasonably good luck carried him safely through dangers and hair-breadth escapes; and earth in numerous instances, opened to his view her treasure vaults. He continued prospecting for five years, opening a number of rich mines and working them to good profit. Finally his efforts were rewarded in the discovery of the famous Silver Nugget Mine, in Maricopa county. Years of experience in Arizona mining districts satisfied him that at last he had found what he wanted. Hiring half a dozen miners he went to work with his usual energy and determination, and in six years he had taken out and shipped to San Francisco forty tons of ore which yielded him over \$80,000; besides placing on the dumps ready for the custom mills over \$65,000 worth of second grade ore, averaging \$65 per ton. This would have contented most young men, but Mr. Chilson remembered the trials and struggles of his father and mother in their pilgrimage to California. And so he went down into one of the beautiful valleys of Los Angeles county, where the sun shines, and the birds sing, and the flowers bloom all the year round; and where the warm and delicious atmosphere is tempered by the ocean breeze. Here he bought a home for his parents, and here they are happily settled for life. And while the Judge and his wife, and the younger members of the family, are wandering amid the groves of orange, and lime, and olive, and almond, or sitting in dreamy content under the vine-covered arbors, Mr. Chilson has gathered up some of the trophies of his years on the frontier, and brought them to the city of New York. In company with Mr. Minear and several other capitalists he has incorporated the "Silver Nugget," and its stocks are now on the market.

LONDON MINING AND MILLING COMPANY.

LYONS COUNTY, NEVADA.

Office, 60 Broadway, New York. Edwin Sherman, President; A. L. Thompson, Secretary; Samuel Purdy, E. Sprout, Geo. F. Sharp, Samuel Middleton, Wm. C. Pease, Edwin Sherman, Wm. Euclid Young, A. L. Thompson, Geo. A. Eaton, Directors. Organized in New York.

LUCERNE MINING COMPANY.

GILPIN AND CLEAR CREEK COUNTIES, COLORADO.

Office, 60 Broadway, New York. John Albertus, President; Charles F. Roper, Secretary and Treasurer; John Albertus, Edward W. Lambert, James H. Langford, Charles F. Heywood, Charles F. Roper, Directors. Capital Stock, 500,000 shares of \$10 each. Organized under the laws of New York.

MARIPOSA LAND AND MINING COMPANY.

MARIPOSA'S ESTATE, NEAR COUNTY, CALIFORNIA.

Office, 9 Nassau Street, New York. Solomon Heydenfeldt, President; Leander Leavitt, Secretary; S. Heydenfeldt, Mark Brumagin, John W. Brumagin, J. W. Raymond, E. W. Burr, Directors. Listed on San Francisco Boards and New York Mining Board.

MINERAL BELT TUNNEL COMPANY.

BLACK HILLS, DAKOTA.

Office, 61 Broadway, Rooms 23 and 24. President, J. Maslin Cooper; Secretary, J. L. Thompson; Directors, J. M. Cooper, George H. Treacy, J. L. Thompson, Wm. H. Andrews, R. M. Kello. No. of feet, 1,500; No. of shares, 100,000, of the par value of \$10 per share.

MINERAL POINT TUNNEL COMPANY.

SAN JUAN COUNTY, COLORADO.

Organized under the laws of the State of New York. Offices of the Company, 57 Broadway. Officers of the Company, F. J. Pratt, President; J. F. Harrison, Vice-President; E. C. Hancock, Secretary; E. Salomon, Treasurer; F. J. Pratt, Greenfield, Mass; J. F. Harrison, New York; E. C. Hancock, New York; E. Salomon, New York; Chris. Mehle, New Orleans, Trustees. Par value of Shares \$10.00.

This company was organized for the purpose of developing the series of great true fissure veins, nearly fifty in number, which traverse Mineral Point Mountain, the celebrated mining centre of San Juan region of Colorado. The tunnel runs a distance of 7000 feet from the Animas to the Poughkeepsie gulch, at an extreme surface depth of about 1400 feet. Work was commenced in October, 1877, and has since been prosecuted without interruption. The best machinery and mechanical appliances are employed, and on May 1, 1879, a length of over 600 feet had been reached, cutting several valuable veins, assaying high, both in gold and silver. The richest mines are located in the mountain, which has been pronounced by the leading mineralogists, to be the "back bone" of the silver mining region.

MONTEZUMA SILVER MINING COMPANY.

MONTEZUMA MINING DISTRICT, COLORADO.

Office of the Company, No. 52 Broadway, New York. Officers of the Company, Chas. G. Francklyn, New York, President; W. S. Hoyt, New York, Vice-President; Daniel T. Woden, New York, Treasurer; Edward T. Bradford, New York, Secretary; Geo. Teale, Montezuma, Superintendent. Capital Stock, \$7,500,000, divided into 75,000 Shares of the par value of \$100 each.

The property of the Montezuma Silver Mining Company consists of eleven lodes or veins of silver-bearing ore, traversing the sides of the Glacier and Teller mountains, aggregating 11,500 lineal feet, as follows: "Chatauqua," 2100 feet, "Danube," 800; "Sciota," 750; "Itasca," 800; "Little Emma," 750; "No Name," 800; "General Teller," 800; "Dunkirk," 800; "Erie," 800; "Radical," 1600; and "Radical, Jr.," 1500 feet;—located in Montezuma Mining District, Summit County, Colorado, twenty miles from Georgetown, and accessible within a few miles by several lines of railroads; one, the Colorado Central, to pass directly through the district. The Company also has four good mill sites, and an abundance of wood and water.

This property has been examined and reported upon by Commodore Decatur and R. L. Martin, two of the oldest and most experienced miners of Colorado; by R. O. Old, an English geologist and mining engineer; by W. A. Hooker, E.M.; by Prof. J. H. McChesney, formerly of the State Geological Survey of Illinois, and others, all of whom are unreservedly endorsed by J. S. Newberry, Professor of Geology, School of Mines, Columbia College, New York. The result of their examination satisfied them of the true fissure character of the veins, as well as of their great magnitude, richness and permanency; and that four of them (the only ones developed to any considerable extent)—the "Chatauqua," "Radical," "General Teller" and "Erie"—rank among the largest silver mines known. Prof. Newberry says: "The specimens of ore, the reports of the gentlemen mentioned above, and my knowledge of the ore deposits of the region where your property lies, leave no room for doubt in my mind that your mineral lodes are true fissure veins, the repositories of the richest and most extensive bodies of silver ore known."

The plan of development of the "Chatauqua" Mine has been to sink a shaft in the lode to a depth of 200 feet until it reaches 600 feet intersecting it at that depth with a tunnel from the side of the hill. In sinking the shaft the vein gradually increased in width and richness, and an average of six tons per foot (the shaft being 6x10 feet) of ore was placed on the dumps. This ore not only assayed \$118.72 per ton, but the assay value was fully verified by actual sales of the ore and by mill runs. In less than 100 feet the vein had widened from 14 inches at the top to 4½ feet at the bottom of the shaft. Sacks of ore had been hoisted running as high as \$720 to the ton, while many specimens had been picked up containing from 2000 oz. to 15,000 oz. per ton.

The "Radical" Mine, located across Deer Creek Valley and opposite the "Chatauqua," is being developed by sinking a shaft 235 feet deep and running four levels each 100 feet in length. The ore taken from this shaft (six tons per foot) and from the levels averages 60 oz. of silver and 60 per ct. (1200 pounds) lead per ton, the cash value of which at Georgetown is \$66 per ton. There is now in sight in the Radical Mine over one million dollars' worth of ore.

The Mine is fully equipped with improved machinery, and is now being extensively operated. A concentrating mill is in course of construction.

MOOSE SILVER MINING COMPANY.

MOUNT BROSS, PARK COUNTY, COLORADO.

Office of the Company, No. 57 Broadway, New York. Officers of the Company, D. B. Allen, President; C. M. Stead, Vice-President; Harry Allen, Secretary and Treasurer; Jacob Houghton, Superintendent of Mine; D. B. Allen, John McNab, A. W. Gill, Harry Allen, C. M. Stead, Directors. Capital Stock, \$2,000,000. 200,000 Shares of \$10 each. Unassessable.

The mining estate of the Moose Mining Company is one of the largest connected and consolidated tracts of mining lands in the State of Colorado or in the United States. The connected tract comprises 9 claims of 50 feet width each, under the old mining law, viz.: Moose, Baker, Silver Star, Hoosier, Alps, Dwight, Dudley, Gill and Bross; and 14 of 300 feet width each under the new mining law, viz.: Tunnel, Ocean Wave, Phillip, Captain Plummer, Belle-Gill, Julia, McNab, Highland, Emma, Addie, Mary, Dora, Sarah, and Annie. The four last named claims having been added to the estate since the present management took charge of the property, and cover the portion of land on the top of Mount Bross. These consolidated claims cover 143 acres.

In addition to these are two claims (Nabob and Mount Lion, about 20 acres) that are distant about 1000 feet from any of the other claims, which are also the property of the company. The con-

solidation of these claims has been the work of six or seven years and adds immensely to the value of the property. These claims cover the higher portion of Mount Bross, Park County, Colorado. The company also owns the Hunter claim, which is situated some distance from the Moose on the spur of Mount Silverheels, and is true fissure vein. The company also owns one hundred and sixty acres of land in the Platte River Valley, about four miles southeasterly from the mine, which is the site of the village of Dudley, and where the office and reduction works of the company are situated.

This property has been worked for upwards of six years; during that time less than two acres have been mined, and over \$1,500,000 worth of silver ore taken out. The Superintendent says: "So far as the ore mined up to the present time is concerned, I consider that it has been, and is now, being mined from what may properly be called one run of ore with its side-pockets, feeders and strings. A proper extension of tunnels into the mountain in search of new runs of ore has not heretofore been prosecuted. The explorations have been almost entirely confined to the single run of ore. The workings have almost entirely confined to the single run of ore. The workings have been from the south side of the Gulch, between Mts. Bross and Lincoln, and southerly by a system of short tunnels into Mt. Bross. What we now have before us is to press explorations by drifts, and with the drilling machine southerly, where other and valuable runs of ore exist. We are now driving three of these drifts, and one of them (the Gill) is beginning to show a decided change for the better in the way of mineralized rock—less than one-half mile southeasterly from our openings rich bodies of ore are being mined, and that there are intermediate bodies between the two only accords with facts that are well known and established in reference to formations of similar character."

The Denver & South Park Railroad Company have just completed their line from Denver through to Hall's Gulch, which is thirty-seven miles from the mine, and they will further extend it by the first of August. This will be of great saving to the Company in the cost of transportation.

MUSK OX GOLD AND SILVER MINING COMPANY OF COLORADO.

MOUNT LINCOLN, PARK COUNTY, COLORADO.

Office 29 Broadway, New York. Charles K. Bill, President; James Plant, Secretary; Charles K. Bill, Jonas A. Molander, Samuel S. Wood, Jr., E. P. Fowler, Alex. R. Chisholm Vanderweile, Directors. Listed on New York Mining Board. Capital Stock, 50,000 shares of \$10 each. Organized in New York.

NEW PHILADELPHIA SILVER MINING COMPANY.

AUGUSTA MINING DISTRICT, NYE COUNTY, NEVADA.

Office, 33 Broad Street, New York. George D. Hyde, President; C. Theo. Liebold, Vice-President; W. G. Smith, Treasurer; Alfred Kimber, Secretary; George D. Hyde, W. G. Smith, C. Theo. Liebold, Alfred Kimber, N. E. Paine, H. A. Hurlburt, Jr., Harvey Durand, John McGinnis, Jr., J. T. Cook, Directors. Capital Stock \$150,000, of the par value of \$10 each.

PACIFIC SILVER MINE.

CHERRY CREEK MINING DISTRICT, WHITE PINE COUNTY, NEVADA.

This is a property of great promise, having already produced about \$100,000 by very superficial working, and has all the geological evidences of being a true fissure vein that will hold out to great depth. It is situated in a very favorable formation of porphyry, this being the formation in which many of the best mines of the world occur.

The ledge has a northerly and southerly course, with an average width of twelve feet. The ores on the surface were chlorides, but as depth was attained they changed to sulphurets, a good indication of permanence. The ores worked varied from seventy dollars per ton to \$146 per ton, were "free milling" in character, yielding upwards of ninety per cent of their fire assay, and the bullion was 940 fine.

The claim is 1250 feet long by 600 feet in width, and all the necessary steps have been taken to secure a United States patent.

Cherry Creek mining district is well wooded and watered, has telegraphic communications, and is connected with the Central Pacific Railroad, and the Eureka and Palisades Narrow Gauge Railroad by good wagon roads.

There are several mills in the district, and a good mill site with living water near the mine.

The mine is opened by a tunnel 400 feet long, about 300 feet of which is in the vein, and the ore that has been worked was stoped from above the tunnel level. About midway in the tunnel a winze has been sunk sixty feet, developing good ore at that depth.

The mine has a good boarding house, black-smith shop, mining cars, tools, &c.

The "Star" mine in the same district is producing about \$50,000 per month, and the Pacific mine is sufficiently opened to make it evident to any mining expert that by vigorous, proper working, it can be made to pay handsome dividends in a few months.

PENOBSCOT AND SNOWDRIFT CONSOLIDATED MINING COMPANY.

VESTAL, MONTANA.

Incorporated under the Laws of the State of Montana. Office of the Company, No. 30 Pine Street. Officers of the Company, William B. Frue, President; Spencer Trask, Vice-President; R. H. Rickard, Secretary and Treasurer. Directors: William B. Frue, Spencer Trask, Geo. A. Osgood, Joseph L. Gay, Nathan S. Vestal, R. H. Rickard, Jay A. Hubbell. Annual Meeting, First Monday in November. Capital Stock, \$500,000. No. of Shares, 100,000, at \$5 per Share. Stock Unassessable.

The Penobscot and Snowdrift Consolidated Mining Company was incorporated August, 1878. Its property is located at Vestal, Montana, and consists of 3000 feet in length on the vein by 600 feet in

width; with a 40-stamp mill, hoisting works, and the usual machinery, shops, houses, &c., of an active and prosperous mine. The mill, and also an astrara, are erected on 160 acres of woodland owned by the Company and lying contiguous to the mine, and are connected by a tramway for the transfer of ore. The mine is opened to the depth of 200 feet, by two shafts, and along the ledge, by drifts, for a distance of 700 feet. The vein varies in width from ten to eighteen feet, and the assay value of the ore from 1 oz. to 2 oz. per ton, in gold. The well-known Mining Engineer, Mr. John C. F. Randolph, in concluding an elaborate report on the mine, dated September, 1878, says: "My belief is that the ore already developed, making all deductions for mining and milling, greatly exceeds in value the price paid for the whole property and its present capitalization." The bullion production, since November 12, 1878, aggregates \$109,784.13. A correspondent of the *Butte Miner*, Montana, after visiting the various levels, says: "There is enough ore in sight at this stage of development to keep a 40-stamp mill constantly at work for two years and pay the purchase price of the mine many times over. What this great mine will be one year hence, should its developments match that of the past year, is beyond our conjecture."

PLUMAS NATIONAL QUARTZ MINING COMPANY.

PLUMAS COUNTY, CALIFORNIA.

General Office, Greenville, California; Transfer Office, 54 Broad Street, New York. Officers of the Company, H. C. Bradwell, President, H. J. Rogers, Secretary; G. M. Perine & Company, Treasurer; H. C. Bidwell, Superintendent; C. W. Reed, Ivan Prawattain, W. H. Guion, H. C. Bidwell, H. J. Rogers, Trustees. Number of Shares, 100,000, \$10.00 each. Dividends paid, 16. Total amount \$124,240.00. Stock has never been assessed. Dividends paid monthly at New York Office. Annual meeting, second Tuesday in May.

Mine is situated 6 miles from Greenville. Developments show a true fissure containing a fine pay chute from 5 to 9 feet in width, extending 400 feet along the vein. Vein extends through company's claim some 1800 feet beyond and will undoubtedly be found to contain other pay chimneys. Mine is worked through tunnels exclusively. Sufficient ore is now developed to supply present 30 stamp mill 5 years. Company also owns a large tract of timber land, water privilege, placer claims, and a partially developed quartz claim adjoining.

POLAR STAR GOLD AND SILVER MINING COMPANY.

DEMOCRAT, MOUNT CLEAR COUNTY, COLORADO.

Office 43 Pine Street, New York. A. H. King, President; W. C. Boone, Secretary.

ROCKER SILVER MINING COMPANY.

BINGHAMTON DISTRICT, MONTANO.

Office of the Company, No. 33 Broad Street, New York. Officers of the company, Charles L. Wright, President; Charles Burnham, Secretary and Treasurer; J. T. Connor, Superintendent; Charles L. Wright, New York; Cyrus Strong, President of Broome County National Bank, Binghamton, New York; Robert M. Hagan, Binghamton, New York; Adam H. Ward, Erie Railroad, New York; Cuas. Burnham, New Jersey, Directors. Capital \$500,000, divided into 100,000 Shares. Par value \$5 each. Stock Non-assessable. Registered in the Farmers' Loan and Trust Company. 20,000 Shares in Treasury.

The Rocker Silver Mining Company is organized under the laws of the State of New York. Its property consists of the Rocker Mine, 600 feet wide, by 1500 feet along the lode, covered by United States patent. The mine is situated in Binghamton district, Jefferson County, Montano, 21 miles from Helena, the territorial capital; 15 miles west of the thriving town of Jefferson and 9 miles from the reduction and smelting works of the Montano Company.

The lode is an immense true fissure vein, from 20 to 40 feet in width, dipping 75 degrees northerly. The mine was found by placer miners working the surface for gold, and it was so worked for several years before the discovery was made that they were upon a great silver lode.

The Rocker Mine is being opened by a tunnel, now in 245 feet, with cross cuts, making in the aggregate 450 feet of levels, with good ore exposed on every side. It is in contemplation to sink a shaft 200 feet east of the mouth of the tunnel, and erect concentrating works.

The prospective value of the Rocker lode is very great. Eighteen samples of the ore, assayed by Professor Starritt, of Jefferson City, shows an average value of \$237.36 per ton of ore in silver. There is now in sight over 20,000 tons of this ore, and at least 70,000 tons will be uncovered by the drifts, cross-cuts and tunnel extension now in progress.

From the carefully prepared report of Geo. B. Foote, Mining Engineer and United States Mineral Department Surveyor, and from the weekly reports of Mr. Connor, the efficient Superintendent, the management consider the mine second to none, but the famous Comstock lode. Mr. Connor assures the company that he has now on the dumps 1000 tons of ore and 100 tons of selected ore, in the mouth of the tunnel, ready to ship, and several thousand tons more ready to be taken out; and that as soon as the wagon road is completed to the Montana Company's smelters, he can pay large monthly dividends.

Subscription books are now open at the office, No. 33 Broad street, and all interested are invited to call and examine reports.

RUSSIA SILVER MINING COMPANY.

MOUNT LINCOLN, PARK COUNTY, COLORADO.

Offices of the Company, No. 38 Broadway, New York, and Alma, Colorado. Officers of the Company, Americus L. Pogue, President; E. G. Haight, Secretary. Capital Stock, \$600,000. Shares, \$10. Not Assessable. Area, 1300 x 300 feet. About 10 acres.

This property has yielded, since 1875, about \$200,000, and has, out of its profits, constructed all its

improvements, which consist of boarding and ore houses, shops, roads, etc. Ore runs from 60 to 300 ounces silver, and one-half to one ounce gold per ton, and occurs in bonanzas, in limestone formation. It is free from debt, holds U. S. Patents and is listed at the New York Mining Stock Exchange.

SEATON MINING COMPANY.

IDAHO SPRINGS, COLORADO.

Office, 62 Broadway, New York. Robert T. Ford, President; H. H. Duncklee, Secretary; Robert T. Ford, Hobart R. Griffin, Louis A. Da Cunha, W. R. Roberts, Directors.

SHAMROCK MINING COMPANY.

Incorporated May 7th, 1879, under the Laws of New York. Office, No. 57 Broadway, New York. Capital stock 200,000 shares at \$10, \$2,000,000. Trustees, Hon. John P. Jones, J. B. Chaffee, S. B. Elkins, Robert Sewell, E. B. Dorsey, A. W. Gill, and Vanderbilt Allen; Secretary, J. S. Lockwood.

This company has been formed for purchasing the Shamrock Mine, at Leadville, Colorado, from the Leadville Mining Company and Thomas Wells.

This mine is situated to the southeast and adjoining the celebrated Carbonate Mine and on the same vein. Claim, 1500 by 300 feet; title, U. S. Patent. The only work done so far is a shaft about 100 feet deep, which produced ore that sold for \$750 per ton, being the richest ore produced by any mine in Leadville; with this exception, the vein is entirely unexplored. The company will immediately start thorough and systematic mining on this mine, which cannot fail of being very profitable, as this vein has been worked with great profit in the Henrietta, Morning Star, Evening Star, Waterloo, Yankee Doodle and Carbonate Mines, and the ore has been found always to get richer and more abundant as depth is gained.

SILVER NUGGET MINING AND MILLING COMPANY.

GLOBE DISTRICT, MARICOPA COUNTY, ARIZONA.

Incorporated under the Laws of the State of New York. Office of the Company, No. 34 New Street, (Room 29), New York. Officers of the Company, Charles G. Rodgers, President; W. L. Woods, Vice-President; Edward Webb, Secretary; D. G. Chilson, Superintendent; General Charles Rodgers, W. L. Woods, D. G. Chilson, A. F. Hill, A. P. Minear, Trustees. Capital Stock, \$1,000,000, divided into 100,000 Shares of the par value of \$10 per Share. Stock Unassessable.

The Silver Nugget mine was discovered and located by D. G. Chilson, in 1876. It is situated in Globe District, Maricopa County, Arizona, twelve miles easterly from Globe City, and seventy-five miles northwest of Tucson. The mine adjoins the celebrated "McMorris," and is in the district rendered famous by the "Stonewall Jackson" and "Little Mac." The ores are chlorides, sulphurets and horm silver, and their richness is almost fabulous. Mr. Chilson shipped to San Francisco a little over forty tons—81,191 pounds, which yielded him \$82,715.74, or over \$2000 per ton. There are now on the dumps 1000 tons of ore, extracted while sinking shafts and running drifts and cross-cuts, that will average \$65 to the ton, or \$65,000 worth of ore raised and ready for milling; while there are thousands of tons in sight on the various levels, that will average \$150 to the ton. This ore has been raised, and these vast blocks laid bare, cubed, and refined during the last six months, by six miners working under the direction of their thoroughly accomplished superintendent. Eight shafts have been sunk on the property, in depth from twenty to ninety feet, all in high grade ore. The width of the ledge has not yet been ascertained, as the shafts are all on the hanging wall and the foot wall has not yet been reached. Enough is known, however, to warrant the belief on the part of the management, based upon the reports of the most skillful engineers and experts and the most accomplished geologists, that the vein is a true fissure, that it widens and increases as depth is attained, and that the mine is one of the richest ever opened in Arizona. In support of which belief they ask the public to call in at their New York office, examine the ore, consult the maps, and read the reports.

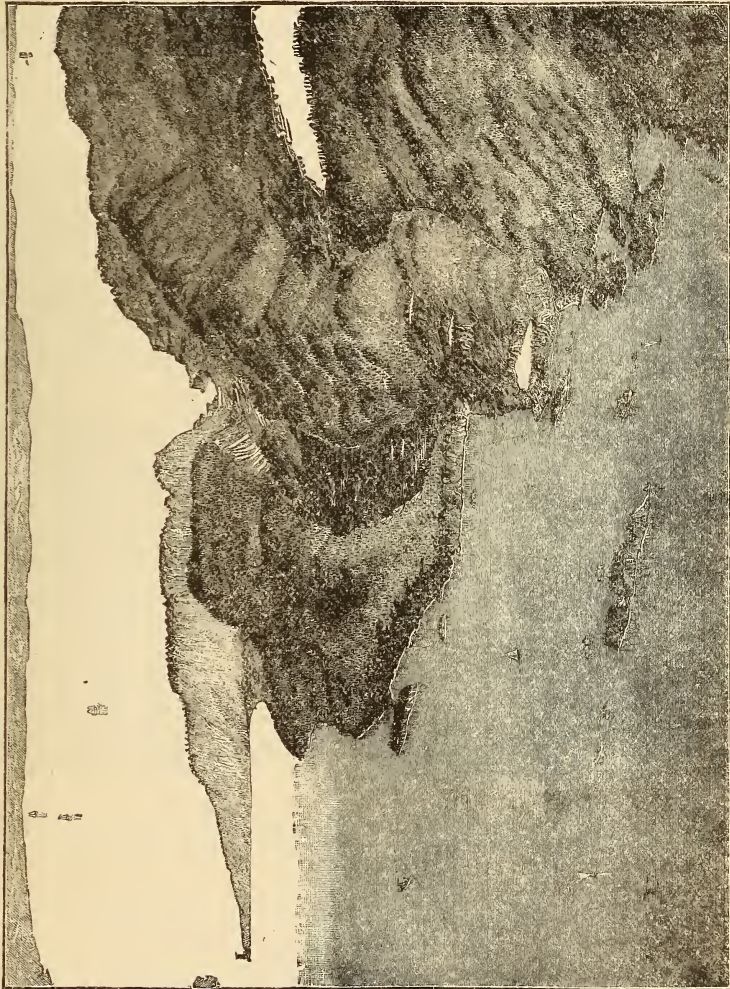
In this connection we will be pardoned for introducing a few remarks in regard to the discoverer of the mine, and also the gentleman who is managing director of the mine.

Mr. A. P. Minear, managing director in New York, was born in 1828, upon a farm in West Virginia which had been settled by his great grandfather when that was an Indian country, and upon which his father—now eighty years old—still lives. In 1849 Mr. Minear went to California. Arriving in San Francisco, he engaged in the lumber trade and soon accumulated a fortune. He moved to Oregon in 1854, which was the luckiest move he ever made in his life, for there he met, wooed and won for his wife the accomplished Miss Moody—a lady who has proved herself, in prosperity and in adversity, through clouds and sunshine, when stocks were up and when stocks were down, a true companion and friend to her husband, and a devoted mother to his four handsome and intelligent children. After eight years of mercantile life among the Web-feet, Mr. Minear moved to Washington Territory, and, two years later, in 1864, took the first quartz mill to Idaho. For the six years following, he was one of the largest mine owners and workers, and the heaviest operator in the Territory, contributing largely to the development of that remote region, making and losing several fortunes, as seems to be the peculiar lot of men of his class. In 1870 he returned to San Francisco, and mingled once more with the speculative throng of California street. He controlled large mining properties all over the coast; mines and mills in California, Nevada and Idaho, and in order more successfully to handle his stock interests, bought a seat in the Pacific Stock Exchange and entered the arena as a sometimes "bear," but oftener a "bull." He had his "ups and downs" like all the balance—the fickle goddess now smiling and anon putting on a frown most severe—yet in all his dealings, in the Board and on the street, at the mine and in the mining office, in days of prosperity and in hours of adversity, no man can say that A. P. Minear ever broke his pledges, ever voluntarily failed to keep a financial engagement, or ever "went back" on a friend. In 1878 Mr. Minear took a large interest in, and was elected President of, a railway enterprise to build a railroad through the States of Georgia and Florida to Key West. Bills were introduced into Congress last session, and were reported upon favorably by committees of both the House and Senate, but failed of passage for want of time. Bills have been introduced the coming session, and will no doubt pass and receive executive approval. Mr. Minear is now the managing director of the "Silver Nugget," and a large owner in other mines.

The Silver Islet vein is a "true fissure," tested in this respect to a depth of nearly 1000 feet by diamond drill, and is traceable upon the surface for several miles, its width varying from four to forty feet, and its deposits of mineral being of unparalleled character and richness.

The books of the Company show that the average value of "packing ore" produced in 1878, exceeded \$3500 per ton of 2000 pounds, and that the concentrations from the stamp-mill rock were nearly \$850 per ton of concentrations.

The Company is substantially free from debt; its mortgage bonds of nearly \$400,000 having been



Thunder Cape. F. Harboe. Shaugonah. Silver Islet.
BIRDS' EYE VIEW OF THE SILVER ISLET MINE AND PROPERTY, THUNDER BAY, LAKE SUPERIOR.

paid recently from the net earnings of 1878, and it has an accumulation of ore and other assets presently available as cash, valued at from \$300,000 to \$400,000.

The Company is fully supplied with all necessary machinery and appliances for producing and reducing its ores, including a fifty-stamp mill at the Islet and reduction works near Detroit, and its mine (systematically opened to a depth of 650 feet) is being vigorously and successfully worked by a force of about two hundred operatives. Its facilities for labor, supplies and transportation are eminently favorable for production at the cheapest rates.

The future of this Company it is impossible to predict, it being fairly presumable that the history of its Silver Islet will be oft repeated in the veins on the adjoining mainland, and possibly in those on some of the other locations, several of which are already known to be silver-bearing.

SOUTHERN NEVADA MINING COMPANY.

SANTE FE DISTRICT, NEVADA.

Main Office, Reno, Washoe County, Nevada. New York Office, No. 17 Broad Street, New York. Officers of the Company, James H. Kinked, President; M. Lippman, Vice-President; Reno Savings Bank, Treasurer. Bankers in New York, M. & S. Sternberger, No. 17 Broad Street; Col. C. B. Stonington, Attorney. Annual Meeting Second Monday of October. No. of Shares, 200,000, of \$50 each. No. of feet, 7,500 in length, and 600 in width.

The claims are in Santa Fe District, Esmeralda County, Nevada, containing rich smelting ores already developed by tunnel and shafts. 10,000 tons exposed, average \$100.

TRIO GOLD AND SILVER MINING COMPANY.

IDAHO DISTRICT, CLEAR CREEK COUNTY, COLORADO.

Office of the Company, No. 10 Wall Street, New York. Officers of the Company, H. C. Hardy, President; F. Hardy, Secretary and Treasurer; Alfred Hocking, Superintendent; H. C. Hardy, Benjamin Collins, F. Hardy, Directors. Capital Stock, \$150,000. No. of Shares, 150,000.

TRIO GOLD AND SILVER MINING COMPANY.

The property of this company, consisting of 1250 linear feet on the Trio vein, situate southeast of the Sunshine lode, in Virginia canon, upon which there is a government patent, has been explored through a tunnel 224 feet in length, where it intersects the vein at a depth of 165 feet. A turn was made at the intersection and a level driven 60 feet under the bottom of the discovery shaft, 102 feet in depth, and an upraise made to connect the level with the old workings of the mine. An incline ore chute will be put in at this point to receive the ore from the two upper levels. The west 100-foot level from the main shaft has been run 60 feet, the breast of which shows a four foot crevice, and a branch vein coming in on the foot-wall, one-half of which is smelting iron. The Trio vein proper, of an average width of ten inches mineral, has been left standing on the hanging wall for a distance of 14 feet. Some 60 feet above and 100 feet below the surface, another level west has been started. All the levels west gain depth rapidly, as the mountain is very precipitous. For example, the 100-foot level west in being driven a possible 300 feet would gain at least 200 feet, which is far more advantageous and a more economical manner of working than by sinking a shaft. The Trio company commenced the development of the property the latter part of last July, since which time the tunnel level of 224 feet, 60 feet on the vein to upraise from the tunnel level; upraise of 63 feet to connect with the bottom of the shaft; timbering of tunnel, laying of track and arranging of water-way; erection of blacksmith shop, forge, and all complete, as also the boarding house of the company—28x28—containing six rooms, and grading lot for same, has cost less than \$6,000. This enterprise has its advantages as a prospecting scheme, as on its line other veins will be cut, which, doubtless, will prove equally as rich as the Trio. It will require fully one month's labor to arrange everything before the output of the mine can be made to produce ore in any large quantity. There is plenty of it in sight in the mine, but these things can only be approached in a workmanlike manner. The main ore chute, or chimney of the Trio, most undoubtedly lies west of the tunnel face, which development alone can demonstrate. It is a matter of doubt whether another enterprise of like character can give as good showing, for the amount of capital expended and the time occupied. Work was commenced under the superintendency of Mr. Alfred Hocking in the latter part of July last.

WYANDOTTE CONSOLIDATED GOLD AND SILVER MINING COMPANY.

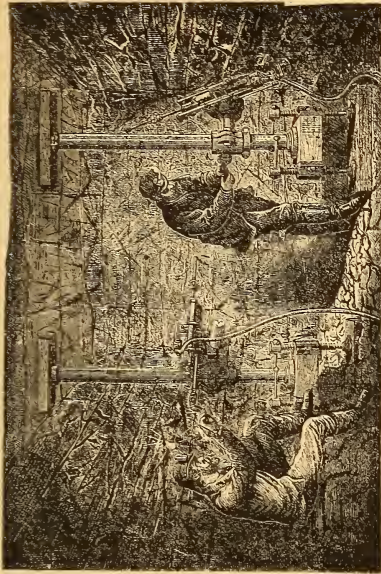
CENTRAL CITY, COLORADO.

Office of the Company, 16 Broad Street, New York. Officers of the Company, Ely Mygatt, President; B. A. Farnham, Vice-President; Gardner E. Tufts, Secretary; Levi Harsh, Superintendent; Wm. H. Drew, S. Lenox Treadwell, J. W. Mesereau, Jr., Directors. Capital Stock, \$600,000. 200,000 Shares of the par value of \$3. Unassessable.

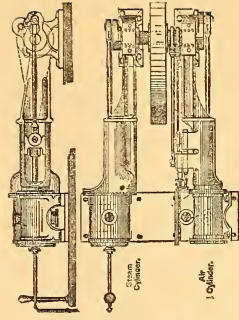
The properties of the Company are one mile from the Colorado Central Railroad depot, in Central City, and two miles from the Blackhawk Reduction Works, and consist of the following veins and lodes: The Harsh vein, including the Elmer and Wyandotte lodes, 1000 feet; the East Leavenworth lode, 1200 feet; the West Wyandotte lode, 1500 feet, the Gold Ring lode, 1500 feet; Mollie Newcomb, 1400 feet; the Leavenworth lode, 444 feet, and the Calhoun, 1500 feet; aggregating 8500 feet of gold lodes. The Company's lodes were among the first discovered in Gilpin County, and have been worked down through the surface ores for almost their entire length, yielding as large an average of bullion, in proportion to extent of development, as the most productive mines of this, the richest mining county in Colorado.

Of the \$70,000,000 yielded by the State, Gilpin County furnished over \$30,000,000. Located within less than a mile of the Wyandotte Company's property are the following mines: the "Gregory," which has yielded \$8,500,000; the "Bob-tail," \$4,500,000; "Gunnell," \$2,500,000; "Burroughs," \$1,500,000, "Kansas," \$1,500,000; "Buel," \$850,000.

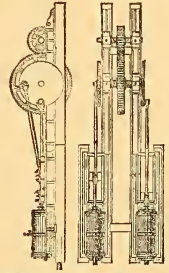
The Company has lately secured the following adjacent properties: "East Leavenworth No. 2," 1500 feet in length; "Ridge," 1500 feet; "Topeka East," 495 feet; the "Star," 266 feet; total, 3760 feet. These additions give the Company over 12,000 feet of ground, all bullion-producing. The mines are being actively and systematically developed, with every prospect of the most favorable results to stockholders. Full information, with maps, reports, assays, &c., may be obtained at the Company's office.



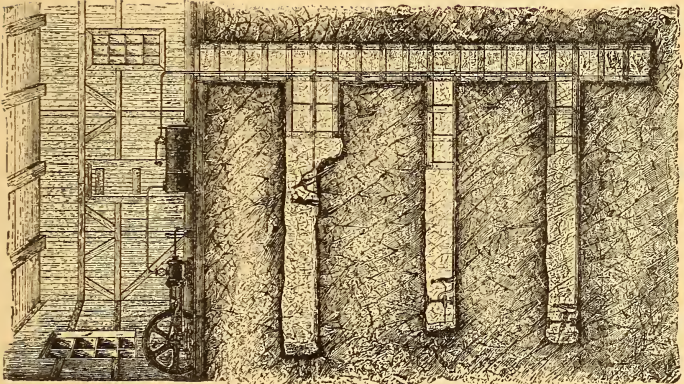
RAND'S LITTLE GIANT ROCK DRILLS
 Illustrated on the new "Calumet" Mine, working on the new excavations in the East
 Mine, by the U. S. Government, under the charge of General Newton.



HORIZONTAL COMPRESSOR.
 Out-of-Valve, Cranks arranged so that the effort and resistance
 are equalized.



RAND AIR COMPRESSORS
 To be driven by Turbine Wheels.



GENERAL ARRANGEMENT OF COMPRESSOR
 in the Nevada Silver Mine.

RAND'S ROCK DRILLS AND AIR COMPRESSORS.

AIR COMPRESSORS AND ROCK DRILLS

ARE IN USE AT THE

Consolidated Virginia, California, C. & C. Shaft, Gould & Curry, Utah, Sierra Nevada, Ophir, Savage, Hale & Norcross, Imperial, Justice, Baltimore
 • Consolidated, Soulsby, Sheba, Grass Valley; Port Henry, Crown Point, Cheever Ore Bed, N. Y., Oxford Iron Works, N. J.

AND MANY OTHER MINES THROUGHOUT THE COUNTRY.

PROVED TO BE THE BEST IN USE.

They give the air perfectly dry. They give the air perfectly cool. Can be run at any speed of Piston.
 They work at any pressure.

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MINERS' SUPPLIES

— † IN EVERY VARIETY. † —

AGENTS FOR

Washoe Picks,

Ames Shovels,

Pipe and Fittings,

Rubber Hose and Belting,

Iron and Steel Barrows,

Anvils, Vises,

LIGHTNING SCREW PLATES, ASHCROFT GAUGES, AND AMERICAN,

JUDSON AND PICKERING GOVERNORS, PIPE TAPS,

AND PIPE CUTTERS.

SEND FOR ILLUSTRATED CATALOGUE.

IMPORTANT TO MINERS.

Newell's Patent Universal Grinder.

This Grinder is offered to the Public as the most Remarkable Machine yet Invented for Pulverizing and Granulating

Quartz, Phosphate Rock, Bone, Fire Clay, Marble,

AND SUBSTANCES OF SIMILAR TEXTURE.

It is unrivaled in the amount of work it will do in any given time, and in the economy of power used. The largest size of these Mills will take any material in pieces about four inches square, and will reduce 100 tons to particles ranging from one inch to powder, in ten hours. A Mill of the second size is used for further reduction to any required fineness. A smaller Mill of the third size will grind over 6,000 pounds of Corn per hour to fine feed. The product is a perfectly granulated article however finely reduced.

A very important item in estimating the utility of these Mills is facility and cheapness of supplying new grinding parts. The cost of repairs is vastly below the amount required by the other machines in use and doing the same amount of work.

WEIGHT OF MACHINES.—The largest weighs 8,000 pounds (heaviest part weighs 800 pounds). The second size 5,500 pounds. The smaller Mill, for Corn, &c., weighs 900 pounds.

Parties interested are invited to call and see the machines working at

Foot of West 19th Street, New York City.

NEWELL & CHAPIN.

PART II.
PACIFIC COAST.

INTRODUCTORY.

THE STOCK MARKET.

As the primary purpose of the publishers of the ANNUAL MINING REVIEW is, to present a fair and, as far as possible, correct picture of the condition of the mining interests of the Pacific Coast, such a picture would be incomplete without a description of the market in which mines and mining stocks are bought and sold. As this market extends over the whole Pacific metropolis, and the buyers and sellers of stock include the millionaire and the mendicant; the modest matron and the brazen courtesan; the prudent man of business and the reckless gambler; the maid servant and her mistress; the banker and his customers—it is easy to understand the difficulty of describing such a market.

Among the most interesting and instructive incidents in the best books of travels, are the descriptions of the slave market at Cairo, in Egypt; the great Russian Fair at Novgorod; the Bourse of Paris, and the Royal Exchange of London. Each of these great marts of trade and speculation has peculiarities. The influence of the Paris Bourse and the London Exchange affects the operations of the whole commercial world. So, the operations of the San Francisco Stock Market affect the Paris Bourse and the London Exchange—consequently, it is one of the ruling powers of the commercial world, and like these other great marts, it has peculiarities of its own. A measure of the importance of a portion of the California Stock Market may be formed from the returns of the San Francisco Stock and Exchange Board, the Pacific Stock Exchange, and the California Stock and Exchange Board, the three great public markets where stocks are bought and sold, and publicly record their business, which aggregates hundreds of millions annually. The sales of mining shares at the Stock Boards of San Francisco amounted for the year 1877 to a total of \$119,699,730; yet the mining corporations whose stocks or shares are on the list of these Boards are but few as compared with the thousands of mines in process of development in the various States and Territories on the Pacific Coast. Thousands of these outside mining ventures are regularly incorporated and have their shares on the outside market. Millions of dollars are annually expended in the development of such mines, and much of the gold and silver that enters into the aggregate of the quantity obtained, is from these outside mines, frequently at a cost of more than the market value, the assessments levied on the stockholders paying the difference. Yet, now and then, some of these outside ventures are enormously profitable. This is the case at the present time on the great Comstock Lode. There are only one or two of the mines located thereon that pay any dividends to stockholders, though most of these mines produce large quantities of bullion. But it costs more than its market value; yet there is a reasonable ground to believe they may and will pay for working some time. This fact is a full and clear defense for stock speculating. Without this speculating, no mine that did not pay from the commencement of working could be prosecuted successfully except by the wealthy few. No dozen, or twenty, or a hundred men would or could have developed the Comstock mines as they have been developed, had they not divided their stock into hundreds of thousands of shares, and giving every one an opportunity to “take a hand in the game,” for mining is but a game of chance. No human being can tell what a mine contains an inch below where it has been explored. The most expert miners and greatest geologists, who examined the Comstock years ago, were not aware of the existence of the great Virginia and California Bonanzas until the miners’ picks exposed them, and in a few years brought to the surface, from nearly half a mile beneath, more than a hundred millions of dollars worth of gold and silver. And who shall say, authoritatively, that there are not other bonanzas on that lode, and in other localities? So long as there are probabilities of men making millions by speculating in mines, so long will they risk their money in stocks. If but a few attain to the eminence of a Flood, O’Brien, Mackey, Fair, Sharon, Jones, Baldwin or Keene, with their millions, thousands have made a comfortable competence by stocks. It is true, many have been ruined by speculating in them. But a careful comparison of the number of failures in stock speculations with those that occur in commercial business, manufacturing, and trading, will prove that judicious investments in mines are less risky than in almost any other business. The fact that every class of people continue to dabble in stocks, and every now and then numbers obtain a prize in the lottery, is an unanswerable argument in favor of the stock business. The judgment of the majority in this case is decidedly more convincing than that of the minority.

We had not intended to write a defense of stock speculating—which some of our readers may think we have done. We intended to give only an outline sketch of the Stock Market;

but as such a sketch would be incomprehensible to those who have never been in San Francisco and "seen the elephant," we were compelled to refer to causes that produce the strange effects on the market, which we shall describe. Without some such explanation as we have attempted to give, a stranger, going into one of our local Stock Boards when it is in session, would be disposed to think he had, by some mistake, got into a lunatic asylum; while the crowds of men and women of every class of society, who throng the streets in front of the regular Stock Boards "from early morn till dewy eve," would be inexplicable to him, if he did not understand the motive that calls them together.

The Stock Markets proper are the three "Boards" of incorporated brokers, already mentioned. No stocks are sold at these Boards or Markets except such as are entered on their lists and "called" by the callers. Nor is any one permitted to buy or sell these stocks in the Boards except the members thereof. It costs a considerable sum to have a stock listed and called, while a seat in the Boards varies in price from one or two thousand to thirty or forty thousand dollars. The rooms in which these Stock Boards conduct their business are among the most elegantly fitted-up places in the city. That of the San Francisco Stock Exchange, on Pine street, between Montgomery and Sansome, is more like the banquetting-hall of some great potentate than a place of business. It is of immense proportions, surrounded by a handsome gallery. At one end of this room is a grand canopy of crimson cloth, draped from an elegant gilt cornice. In front of this is a dais, or platform, about three feet above the level of the floor, on which is placed the desk of the "caller," the secretary, and clerks of the Board. The members of the Board are seated within a circular rail, in front of the caller. The clients of the members, who pay for the privilege of doing so, stand around outside the rail. The general public are permitted to occupy seats in the gallery, one end of which being reserved for ladies and their escorts—and it is generally well filled by them.

No description of the scene, when the business of the Exchange is in progress, can convey an idea of the excitement, noise, and seeming confusion that prevails. The moment the caller names a stock for which there is a demand, all the brokers rise from their seats and rush to the space in front of the caller, and yell the number of shares they will sell or buy, and the conditions, gesticulating like wild men—their eyes glaring, and hoarse with bellowing. They pull and tug and jostle each other as if in anger, till tired, when they resume their seats till the clerks make the entries and the next stock is called, when the scene is re-enacted—the men on the floor outside the rail surging and heaving in sympathy with those within the charmed circle like huge waves around a rock-bound shore. The less interested spectators in the gallery hold their breath with excitement at the strange scene before them. All the time the struggle goes on, an army of telegraph-boys in uniform, and hundreds of private messengers, arrive or are sent in haste with messages to agents on the outside, who convey the news to their clients and friends by other messengers, bulletin-boards, or telegraph, till the whole community becomes almost wild with the excitement of the hour.

The motive power of this machinery of the Stock Market is the caller. Amid the Babel of sounds his herculean form and stentorian lungs may be heard above the din around him. Howard Coit, the caller of the San Francisco Stock Board, has sold more stocks than probably any other man in the world, and conducts the mammoth business under his control so honestly and fairly as to have won the respect and confidence of all interested in the Stock Market. When it is remembered that millions of dollars may be lost and won at one of these sessions, and that the surging mass of men without the rail are the chief winners or losers in the struggle, there is little to be wondered at, if they become excited. Nor is the excitement confined to the place wherein it is thus generated. The grand granite building in which this Board holds its meetings, is literally netted with telegraph wires, which connect with the office of nearly every prominent stock-broker, banker and merchant in this city, and with every town and village in the interior of this and all the other States and Territories on this coast, with the Eastern States, and with Europe. As a stone cast into a placid lake creates a movement over its whole surface, so the price of mining stocks in San Francisco causes a movement in the money markets of the whole civilized world. There are millionaires in New York, London, Paris, Antwerp, and Berlin, who are as deeply interested in the movements of our mining stocks as are those who attend the markets here. No sooner has the Board adjourned, than the steam printing-press throws off thousands of reports of the business done and the quotations of the various stocks. These are quickly spread on bulletin-boards all over the city, around which may be seen eager crowds of men and women, noting the rise or fall of stocks in which they have ventured their little capital. When, as has been the case within the past few weeks, such stocks as the Sierra Nevada, Bodie, Union, Utah and others, have fluctuated from one hundred to three hundred per cent. in a day or a week, and the poor man has become rich and the rich man poor in an hour, is it any wonder that people everywhere become excited, and everybody dabbles in stocks? When we state that a violent fluctuation in prices, such as sometimes occur, causes a rise or fall of ten to twenty millions of dollars in a single day, some idea may be formed of the number of individuals that must be affected by such changes; while some idea of the proportions of the stock business may be formed, when we state that the nominal value of the stocks issued by incorporated companies in California and Nevada exceeds \$300,000,000,000. Of course, much of this stock is worthless, but still it is bought and sold, and is in the stock market.

Those who attend the Stock Boards, but are unacquainted with the terms used by the

brokers, are puzzled to understand the jargon of the market. "Sell 'em cash," yells one; "sell 'em regular," shouts another, while another screams out, "Sell em seller 30." To sell "for cash," means that the stock must be delivered and paid for before 2 P. M. of the following day. To sell "regular," means delivery on the following day. All sales made in the Board or on the street by brokers, after the adjournment of the Boards, are considered regular unless especially specified otherwise. To "buy or sell 30," means that the seller or buyer has thirty days to deliver or demand the stock. Most of the brokers buy stocks for cash, and hold them for customers for thirty days, charging a heavy interest for the accommodation, the customer paying such "margin" or security as the broker demands. Generally this margin is about 20 per cent. of the price of the stock. Should the stock fall in price, the customer has to provide more "mud," or make the margin up to the 20 per cent., or the stock is sold at the risk of the customer. If the stock of a "buyer 30" should rise the day after the purchase, he has the right to demand the stock, or the difference in the price at which he bought and which it is quoted at the Board.

At the regular meetings of the Stock Boards, all the transactions are recorded by the secretary and clerks; but at informal sessions the brokers keep their own records. No one who has not seen one of these informal sessions can have any clear conception of the noise, confusion and tumult; yet, strange to say, there is seldom any mistake in their entries of purchases or sales, though they sometimes sell thousands of shares at these informal sessions. The business of the stock market is not confined to the Boards—it extends everywhere. The great center of the curbstone crowd, who annually buy and sell millions of dollars worth of stocks on the street; from 9 A. M. till 3 P. M. it is sometimes almost impossible to pass the corners of Pine and California Streets, and Montgomery Street and Leidesdorff, between them; while every leading saloon, hotel, and boarding house has its coterie of speculators, among whom may be seen ladies, servant girls, mechanics, laborers, boys, girls—in short, "everybody buys 'em," as the patent medicine vendor says of his nostrums.

The influence of the Stock Market on San Francisco has been and is immense. As may be imagined, a business in which nearly everybody is interested must have an influence on public opinion. Stocks form the theme of everybody's conversation, in public and private. The stage, the pulpit, the press, the bar (not of the saloons), and the forum, all refer to stocks. The slang of the market permeates the conversation of the most refined society. The store-keepers ticket their goods with the names of the richest mines. The bar-tender mixes drinks "à la bonanza," or for a "winze," or a "lower level." Our streets, squares, and parks, and not a few children, are named after stocks.

It must not be accepted as true that the Stock Market is a sort of gambling-hell, and that all the dealers in stocks are sharpers and frauds. Many of the most worthy citizens in the State are stock-brokers, and the business is generally conducted with more fairness than the average of general trade. The stock-broker cannot mix his wares as the manufacturer mixes shoddy, or as the merchant sometimes adulterates his goods. The stock in a mine is more under legal supervision than are the manufactures or imports of the merchants.

Whoever walks through the blocks of buildings bounded by Pine, Sacramento, Kearny, and Battery streets, the very heart of our city, in which have been erected the most palatial stores, banks, and offices, and notes the immense number of stock-brokers' offices, the names of the brokers, and the enormous business they do, may get an insight into the extent of the Stock Market, and of the sort of men who conduct it. The monthly returns of the Clearing-house show the influence of the business on the whole community. The recent activity of the Stock Market made a difference of several millions in the business of the banks.

England may be "a nation of shop-keepers," but San Francisco is decidedly a community of stock-dealers; and, so long as enterprise, skill, and a liberal expenditure of money offers such probabilities of success as are offered by the gold and silver mines of the Pacific Coast, so long will there be life and activity in our Stock Market. The facts and figures contained in the present number of the MINING REVIEW, though incomplete, are still amply sufficient to convince any reasonable person of the extent, value, and enormous profits attainable by judicious investments in mining stocks.

SAN FRANCISCO STOCK AND EXCHANGE BOARD.

The Morality of Stock Dealing.—The Beginning of Stock Operations in California.—The Old Method of Operations.—Steps Preparatory to the Organization.—The Original Articles and Signers.—The first Meeting and subsequent Organization.—Charities of the Members.—Present Financial Condition of the Board.—The new Building and Board Room.—Value of Seats, and the Security to the Public vouchsafed thereby.—Early Transactions compared with present Business.—What the Board has accomplished for the Coast.—List of Presidents, Officers, Members.—Constitution, By-Laws, and Board Regulations.

There are a few persons in almost every community who belong to a particular set of good people, and who think, in the fullness of their catechism and bread and butter, that it is a great sin to buy and sell stocks. For a wonder, one or two of these particularly good people occupy editorial chairs, and try to teach the people morals; as if morals were anything more, primarily

and literally, than doing as others do. The man who attends church is a moral man in a church-going community; and, by a parity of reasoning, the man who deals in stocks in any town on the Pacific Slope is thus far a moral man, for the majority of the people are of his ilk.

The fact is, there is no law of chance whatever in stock dealing, any more than there is in buying and selling any other real estate. It is a matter entirely of judgment. For instance, a man forms his opinion in a legitimate business manner, and after a thorough investigation, that real estate in a certain part of the city, by reason of the influx of people, or for other causes, is going to rise in value. Acting on his judgment, he buys in that quarter, and if he is correct in his conclusions, he realizes by selling at a greatly advanced price. If not correct in his deductions, he fails to make the turn he anticipated. It is precisely so in stocks, which are real estate on the Comstock, or elsewhere, and are bought and sold in shares now, instead of by the acre, as outside landed property, or by feet and inches, as formerly. The difference is one in degree, not in kind; in practice, not in principle; and there is in the business nothing like the chances which attach to many strictly "moral" transactions that are winked at and even lauded by these "holier-than-thou" pretenders.

The development of a mine or a mining district does not differ in kind from the development of any other real estate. The only difference is, that the man who takes up a homestead under the law of Congress must levy an assessment upon his own land, which has but a single owner, and pay it from his own pocket, in order to improve his property; and in the case of a mine, the officers, who are the head, levy the assessment upon the property of the company, and the individual members pay the amount, according to the interest each holds. Money is the great base upon which the whole superstructure of society and civilization rests, and without it nothing will be accomplished in religion or business; and it makes no difference whether it is furnished by one or the many. What makes operations in stocks more general, are the facilities for their transaction, and the fact that there are rapid and great fluctuations in prices. Where any immorality attaches to that fact, it is impossible for any one not especially "to the manor born" to see.

But, moral or immoral, men will prospect mining regions, develop mines, and buy and sell mining stocks; and the San Francisco Stock and Exchange Board was organized with the view of facilitating operations therein.

A sketch of the discovery of the Comstock Lode will be found elsewhere; and also an account of the multiplication of locations and the advent of milling in that vicinity. Stock operations commenced about the same time, and were carried on in feet and inches. These transactions reached a fever heat in 1861, and the sales were made as any other real estate sales, wherever buyer and seller chanced to meet. Previous to that time, there existed a Board of Brokers, whose chief occupation was to sell water and gas stocks, bonds, notes, securities, etc.; but the transactions in mining estates grew to such an enormous extent, and the sales by feet were productive of so much fraud and deception, and, withal, the people became so anxious to invest their money in mining property, that a change was demanded. Before the establishment of the Board, some of the large mine-owners would meet in the morning, and, by a pre-arranged plan of operations understood by them, pretend to make great sales, one to another. This would be immediately reported to the headquarters of the brokers, at the Bank Exchange, and thus an impetus to transactions be given, and prices fixed for the day. Under such a state of things, it was almost impossible for any one on the outside to get an opportunity to make a fair and legitimate investment. Parties were, however, seldom bit the second time, and those interested soon desired to establish a Board similar to the Exchange Board of New York. The subject was talked over and agitated, till finally Frank Lawton, the old Secretary of the Board, suggested to several brokers that a meeting be had, and a regular Stock and Exchange Board organized. The proposition met with both favor and opposition from the dealers. Many of the large mine-owners also opposed the movement as prejudicial to their interests, and likely to let a lot of unprincipled and irresponsible speculators loose upon the community. The first meeting was attended by barely five. Further agitation, however, increased the number to twelve, when articles were signed and an organization effected, after the plan of the New York Stock Exchange, with a view to facilitate the buying and selling of stocks, and for the mutual protection of its members. Others, subsequently, were glad to avail themselves of the benefits of the organization, and added their names to the list. The articles were as follows:

SAN FRANCISCO, Sept. 1, 1862.

For the purpose of facilitating the purchase and sale of stock, and mutual security, we, the undersigned, propose to organize a San Francisco Stock Exchange, on the plan of the New York Stock and Exchange Board. In furtherance of which object we do each agree to pay into the hands of the Treasurer, when chosen, the sum of \$100:

J. Perry, Jr., T. C. Sanborn, S. Heydenfeldt, Geo. R. Barclay, H. C. Logan, Robert C. Page, C. H. Wakelee, Joseph Grant, J. B. E. Cavallier, S. C. Bruce, P. C. Hyman, Henry Critcher, P. B. Cornwall, N. A. Watson, Wm. L. Higgins, E. J. de Sta Marina, Simon Mayer, Franklin Lawton, D. C. Williams, Henry Schmeidell, H. P. Wakelee, E. W. Teacle, O. Abbott, R. E. Brewster, A. Marius Chapelle, E. Dupre, A. J. Shipley, R. H. Sinton, T. A. Talbert, Wm. Willson Lawton, Frank M. Pixley, David Henriques, Wm. H. Parker, Wm. R. Garrison, J. Downe Wilson, A. Van Lokeren, Chas. K. Smith.

The first meeting, called for the purpose of organizing the Stock Board, was held on the 5th of September, 1862, at the office of J. B. E. Cavallier, R. C. Page, Joseph Grant and Samuel Bruce, who were then engaged in the real estate and general brokerage business. Their office was at 428 Montgomery Street.

These gentlemen, together with Messrs. Franklin Lawton, Theodore C. Sanborn, E. J. Santa Marina, Henry Schmeidell, John Perry, Jr., and T. W. Teacle, were most active in their efforts to found the institution.

At this meeting temporary officers were elected, viz: Mr. Henry Schmeidell as chairman *pro tem.*, and Mr. Frank Lawton as secretary *pro tem.* A committee of six was also chosen to draft a constitution and by-laws for the Board, namely: Messrs. Perry, Sanborn, Critcher, Page, Henriques and Lawton.

Messrs. Shipley, Chapelle, Wakelee, Grant and Watson were appointed a Committee of Arrangements.

At the next meeting, held Sept. 11, 1862, the constitution was reported by the committee and adopted by the meeting, and permanent officers of the "San Francisco Stock and Exchange Board" were balloted for and elected as follows:

J. B. E. Cavallier, President; E. W. Teacle, Vice-President; Franklin Lawton, Secretary; Henry Schmeidell, Treasurer.

At a meeting, held Sept. 12, 1862, by-laws were reported by the committee, and after some modification, were adopted.

The original fee or assessment on the organization of the Board was \$100 for membership; but it was only found necessary to assess \$50 to each member to make up a fund of \$2,000. A small room was then rented in Montgomery Block for the use of the Board. It was furnished with a plain table, in horse-shoe form, desks for the president, secretary, etc.

At first business in the Board was very dull, the members, with two or three exceptions, being very inexperienced in stock transactions on the Exchange Board.

Shortly after the Board was fully organized, business began to increase, and many new applications for membership were received. The Board thereupon concluded to increase their numbers. The fee was also increased to two hundred and fifty dollars, then to five hundred, and finally to one thousand dollars. And the number of members was limited to eighty, which number was only recently increased to one hundred. The funds of the Board soon accumulated, and from that day to this they have never lacked for money for their own uses, and for many very large and praiseworthy charities.

After occupying this room in Montgomery Block awhile, the Board found it entirely too small for their purposes, and they removed to the building opposite, at the southwest corner of Washington and Montgomery streets, belonging to Michael Reese.

The Board remained here for some six or eight months, and then found this also inadequate to their wants, and again moved, this time to a large room in the building over the old Metropolitan Theater, the west side of Montgomery Street, between Washington and Jackson Streets, built expressly for the members of the Board by Mr. Eugene Sullivan. That is the same room where the Fifteenth District Court is now held. This room was fitted up under the supervision of Messrs. Cavallier and Lawton, then president and secretary of the Board, and was the most convenient and comfortable room occupied by the Board up to that time.

About the time of this last removal, the Bank of California was moved to the new building on California Street, where it now is, other moneyed institutions congregating on California Street, or in its neighborhood, which began to be the moneyed centre of the city.

When the new Merchants' Exchange Building, on California Street, between Montgomery and Sansome Streets, was erected, it was with the understanding that the Board should occupy a room in it, and the Board took stock in this building to the amount of \$20,000, which they still own. They moved from the Metropolitan Theater to the Merchants' Exchange, and occupied the room designed for them, on completion of the building, when, finding it inconvenient and not large enough, they removed to Duncan's Building, 411½ California Street. Here they remained until the erection of the San Francisco Stock and Exchange Building on Pine Street, whither they removed October 1st, 1877.

The charities of the San Francisco Stock and Exchange Board have been most remarkable. Large sums have been voted to aid the Orphan Asylum at various times. When Chicago had its baptism of fire and a wail of distress resounded throughout the land, this institution responded promptly and effectively. During the Winter of 1875, Marysville was inundated, and this Board immediately sent to their relief \$10,000. General Brisbin, U. S. A., came from Omaha and went before the Board, and in simple, eloquent and pathetic language told the members of the suffering and distress of the people of Nebraska, on account of grasshoppers. In less than twenty minutes the individual members of the Board subscribed \$10,000, which amount was duly forwarded to its destination and applied to the humane purpose of relieving that suffering people. When the heart of Virginia City was burned up, and a thousand houses were swept by the storm of fire from existence, the Board contributed \$8,000 for the relief of the sufferers. These things show that, however anxious these gentlemen are to make money, their hearts are tender and pockets ever open at the call of suffering humanity.

In the early experiences of the Board, no charge was made for entering the name of any mine upon their list, and calling the same during transactions; now, a fee of \$1,000 is

demand. In those days, the transactions were small. The following is taken from the records of the Board, and exhibits the first five days' business done after organization :

<i>Friday, September 26, 1862.</i>						
SELLER.	BUYER.	QUANTITY.	STOCK.	PRICE.	TIME.	REMARKS.
Perry	Logan	\$500	Starr	387½	.....	.....
Marina	Sanborn	10 feet	Chollar	185	.....	.....
Perry	Pixley	50 shares	Mt. Davidson	8	.....	.....
FRANKLIN LAWTON, Secretary.						
<i>Saturday, September 27, 1862.</i>						
Perry	Logan	5 shares	Cal. Navigation	39½	.....	.....
FRANKLIN LAWTON, Secretary.						
<i>Monday, September 29, 1862.</i>						
Perry	Logan	3000	S. F. Bonds	70½	.....	.....
Wilson	Perry	6 feet	Esmeralda	50	.....	.....
FRANKLIN LAWTON, Secretary.						
<i>Tuesday, September 30, 1862.</i>						
Logan	Cavallier	50 feet	Desert	12½	.....	.....
Sanborn	Cavallier	10 feet	Potosi	187	.....	.....
<i>Wednesday, October 1, 1862.</i>						
Marina	Cavallier	15 feet	Chollar	175	.....	.....
E. H. Wakelee	Mayer	10 feet	Sierra Nevada	140	.....	.....
Perry	Shipley	20 shares	Mt. Davidson	6½	.....	.....
Logan	Perry	10 feet	Meredith	20	.....	.....
Logan	Hyman	36½ feet	Meredith	20	.....	.....
Perry	Sanborn	7 shares	Bensley Water Co.	35	.....	.....

The organization of the San Francisco Stock Exchange Board has been productive of an untold amount of good to the entire coast. It has encouraged prospectors to look for leads, by the certainty which it held out to them that capital would be ready to take hold of their location, if a valuable one, and develop their claim. It has also opened up to civilization vast sections of country where, but for the mineral deposits and the mining interests, there would be only the barrenness of desolation. It has, through the protection and encouragement which it has extended to the one great productive interest of the coast, brought capital and skill together, and united the powers of both in a grand and combined effort to bless the world. It has been ready to second the efforts of pioneers into the wilderness of every section of the coast in their search for veins of deposit; and where these have been prospected and proved to be valuable, it has, by protecting and fostering the interests there found, and by encouraging to efforts for productiveness, made the building of railroads desirable and the establishment of homes possible. The San Francisco Stock and Exchange Board has stood godfather to the mining interests, the most important of the whole coast; has fed them into strength, nurtured them into fruitfulness, and made other mighty agents its fellow servants in the work of opening up and peopling the western arm of a mighty nation.

Since the organization of the Board, the following persons have been elected to fill the presiding officer's chair:

J. B. E. Cavallier	.....	Élected Sept. 11, 1862—date of organization
"	"	..... Re-elected Jan. 12, 1863
"	"	..... " " 8, 1864
"	"	..... " " 9, 1865
"	"	..... " " 8, 1866
"	"	..... " " 14, 1867
"	"	..... " " 13, 1868
"	"	..... " " 11, 1869
"	"	..... " " 10, 1870
"	"	..... " " 9, 1871
E. P. Peckham	.....	Élected " 8, 1872
Wm. Burling	.....	" " 13, 1873
"	.....	..... Re-elected " 12, 1874
J. R. Keene	.....	Élected Jan. 11, 1875. Resigned Aug. 3, 1875
Coll Deane	.....	" Aug. 3, 1875, to fill unexpired term
Jno. W. Coleman	.....	Élected January 10, 1876
E. P. Peckham	.....	" " 14, 1878

Officers and Members.

E. P. PECKHAM	.....	PRESIDENT.	HORACE L. HILL	.....	VICE-PRESIDENT.
B. H. COIT	.....	CHAIRMAN.	J. M. SHOTWELL	.....	TREASURER.
JOSEPH L. KING		.....	SECRETARY.		

EXECUTIVE COMMITTEE.

CHARLES N. FELTON. F. H. WOODS. J. M. SHOTWELL. E. CAHILL. G. W. FOX.

FINANCE COMMITTEE.

GEORGE I. IVES C. S. NEAL GEORGE T. MAYRE, Jr.

STOCK LIST COMMITTEE.

F. A. HASSEY. M. P. HALL. W. TURNBULL. A. AUSTIN. M. SCHMITT.

MEMBERS.

Austin, Alex.*	Erlich, M.	Jones, J. P.	Paterson, James
Atkinson, T. T.	Fitch, J. R.	Keene, J. R.	Rogers, R. F.
Brooks, S. H.	Freeborn, J.	Kenney, Chas. A.	Rorke, B. B.
Bonynge, C. W.	Fox, C. W.	King, Jos. L.	Schmiedell, H.
Boswell, S. B.	Flood, J. C.	Kilgour, L.	Shotwell, J. M.
Brown, J. W.	Fry, J. D.	Latham, J. K. S.	Smiley, G. W.
Budd, W. C.	Felton, C. N.	Latham, J. H.*	Stoutenborough, C. H.
Burling, Wm.*	Foster, W. H.*	Lissak, A. H. Jr.	Steinhart, S.
Berry, F. G.†	Glazier, I.	Logan, H. C.	Schnitt, M.
Block, Bernard.	Goodman, J. T.	Loveland, L. F.	Swift, Frank.*
Coleman, J. W.	Greenebaum, J.	Lawton, Franklin	Scott, H. H.
Coffin, A. F.	Gurnett, A. G.	Lynch, J.	Sharon, Wm.
Crocker, J. H.	Hall, E. F., Jr.	Mackintosh, Wm.	Steel, Thomas.
Cope, G. W.	Hall, M. P.	Marks, Joseph	Turnbull, Walter.
Cahill, E.	Hill, H. L.	Maryre, G. T. Jr.	Van Wyck, H. L.
Charles, H. A.	Herr, J.†	Mahony, J. H. Jr.	Wattles, J. B.
Child, E. F.	Hickox, Geo. C.	McDonald, M. L.	Williams, H.
Coit, B. H.	Hubbard, C. V. D.	McDonald, M. J.	Wilke, F. E.
Coleman, Jas. V.	Higgins, W. L.	McKenty, J.	Woods, F. H.
Coursen, G. A.	Hassey, F. A.	Murphy, E. P.	Wilson, J. S.
Dixon, S.	Hale, W. E.	Morrow, R. F.	Wibans, J. C.†
Duncan, W. L.	Hooker, R. C.	Neal, C. S.	Wakefield, S. B.
Dewey, E. E.	Herman, M.	Noble, H. H.	Walker, O. V.
Everett, A. F.*	Ives, G. I.	O'Brien, W. S.*	Yost, Daniel Z.
Eyre, E. E.	Jones, J. H.	Peckham, E. P.	Zinns, L. A.

*Deceased. †Board Seat.

J. W. McCluney, Assistant Secretary, room 4, San Francisco Stock and Exchange Building.

Constitution and By-Laws.

CONSTITUTION.

ARTICLE I—*Title of the Association.*—The title of this Association shall be "THE SAN FRANCISCO STOCK AND EXCHANGE BOARD."

ARTICLE II—*Number of Members.*—The number of members of this Board is limited to one hundred.

ARTICLE III—*Property of the Association.*—The legal title and ownership of all property, effects and assets of this Association, shall vest in the officers named in Article IV, in trust for the benefit and enjoyment of its members.

Whenever a member shall be suspended from or be deprived of the privileges of membership, such suspension or deprivation of the privileges of membership, until removed by the action of the Board, shall operate as a full release of all his right, title and interest in and to the property and assets of the Association.

No member, under any circumstances, shall be deemed to have or claim, or possess any individual right, title or interest in the property or assets of the Association, except when the same shall be finally dissolved and its affairs wound up by its then remaining members.

ARTICLE IV—*Officers, Elections, etc.*—The officers of this Association shall consist of a President, Vice-President, Chairman, Secretary and Treasurer, who shall be elected by ballot, annually, on the second Monday in January; and in case of any vacancy, a new election shall be held forthwith for the unexpired term.

Any officer may be removed by a vote of two-thirds of the members of this Association.

ARTICLE V—*Duties of the President.*—It shall be the duty of the President to see that the several provisions of the Constitution and By-Laws are enforced, and have a care of the general interests of the Board. He shall appoint all committees, and preside at all meetings except the calling of stocks; and he shall be, *ex officio*, a member of all committees.

He shall, at each annual election, appoint the following committees, viz: An Executive Committee of five members, to whom shall be referred all applications for donations, and all matters affecting the interests of the Board not otherwise specially provided for in the Constitution and By-Laws.

A Finance Committee of three members, to have the general supervision, management and control of all financial affairs of the Board; to whom shall be presented all bills and demands against the Board, and by whom the same shall be audited and approved before payment; to whom shall be reported by the Secretary all moneys collected, and the sources from which they are collected; to whom shall be reported by the Treasurer the amount of money received, and from what sources; to whom shall be reported by the Roll-Keeper all fines; to whom the Trust Fund Committee shall furnish a detailed statement of their transactions, and a record of whose proceedings and of said bills, demands, collections, dues and fines shall be kept by the Secretary of the Board, acting as Secretary of the Committee. Said Committee shall meet on the first Monday of every month, and at other times when business may require. The Secretary, Treasurer, Roll-Keeper and Trust Fund Committee shall report, as herein required, on the first Monday of every month, and at other times, when required by the Committee. The Committee shall make at least quarterly statements to the Board.

A Stock List Committee of five members, to whom shall be referred all applications of companies to be placed on the regular list.

He shall appoint such Assistant Secretaries as may be required, at such salaries as may be fixed upon by the Board.

A Roll-Keeper, at a salary not to exceed two hundred dollars per month, whose duty it shall be to record all fines, and report monthly to the Secretary the amount levied upon each member.

A Sergeant-at-Arms, and such other Assistants as may be required.

All appointments made by the President shall be subject to the approval of the Board.

ARTICLE VI—*Duties of the Vice-President.*—In the absence of the President, the Vice-President shall perform all the duties pertaining to the office of President.

ARTICLE VII—*Duties of the Chairman.*—The Chairman shall call stocks at such hours as the Board may from time to time direct, maintain order and enforce the rules. He shall receive such salary as may be fixed upon by the Board; it being stipulated that, before entering upon the duties of the office, he shall bind himself by a solemn pledge to the Board, through its President, not to act as a broker, or be interested, directly or indirectly in the purchase or sale of stocks. In the absence of the Chairman, the members present may choose a Chairman *pro tem*.

ARTICLE VIII—*Duties of the Secretary.*—It shall be the duty of the Secretary to keep a full and faithful record of the purchases and sales—which record shall be considered binding on the members; to keep complete minutes of the proceedings of the Board, and to take care of the books and papers of the Association; to collect all moneys due, and pay the same weekly into the hands of the Treasurer, and to perform such other duties as the Board may direct. He shall also furnish on the 1st of each month, to the members of the Board, a list of all parties delinquent to them.

ARTICLE IX—*Duties of the Treasurer.*—It shall be the duty of the Treasurer to take charge of all the moneys belonging to the Association, subject to such regulations as the Board may from time to time determine.

ARTICLE X—*Proposals for Membership.*—Any member proposing the name of an applicant for membership in this Board shall, at the time of his nomination, state in open Board the name of the person to whose seat said applicant desires to succeed.

ARTICLE XI—*Election of Members.*—All members shall be elected by ballot, and every applicant for admission shall be proposed at least five days preceding his election, and ten negative votes shall exclude.

Each member shall be furnished with a ticket, on which shall be printed the words "FOR ADMISSION," and also a ticket on which shall be printed the words "AGAINST ADMISSION," and the tickets and the letters thereon shall be of the same size and color; and no member shall be permitted to deposit a ballot that is not folded in such a manner as to conceal the printed letters thereon. If the applicant be rejected, he shall not be renominated within five days thereafter.

The name of the applicant shall be conspicuously posted in view of the members, at the desk of the Secretary, from the day of nomination to the day of election. Only one candidate shall be balloted for on the same day. No election shall be valid unless fifty votes are deposited in the box. At the election the ballot-box shall be placed in charge of the acting Secretary, and the poll shall be opened at the hour of opening the Board, and continue to the conclusion of the call of stocks, when the presiding officer shall request any member who has not voted to do so. The President shall then appoint a committee of three to count the ballots, one of whom shall be the party proposing the candidate, or his seconder. He shall then declare the result of the ballot. Should any discrepancy be discovered between the tallies and the number of ballots in the box, a new ballot shall be taken at the next session of the Board.

No member of this Board shall belong to any similar organization.

ARTICLE XII—*Suspended Members—Re-election, etc.*—Any member failing to meet his engagements in the Board, shall be suspended until he has settled with his creditors.

If he applies for re-admission within six months of his failure in the Board, a committee of three members shall be appointed by the President to inquire into the causes of his failure, who shall report before his seat is forfeited by limitation, and on their presenting a favorable report, announcing that he has settled with his creditors, he may resume his seat in the Board, upon the assent, by ballot, of two-thirds of the members then present.

ARTICLE XIII—*Disposal of Seat and regulating same.*—In case of retirement of a member in good standing, he shall have the right to dispose of his privileges in the Board, and to nominate a successor to fill the vacancy occasioned by his retirement; provided, that no nominee of a retiring member shall acquire any right or privilege until elected in the manner and form prescribed by this Constitution; it being distinctly understood and agreed between the Board and each member thereof, that the Board reserves the right to reject any nominee.

In the event of the death of a solvent member, the Board will dispose of the vacant seat to the best advantage for the benefit of his widow and children, or those persons who shall be designated by him in his last will and testament. But no person shall be designated as or permitted to become a successor to the privileges of membership in the Board by virtue of any instrument in the nature of a will.

Any member who has been suspended for six months, and who has not made a satisfactory settlement of his contracts in the Board during that time, shall be deprived of all privileges of membership, and his seat shall revert to the Board, and be appropriated to satisfy his creditors in the Board, as follows:

Whenever any member shall have been deprived of all privileges of membership, pursuant to this Article, or shall voluntarily surrender his membership for the benefit of his creditors in the Board, the President of the Board shall call a meeting of the creditors in the Board of such person, who shall thereupon present to him their several claims against the delinquent, and the President in all such cases shall be *ex-officio* a trustee for such person and for his creditors in the Board; and the said trustee shall be vested with all the rights and privileges formerly held by such person in the Board, and shall dispose of the same in the same manner that a person retiring in good standing may dispose of his seat and privileges. The proceeds of any such disposition so made shall be devoted by the said trustee to discharging the obligations due by such person to members of the Board, and any surplus remaining shall, after having satisfied all other claims against him, be delivered to the delinquent or to any person authorized to receive the same. If the amount received by said trustee shall be insufficient to discharge all the obligations in the Board of such person in full, then the trustee shall apportion it ratably among the creditors in the Board, paying to each creditor in the Board such proportion of moneys realized by him as the claim of each creditor bears to the total amount of claims proved by the creditors in the Board against such person.

The Board may, however, by a vote of two-thirds of the members present, extend the time for settlement of any suspended or delinquent member for a period not exceeding thirty days.

ARTICLE XIV—Delinquents may voluntarily surrender Seats.—Any delinquent member may waive his right of redeeming his privileges in the Board. He may do so by notifying the President of the Board in writing that he is unable to meet his engagements with members of the Board upon contracts for the sale or purchase of stocks, and requesting him to call a meeting of his creditors in the Board, stating them; the President shall thereupon take such action as is required by Article XIII to be taken by him in respect to one deprived of all privileges of membership pursuant to said Article; and the like proceedings for the sale of his seat; and distribution of proceeds shall be had as in a case arising under said Article XIII.

ARTICLE XV—Sales of Seats for Account of Delinquent Members.—In sales of seats for account of delinquent members, pursuant to Article XIII of this Constitution, the proceeds shall be applied to the benefit of the members of the Board, exclusive of outside creditors, unless there shall be a balance after the claims of members are paid in full. And the seat and privileges of every member shall be deemed and taken to be, from the time of his admission and as long as he remains a member, a continuing security to all members of the Board with whom he may deal, according to its rules, for the performance of his contracts and the fulfillment of his engagements.

ARTICLE XVI—Quorum.—In all cases, a majority of the Board shall be necessary to do business, except the calling of stocks.

ARTICLE XVII—Commissions—Miscellaneous.

Legal Tender Notes, on par.....	1/2	per cent.	Steamboat Company Stocks, on par.....	1	per cent
Fund-d Debt, on par.....	1	" "	Telegraph Company Stocks, on par.....	1	" "
Bank Stocks.....	1	" "	Water Company Stocks, on par.....	1	" "
Insurance Stocks, on par.....	1	" "	Bills of Exchange, on net amount.....	1	" "
Wharf Stocks, on par.....	1	" "	Mint Certificate, on net amount.....	1	" "
Gas Stocks, on par.....	1	" "	Specie, on net amount.....	1	" "
Railroad Stocks, on par.....	1	" "	Mining Shares, over \$500.....	1	" "

ARTICLE XVIII—Fictitious Sales.—No fictitious sales or contracts shall be made at this Board. Any member or members contravening this Article may, upon conviction thereof, be suspended.

ARTICLE XIX—Payment and Transfer.—In all sales of stocks, transferable in this city, either party shall have the right to require the purchase-money to be paid at the time and place of transfer.

In the delivery of stocks not transferable in this city, the purchaser shall have the right to require the deposit of the purchase-money in some local Bank. to be agreed upon by the contracting parties, or named by the President of the Board; such money to be held in trust until official notification of the transfer shall have been received.

ARTICLE XX—Penalty for Non-compliance with Constitution and By-Laws.—Any member refusing to comply with the foregoing Articles, or with the By-Laws, may have a hearing before the Board; and if he shall persist in refusing, two-thirds of the members present may declare him no longer a member, and he shall thereupon lose all the rights and privileges given by this Constitution.

ARTICLE XXI—Altering Constitution or By-Laws.—No motion for altering the Constitution or By-Laws shall be acted upon until at least five days after the motion has been submitted in writing, unless by the unanimous consent of the Board, and none shall be made except by the consent of two-thirds of those present.

In all cases the Article proposed to be altered or amended shall be stated.

ARTICLE XXII—Trust Fund.—Upon the death of a member of the Board, the Finance Committee may pay from the funds of the Board to such person or persons, as may have been

designated in writing by such deceased member, the sum of ten thousand dollars, in United States gold coin.

In case there shall be no such written disposition made, then to the widow of such deceased member, the sum of ten thousand dollars, in United States gold coin. In case there shall be no widow, and a child or children, then to such child or children equally, share and share alike. If there shall be neither widow, child or children surviving such deceased member entitled to receive said money, nor any disposition made of the same as herein above provided, then there shall be no payment or provision made under this Article.

The payments herein provided for shall be deemed absolute donations to the person or persons to which the same are made or applied, from all claim or control from any other source, or person.

In case the Finance Committee shall not have sufficient funds or moneys to meet the donations herein provided for, as the same shall be needed, the deficiency shall be made good at once, by assessments *pro rata* upon the members of the Board, and collected in like manner, and under the same penalties as other dues.

ARTICLE XXIII—*Candidates for Benefits of Trust Fund.*—No member of this Board admitted after this date (June 8th, 1875), shall have any claim or interest in the Life Insurance Fund until he shall have filed with the Secretary a certificate from the Medical Examiner attesting his fitness to be accepted by this Board as a participant in the benefits of said Fund, and no member admitted since June 8th, 1875, and who had not filed his Medical Certificate before August 2d, 1876, as hereinbefore provided, shall be deemed to have acquired any claim upon or interest in the Life Insurance Fund, excepting under the following conditions:

A duly qualified physician shall be appointed by the President as Medical Examiner of the Board, who shall be considered as an appointee thereof, and whose fees shall be paid out of the general fund, in like manner as other ordinary expenses. The candidate for admission to the benefits of said Life Insurance Fund must submit to such examination as may be required by said Medical Examiner, who shall transmit to the President a sealed report containing a detailed statement of the physical state of health of said candidate, as well as his opinion concerning the fitness of said applicant to become a participant in the advantages of said fund.

The President shall, upon receipt of said report, immediately call a meeting of the Executive Committee, and shall refer the same to them for their consideration. The said Committee shall thereupon decide by ballot whether the Board is justified in admitting the said member to the benefits of said fund, and the decision of said Committee shall be reported to the Board at its next ensuing executive session. Provided, that the application of such member to have his life insured shall not be considered to have been admitted or rejected until the affirmative or negative action of the Executive Committee upon the same shall have been approved and ratified by this Board.

BY-LAWS.

ARTICLE I—*Order of Business.*—The Board shall meet daily—Sundays and legal holidays excepted.

The hours of business shall be: Morning session at 11 o'clock; afternoon session at 3 o'clock—except on Saturday, when there shall be held but one session, commencing at 11 o'clock A.M. The order of business shall be as follows:

1. Reading the minutes of the preceding day, other than purchases and sales, if called for by two members.
2. Notices of Election.
3. Calling the regular list of Stocks.
4. Calling Stocks at the request of members.

ARTICLE II—*Stocks to be Called.*—No Stock or Bond shall be placed on the list of Stocks, etc., regularly called at the Board, except by a vote of a majority of the members present; and application for the placing of stocks on the regular list shall be made directly to the Board by parties interested, subject to all rules and regulations of the Board, with full statement of the capital, number of shares, resources, etc., certified to and signed by said parties; but the Stock of no Company or Corporation shall be placed on said list unless first referred to the Stock List Committee.

ARTICLE III—*Fee for placing Mining Stocks on the List.*—The fee for placing Mining Stocks on the regular list shall be one thousand dollars each. This Board reserves the right to suspend the calling of any stocks, at any time, by a two-thirds vote of the members present. All mining stocks remaining on the list over one year shall pay one hundred dollars per annum in advance.

ARTICLE IV—*Stocks may be called by Paying Fines.*—After the regular list has been once called over by the Presiding Officer, any stock upon the list may be called up, the party calling paying a fine of twenty-five cents, and having the privilege of making the first offer.

No bid or offer for the purchase or sale of shares of Stock shall be entertained for fractions of a dollar or less than one-quarter where the value of the same is \$25 and over; of less than one-eighth where the value is \$5 and less than \$25; and of less than one-twentieth where the value is under \$5. The above rules shall govern the informal as well as the regular sessions of the Board.

ARTICLE V—*All Offers Binding—The Presiding Officer's Decision Final.*—All offers for Stock, etc., made and accepted, shall be binding whether called by the Presiding Officer or not; and in case there are two or more claimants for the purchase or sale, the Presiding Officer shall decide the same, or he may appeal to the Board for their decision. No sale shall be recorded unless made on the call, except by unanimous consent.

ARTICLE VI—*Specific Number of Shares to be offered.*—In all propositions to buy or sell, the offer shall be accompanied with some specific number of shares, the par value of which, other than Mining Stocks offered, shall not be less than five hundred dollars.

ARTICLE VII—*Reading the Minutes.*—After the call of each Stock, if any transactions have been made, the record of purchases and sales may be read, which reading shall confirm the same.

ARTICLE VIII—*Fine for interrupting the Presiding Officer.*—Any member interrupting the Presiding Officer while calling Stocks, by speaking or otherwise, shall pay a fine of not less than twenty-five cents, and not more than five dollars, for each offense, at the discretion of the Presiding Officer, from which there shall be no appeal. The levying of all fines shall rest exclusively with the Presiding Officer.

ARTICLE IX—*Informal Sessions.*—SEC. 1. No assembly of members of this Board outside of the Board-rooms, for the transaction of Stock business, shall at any time be allowed; and the said rooms shall remain open for the holding of Informal Sessions between 10 and 10:30 A. M., and between 2 and 2:30 P. M., excepting on Saturday, when only the morning Informal Session shall be held. All transactions made during such Informal Sessions shall be recorded in a book kept for the purpose, and shall be binding in the same manner as those of the Regular Sessions. Any adjournment of the Board shall affect its Informal, as well as its Regular Session, and the Board-rooms shall remain closed during the whole time of such adjournment.

SEC. 2. The Chairman of the Board shall preside at its Informal as well as its Regular Sessions, for the preservation of order and decorum—by the imposition of fines; for the settlement of disputes; and for the supervision of the records to be kept of the transactions made.

SEC. 3. The Assistant Secretary shall be in attendance during the Informal Sessions of this Board, to record all transactions at the request of members, under direction of the Presiding Officer.

ARTICLE X—*Stocks falling due on Holidays.*—All sales made at this Board shall be settled the following day, unless expressed to the contrary; and all contracts falling due on such holidays as are observed by the Banks shall be settled on the preceding day. All Stocks falling due on Sunday will be carried over until Monday.

ARTICLE XI—*Hour before which Stocks can be called for or delivered.*—In all sales of or contracts for Stocks between members of the Board, the party to receive the same shall not be bound to take them after half-past 2 P. M., but may postpone the same, without the charge of interest, to the following day; and any member, having a right to call on another for Stock, shall demand the same before the hour above specified, or be subject to a continuance of the contract until the following day.

ARTICLE XII—*Notice on Contract.*—In all contracts on time, made at the option of buyer or seller, one day's notice shall be given before Stocks can be delivered or demanded before maturity, and such notice shall be given at or before 2½ o'clock P. M.

ARTICLE XIII—*No Contracts to be made over ninety days.*—No contracts, for the receipt or delivery of Stock, etc., beyond ninety days shall be made at this Board.

ARTICLE XIV—*A Deposit on Contracts may be required.*—On all time transactions made at the Board, either of the contracting parties may require a deposit of twenty per cent. on the amount of purchase-money, as security for the fulfillment of the contract. Should the Stock contracted for vary in price to within five per cent. of the margin of said deposit, either party may call for an additional deposit of ten per cent., and may continue to do so as often as the latest deposit may be exhausted by change of price.

It being fully understood that either party may draw down any excess of twenty per cent. that may be in his favor.

When the seller deposits his Stock, the deposit paid by the buyer shall go to the seller.

When a member of this Board neglects or refuses to put up the usual deposit on time contracts, after due notice of requirement, it shall be at the option of the opposite contracting party to close the same by purchase or sale through the Presiding Officer, with some other member, on his account, the defaulting party to be held responsible for any differences. When any member neglects or fails to meet his contracts upon which deposits are made and in bank, the said deposits of Money or Stock shall be due and payable to the other party, upon the signature of the President or Vice-President of the Board.

ARTICLE XV—*Right of Broker to demand further Deposits.*—Where Stocks are bought or sold on time, or where money is advanced on Stocks by a Broker, he may call on his principal for an additional deposit, sufficient to maintain the original margin, but in the event of the margin at any time being reduced to within twenty per cent. of the market price of the Stock, then the Broker shall have the right to sell out or buy in such Stocks, through the Presiding Officer, with or without notice to his principal.

The Secretary shall make a record in a book kept for the purpose of all such sales or purchases, with the name of the Broker and Principal for whose account they were made.

All sales of delinquent stock made on account of any person not a member of this Board, and without the order of such person, shall be made by the Presiding Officer in the Board-room, at public auction, immediately after the adjournment of any regular session, and all persons (irrespective of membership) shall be at liberty to bid for the same.

Upon all purchases so made a deposit of twenty per cent. shall be made at the time, and failing such deposit, the stock shall be resold forthwith.

ARTICLE XVI—*Place of Deposit.*—When deposits are made on time sales, the seller shall have the privilege of designating the Banking-House in which the deposits shall be made. The seller shall be responsible for the money deposited, and for the delivery of the Stock. Should the purchaser object to the place of deposit, the President of the Board shall designate some other place of deposit, in which case the responsibility shall be mutual, as between buyer and seller.

ARTICLE XVII—*Limitation of Contracts.*—This Board will take no cognizance of contracts that remain unsettled five days after they become due, unless continued by mutual consent.

ARTICLE XVIII—*Outside Contracts.*—This Board will not recognize or enforce any time contracts made by members outside of the Board, unless the same shall be reduced to writing within three days, and any member of this Board having stock transactions with a party not a member, must, for his own protection, ask for a broker, otherwise the transaction must stand on its own basis, and the Board will not take any action in the matter.

ARTICLE XIX—*Assignment of Contracts.*—No assignment of any contract made between members of this Board will be recognized by the Board, except made by mutual consent, endorsed on the memorandum of contract.

ARTICLE XX—*Payments.*—All payments shall be in gold coin of the United States, unless otherwise agreed to by the Board.

ARTICLE XXI—*No Stock to be called when Transfers are not allowed in the usual hours.*—No stocks shall be called at the Board, the transfer of which is not allowed to be made within the usual hours of business as frequently as may be desired by the stockholders.

ARTICLE XXII—*How Stocks are to be Delivered when the Transfer Books are closed.*—Whenever the transfer books of a company shall be closed by any legal impediment, so as to render the time of their being open again uncertain, then the deliveries of stock of such Company, in satisfaction of contracts, shall be made by notarial power-of-attorney, irrevocable, containing assignments, and bill of sale, and certificate; the papers to be satisfactory to recipient, or passed upon by the Board.

ARTICLE XXIII—*Privileges.*—When any member agrees to pay a sum of money for the privilege of receiving or delivering stock at his option, the premium bid for the privilege shall be paid on the next business day. No member of the Board shall be allowed to bid for or offer privileges on any stock during the session of the Board.

ARTICLE XXIV—*In case of Failure, Contracts closed at the market price of the day.*—In case of the failure of any member of the Board, the President shall adjust all outstanding contracts with him at the average prices of the morning and afternoon Boards on the day he failed.

ARTICLE XXV—*Default must be reported within forty-eight hours.*—In all cases where a member of the Board shall fail to comply with his stock contracts, it shall be the duty of his creditors to report said default to the President of the Board within forty-eight hours after said defalcation becomes known to them. No claim or contract, unless so reported, shall ever after be recognized or enforced by this Board. During the suspension of a member, no such report shall be required.

All claims of members and non-members against said delinquent member must be filed with the Secretary of the Board within thirty days after he has been reported, and must be accompanied with a detailed statement of the account.

No claims, unless so filed, shall ever after be recognized or enforced by this Board.

ARTICLE XXVI—*Preferred Indebtedness.*—When a member of this Board fails, and is re-admitted to his seat, all subsequent accruing indebtedness shall be considered preferred.

ARTICLE XXVII—*Sale of Dividends.*—No purchases or sales of dividends will be permitted at the Board.

ARTICLE XXVIII—*Interest on Dividends.*—In all sales, dividends declared after the sale, and before the payment and delivery, shall go to the purchaser.

When the seller draws the dividend on Stocks sold on time contracts, the amount of said dividend shall be deducted from the price of said Stock, and the deposits made accordingly.

Should a Stock upon which a dividend has been declared be delivered whilst the transfer books of the Company are closed, the purchaser shall have the right to deduct the dividend.

When Mining Companies make Stock or Scrip dividends, the Stock or Scrip so divided shall go with the original Stock for ninety days from date of distribution.

The accrued interest on all Stocks and Bonds, not especially excepted in the By-Laws, shall go to the purchaser.

ARTICLE XXIX—*Assessments.*—In all sales of Stocks, whether on time or for cash, the buyer shall pay any assessments levied and not delinquent at time of sale; provided, that the levying of such assessment by any Company shall have been previously announced by the

Presiding Officer in open Board; but no assessment, whether payable instanter or otherwise, shall be considered delinquent until thirty days from the day on which it is levied.

Where an assessment is levied on a Stock and made payable monthly, or at different periods, in installments, each payment shall be governed by this Article, and become delinquent as follows: The first payment in thirty days from the date of levy; the second, in thirty days from the day on which it is made payable; the third, the same, and so on. The day on which an assessment is levied is not counted as one of the thirty days.

ARTICLE XXX—*Rescinded Assessments.*—On all time sales of Stock after an assessment becomes delinquent, and is thereafter rescinded, the buyer may, upon delivery, deduct the amount of said assessment from the contract price of said Stock.

ARTICLE XXXI—*Charges on Stock advertised for Assessments.*—The seller of Stock shall pay all the charges for advertising delinquent assessments, etc., pending the settlement of time contracts.

ARTICLE XXXII—*Limitations for Reclamation for Assessment of Stock.*—No reclamation for unpaid assessments upon Stock sold by members of this Board, the transfer office of which is in this city, shall be allowed, unless the same is presented within five days from the date of delivery; and when the transfer office is out of the city, the demand must be made within twenty days from the date of delivery.

In the event of Stock which has been sold for assessment being delivered in error, the broker receiving it shall be entitled, within five days from the date of delivery, to demand transferable Stock in lieu thereof; and in case such demand is not made within five days, then the broker who delivered the Stock may settle with him by returning the amount which he paid for the Stock.

No reclamation for any Stock delivered shall be made after the expiration of thirty days, if the transfer office is in the city; and not after sixty days, if the transfer office is out of the city.

ARTICLE XXXIII—*Appropriations.*—No appropriation of any moneys for any person or object whatever, other than ordinary expenses of the Board, as provided by the Constitution and By-Laws, shall be made, unless two-thirds of the members present shall by vote concur therein. Notice of any such appropriation shall be made in writing, and shall lie over one day, and vote thereon shall be by ballot.

ARTICLE XXXIV—*Regulating Commissions—Penalty.*—No member of this Board shall transact any business as a stock broker upon commission at less than $\frac{1}{4}$ per cent., except for another member, when the commission shall not be less than $\frac{1}{8}$ of 1 per cent. Nor shall any member be permitted to avoid the effect of this By-Law in either of the aforesaid cases by means of any rebate, deduction, or allowance; not charging commission on joint Stock transactions or on all purchases or sales in every account, whether on behalf of members or non-members, or in any other manner whatever, susceptible of proof to the satisfaction of the Board of an intention, either directly or indirectly, to evade its provisions; provided that no member shall be compelled to charge commission where the occasion of or the service rendered is of an exceptional or casual nature.

Whoever shall violate this By-Law shall be subjected to the following penalties, and there shall be no power in the Board or its officers to modify or remit any part thereof, except by a vote of two-thirds of the members present: For the first offence, a fine of five thousand dollars, in United States gold coin, shall be imposed, the amount thereof to be equally divided between the complainant and the Trust Fund. The party convicted shall be suspended from all the privileges of the Board until the fine be paid. If the fine shall be not paid within one week from the date of its being imposed, the suspended member shall be considered as delinquent to the Board in the amount thereof, and subject to all the provisions of Article 13 of the Constitution, and Article 25 of the By-Laws, respecting suspended members and the filing of claims against the same, and the amount of said fine shall be deemed as preferred indebtedness over any and all claims which may be presented against the seat of said delinquent.

Upon all second or more convictions under this By-Law, in addition to the penalty already prescribed as aforesaid, and which shall be similarly applied, the offending member, if the said fine be paid at any time before his seat shall have reverted to the Board, shall be suspended for one month after such payment from all his rights of membership. No member, however, shall be deemed to have lost the right of participating in the benefits of the Trust Fund by reason of any conviction or penalty imposed under this By-Law until the forfeiture of his seat shall have been accomplished through the operation of Article 13 of the Constitution.

The President shall appoint a committee of three members, to whom complaints for infringement of this By-Law shall be made. Said committee shall investigate the same under oath, and decide by ballot as to the guilt or innocence of the accused, and report the result of said investigation to the Board.

ARTICLE XXXV—*No Business before Calling Stocks.*—Except by unanimous consent, no business shall be transacted previous to calling Stocks.

ARTICLE XXXVI—*Communications having a tendency to Influence the Market.*—No letters or communications having a tendency to influence Stocks shall be read publicly at the Board, without first being presented to the President.

All communications addressed to the Board, affecting the state of the Mines or Mining Stocks, shall be read instanter.

ARTICLE XXXVII—*Receipts and Deliveries must be made between Members.*—All receipts and deliveries required by the purchase and sale of shares of Stock, must be made directly between the members of this Board; and any member who shall, in completion of such Stock transactions, either receive the Certificate from or deliver them to any person other than a member of this Board, shall be fined five hundred dollars for the first offence, and for the second shall be expelled.

ARTICLE XXXVIII—*Penalty for Employment of Non-members.*—No member of this Board shall employ, directly or indirectly, a non-member to buy and sell Mining Stocks dealt in at the Board, under a penalty of one thousand dollars for each offense.

ARTICLE XXXIX—*Using Indecorous Language—Punishment.*—Any member who shall be guilty of indecorous language or conduct during the session of the Board, shall be fined not less than five nor exceeding one hundred dollars, or shall, by a vote of two-thirds of the members present, be suspended from his seat for not less than one week nor more than one month; and a repetition of the offence shall subject the party so offending to expulsion, and he shall not again be admitted unless by consent of two-thirds of the members present.

A fine of five dollars shall be imposed upon any member who shall stand upon the desks or chairs in the Board-room, either during the session of the Board or after.

Smoking shall not be allowed in the Board-room. Any member violating this rule shall be fined twenty-five dollars.

ARTICLE XL—*Fine for Non-attendance at a Special Meeting.*—When a special meeting of the Board shall be called, the fine for non-attendance may, by a vote of two-thirds of the members present, be increased to a sum not exceeding five dollars.

ARTICLE XLI—*Neglect to Pay Fines for three months—Penalty.*—Any member who shall absent himself from the Board, and omit to pay his fines for a period of three months, may be declared no longer a member. A list of members delinquent for fines shall be furnished the Sergeant-at-Arms, and he is ordered to refuse admittance to the Board-room to all members who fail to pay their bills before the 21st of each month. The Secretary shall notify delinquent members to this effect.

ARTICLE XLII—*Access to the Minutes.*—No person shall have access to the minutes of the Board except the members and their clerks.

Clerks admitted to the business sessions of the Board are prohibited making abstracts and duplicate lists of sales for other than their employer.

ARTICLE XLIII—*Black List.*—Each and every member shall report publicly to the Board the name of every person who shall violate his engagements with him as a broker, after employing him to execute business on commission, or who shall have refused satisfactory settlement of any contract made with or by said broker on his account; and it shall be the duty of the Secretary to keep a book for the purpose of registering the name of every person reported as a defaulter (together with his address), and the name of the broker who shall complain, there to remain until the debt that may have accrued through the medium of the member, in his capacity as a broker, be liquidated. So long as the name of said defaulter or defaulters continue registered upon the books of the Board, no member shall execute or cause to be executed any business for him or them, under pain of immediate suspension.

Suspended members, who have not settled, are subject to the above penalties.

ARTICLE XLIV—*Arbitration of Claims of Non-members.*—Any person not a member of the Board shall have the right to bring a claim against a member of said Board arising from any transactions in Stocks, or money loaned during his membership, on the conditions following, and not otherwise:

The person making such claim shall execute a full release of his claim against said member, duly signed, and shall deliver the same to the President, to be held in trust to abide the event of the suit before said Board.

The President shall keep the said release in trust, to abide the result of said suit, and shall deliver the same to the defendant, on the happening of either of the three following events:

1st. In case the claimant shall not present his claim to the Board within twenty days after executing said release.

2d. In case judgment shall be rendered for said defendant by the Board.

3d. In case the defendant shall pay, or offer to pay to such claimant the amount of judgment rendered in favor of said claimant.

In case judgment shall be rendered against any member of the Board which he is unable or unwilling to pay, then such release shall be canceled and returned to such claimant.

Form of Release.—Know all men by these presents: That I, _____, for and in consideration of the sum of one dollar, to me in hand paid by _____, the receipt of which is hereby acknowledged, have remised, released, and forever discharged, and by these presents I do hereby remise, release, and forever discharge the said _____ of and from any and all demands heretofore existing and due and owing to me, and the said _____ is hereby fully released and discharged from the same.

Sealed with my seal, and dated San Francisco, this _____ day of _____, 187 .

ARTICLE XLV—*Regarding Suspension of Members and Legal Proceedings.*—In all cases where, and in accordance with the provisions of Article XLIV of the By-Laws, a judgment has been or shall be rendered against any member of the Board by the Board, such member shall, without further action of the Board, stand suspended from the time of the rendition of such judgment until the same is fully paid or satisfied, or tendered and refused.

Whenever any creditor of a member of this Board, or any person asserting a claim against a member of this Board, has voluntarily, or shall voluntarily, resort to any legal tribunal, or has voluntarily instituted, or shall voluntarily institute, any legal proceedings against such member concerning his claim, such claim shall not be recognized or enforced by this Board.

ARTICLE XLVI—*Prohibiting Connections and Transactions with Similar Organizations.*—All members of this Board shall cease all partnership connections in any way with members of any similar organization; and also cease executing orders, either directly or indirectly, through clerks or otherwise, in any similar organization, under penalty of suspension.

ARTICLE XLVII—*Providing a Safeguard between Brokers and their Clerks.*—First—All clerks and employees of the members of this Board shall be registered in a book provided for that purpose by this Board—said book to be open to the inspection of members only.

Second—Any member of this Board trading with a clerk or employee of any other member of this Board, after said clerk or employee has been registered in accordance with Section 1 of this By-Law, and not reporting his transactions with said clerk or employee to his employer before the next session of the Board, shall, for the first offense, by a majority vote of the members of this Board, be suspended from and deprived of all his rights and privileges as a member of this Board for the period of thirty days, and fined in the sum of five thousand dollars (\$5,000), said suspension to continue until the fine is paid; and for the second offense under this rule, shall be expelled.

Third—Like penalties shall be imposed on any member of this Board doing business for any other member of this Board suspended under this Resolution.

Fourth—All fines collected under this Resolution shall be placed to the credit of the Insurance Fund of this Board.

Fifth—It shall be the duty of all members of this Board to report immediately all changes in the clerical department of their business.

Sixth—The Secretary of the Board shall furnish each member with a printed copy of said book in which the names are registered, and shall report to the members all changes in the clerical force as reported to him.

Seventh—Brokers' clerks shall not be allowed to trade on the floor of this Board.

ARTICLE XLVIII—*Moneys due Trust Fund.*—The amounts due to the Trust Fund by the forfeited and suspended seats of members of the Board shall be paid out of the General Funds, and charged to each seat respectively.

ARTICLE XLIX—*Reports of Arbitrating Committees.*—All committees appointed to investigate claims against Brokers are required to report within five days from date of appointment.

ARTICLE L—*Bids and Offers confined to Members.*—The bids or offers for the purchase or sale of shares of stock shall, during all sessions of the Board, be exclusively confined to members thereof, and anything contained in these By-Laws conflicting herewith is hereby rescinded.

ARTICLE LI—*Tickets of Admission.*—Section 1. Tickets of admission of visitors of this Board shall have the following printed on the backs of said tickets:

"This ticket is issued on condition that the holder thereof will abide by all the rules and regulations of the San Francisco Stock and Exchange Board, and for any violation thereof the Board reserves the right to cancel the same, and deny the holder admission to the rooms of the Board."

Section 2. None but ticket holders shall be admitted to the Board-room, and no person whatever, excepting members or employees of the Board, shall be permitted to enter within the railings on the floor of the same during any of its sessions.

Free admission for ladies and their escorts to the galleries of the Board-room shall only be granted by cards issued by members.

RULES OF ORDER

FOR EXECUTIVE SESSIONS OF THE SAN FRANCISCO STOCK AND EXCHANGE BOARD.

Rule 1. The President shall call the Board to order. Each member shall take the seat usually occupied by him during the regular sessions of the Board, and remain uncovered while present at the meeting. In all discussions arising, the President shall not participate, but, wishing to do so, shall call some other person to the Chair.

Rule 2. The order of business shall be as follows:

1. Calling the roll.
2. Reading and approving minutes of preceding meetings.
3. Reports of Committees.
4. Motions, resolutions and notices.
5. Unfinished business of preceding meetings.

Rule 3. All questions relating to priority of business shall be decided by the President without debate.

Rule 4. When any question is before the Board, no member shall speak more than twice without permission from the President, nor shall any member interrupt another while speaking.

Rule 5. Substitutes may be offered at any time when an amendment is in order, and when adopted shall be open to amendment. Substitutes and amendments must be germane to the subject matter under consideration, but not more than two amendments shall be entertained to any motion at the same time.

Rule 6. Any member may call for a division of the question when the sense will admit.

Rule 7. When a question is under debate, no motion shall be received but the following :

1. To adjourn.
2. The previous question.
3. To lay on the table.
4. To postpone indefinitely.
5. To postpone to a day certain.
6. To commit.
7. To amend.

They shall be put in the above stated order, and the first four shall be decided without debate.

Rule 8. The previous question may be called for by two members, if seconded by a majority, and shall be put in this form: "Shall the main question now be put?" If carried, all amendments not already adopted shall be precluded, and the main question taken without further debate.

Rule 9. No motion shall be debated until the same be seconded and distinctly announced by the President, and it shall be reduced to writing if desired by the President or any member, and read by the Secretary, before it shall be debated. A motion may be withdrawn at any time before amendment.

Rule 10. Every member, when he speaks shall, standing in his place, address the President, and when he has finished, shall sit down.

Rule 11. When two or more members rise at once, the President shall name the member who is to speak first.

Rule 12. When a member shall be called to order, he shall sit down until the President shall have determined whether he is in order or not. Every question of order shall be decided by the President without debate, unless so invited by him, subject to an appeal to the Board by any member.

Rule 13. When the ayes and noes shall be called for by three members, every member present shall declare openly and without debate his assent or dissent to the question.

Rule 14. When a question has been once put and decided, it shall be in order for any member, voting in the majority, to move for the reconsideration thereof at the same meeting, or give notice of his intention of so doing at the next; but no question shall be reconsidered more than once.

Rule 15. The proceedings of the Board shall be entered on a journal as concisely as possible.

Rule 16. No action of the Board shall be rescinded without the concurrence of two-thirds of the members present.

Rule 17. The President shall have the right to name any member to perform the duties of the Chair, who is hereby vested, during such time, with all the powers of President. Such appointment shall not extend beyond adjournment.

Rule 18. Whenever an executive session shall have failed for want of a quorum, a fine of one dollar shall be imposed upon every absent member. Absence from the city, or sickness of self or family shall be considered sufficient excuse for remission of the above fine.

Rule 19. Any ruling of the Chair may be appealed from by a member. The question on the appeal shall immediately be put in the following terms: "Will the Board sustain the ruling of the Chair?" It shall be open to debate, and decided by a majority vote of the members present, but the decision shall not be subject to re-consideration.

Rule 20. The "Rules of Order" may be altered or amended, after one week's notice in writing shall have been given, specifying the proposed alteration or amendment; but any one of them, or any clause thereof, may be suspended for the time being by a vote of two-thirds of the members present.

PACIFIC STOCK EXCHANGE.

Very much which has been said, as to the objects to be attained by the organization of the San Francisco Stock Exchange Board, will apply equally well to the Pacific Stock Exchange—with this difference, however: the former can point to a longer record of fulfillment than the latter. The members of the Pacific Stock Exchange are no less honorable than those of the San Francisco Board, nor are they individually less generous. They offer to the prospector and the dealer in mining securities the same advantages that are extended to them by the former. They are contributing their full quota to the growth and development of the great mining interests of the coast, and are helping most generously to extend the blessings of civilization into the wilderness by the encouragement they offer to those who push out into the unknown in search of treasures, and ply the pick in bringing them to light.

FINANCE COMMITTEE.

G. FRANK. WM. EDWARDS. LEON WEILL.

COMMITTEE ON MEMBERSHIP.

F. W. BACON. P. J. G. KENNA. THOS. WHITELEY.

STOCK LIST COMMITTEE.

JAS. J. T. HAWKINS. R. C. TOBIN. T. C. SANBORN.

COMMITTEE ON REVISION.

P. S. FAY H. W. PLUMMER. JNO. SEDGWICK.

MEMBERS.

Baldwin, E. J.]	Flat, C. J.	Kelley, Geo. W.	Smiley, T. J. L.
Bacon, F. W.	Frank, Gustave	Kyle, R. G.	Speyer, Leo.
Baldrige, Mich'l	Franks, Fred.	Lederer, Geo. M.	Starr, J. D.
Bourne, J. B.	Gardiner, Baldwin	Lent, Wm. M.	Taylor, W. S.
Berryman, F. A.	Gauthier, Eugene	McDonald, James M.	Tilden, Jos.
Baird, Andrew	Griesinger, Robert	Montelegre, Juan G.	Tobin, R. C.
Boyd, J. F.	Greene, C. M.	Morgan, W. P.	Walcott, A. F.
Colman, M.	Harris, T. H.	Moulder, Andrew J.	Webb, A. H.
Dodge, Geo. S.	Hawkins, J. J. E.	Moroney, Paul	Webber, Mack
Duncan, Wm. T.	Henriques, D. M.	O'Connor, Thos.	Weller, Chas. L.
D'Oyly, Nigel	Hoitt, Ira G.	Otis, Stephen	Whiteley, Thos.
Edwards, Wm.	Hunt, J. L.	Phipps, A. B.	Wood, H. P.
Eppstein, F. J.	Hutchinson, J.	Plummer, H. W.	Wood, W. E.
Elliott, F. A.	Kaufman, S.]	Rich, David	Wolf, F.
Ely, George	Kent, R. F.	Sanborn, T. C.	Wright, Wm. H.
Fay, Philip S.	Kenra, P. J. G.	Sedgwick, John	Weill, Leon

Officers of Pacific Exchange.

CHAS. L. WELLER.....	PRESIDENT.	NIGEL D'OYLY.....	VICE-PRESIDENT.
ANDREW J. MOULDER.....	SECRETARY.	DAVID RICH.....	TREASURER.

DIRECTORS.

CHAS. L. WELLER.	NIGEL D'OYLY.	DAVID RICH.	A. B. PHIPPS.
THOS. WHITELEY.	GEO. W. KELLEY.	FRED. FRANKS.	

COMMITTEE ON BUILDING.

D. RICH. N. D'OYLY. THOS. WHITELEY.

COMMITTEE ON ACCOUNTS.

A. B. PHIPPS. FRED. FRANKS. GEO. W. KELLEY.

THE CALIFORNIA STOCK EXCHANGE BOARD.

Some idea may be formed of the immense amounts of mining Stocks which exist in the country west of the Rocky Mountains by glancing through the long list of mines, to be found in another part of this work. It is true, all these companies are not fully organized, but by far the greater number are at work and have more or less stock abroad in the community. The quantities of these stocks which are bought and sold may be estimated from the recorded accounts of the transactions of the Board of Exchange. Yet the names of the mines whose stocks are called in the Boards are but few compared with the whole number of incorporations. The fact is, we of the coast are a stock-dealing people, and demand great and continually increasing facilities for the transaction of business in this line. The necessities which led to the organization of the first Exchange Board are detailed elsewhere, as is also the amount of work it has accomplished. The following account of the organization of the California Stock and Exchange Board is not devoid of interest, nor is it without its bearing on the general subject:

In January, 1872, just after the bonanza in the Crown Point and Belcher mines had been developed, a number of gentlemen determined to try again the experiment of establishing another Board of Brokers in San Francisco. There existed an apparent necessity for its establishment, for there was at that time more business in the stock-dealing line than could be transacted through the San Francisco Stock and Exchange Board. During the day, and especially between Boards, the street was filled with anxious buyers and sellers, all clamorous for bargains.

The originators of the California Board were forty in number, many of whom were brokers of experience, having had connection with similar organizations before. The forty charter members were John Middleton (since deceased), T. J. L. Smiley, Jackson McKenty, S. Barrell, S. Hyneman, W. W. Lawton, M. D. Townsend, W. H. Wright, H. S. Fitch, Chas. L. Weller, E. L. Smith, A. C. Chick, Joseph Klopenstine, Joseph de Sta. Marina, H. C. Logan, M. Rudesdale, J. P. Cantin, W. H. Brown, Wm. Jay Smith, T. J. Poulterer, T. C. Sanborn, J. F. Crossett, A. Diffot, R. F. Kent, F. Wolf, E. S. Tibbey, R. Broderick, E. J. Baldwin, C. C. Harvey, W. J. Williams (since deceased), J. B. Bourne, J. R. Maxwell, Louis Lacour and J. Tilden.

The Board so organized provided for a membership of seventy, and the remaining thirty seats were rapidly taken. At the organization T. J. Poulterer was elected President; T. J. L. Smiley, Vice-President; W. W. Lawton, Secretary; E. J. Baldwin, Treasurer; James Tilden, Caller, and John Gray, W. J. Williams, and Joseph Tilden, Members of the Executive Committee.

The first session was held February 1st, 1872.

Business subsequently increased very rapidly, and the transactions of the Board attracted general attention. After a short term of service, Mr. Poulterer resigned the office of President, and was succeeded by Mr. Smiley, who held the office till April 1st, 1876.

After the organization was completed, the number of seats in the Board were reduced to sixty-two, the present number. The prosperity of the Board is evidenced by the fact that, during the first year of its existence, the sales amounted to \$16,000,000. Seats increased in value until, in April, 1875, \$2,000 was offered and refused. The total sales up to this date amount to over \$80,000,000.

At the organization of the Pacific Stock Exchange, twenty-six of its most active members were drawn from the Board into what promised to be the more powerful body, and others afterwards followed. This was, of course, a severe blow to the organization, but it has survived it. The vacant seats were readily filled, and the career of its usefulness continued. When the Bank of California suspended, it was the only Board to continue its daily sessions and transact its regular business through the dark and trying times which followed. The consequence has been a greatly increased amount of business, the unlimited confidence of the people, and many responsible applicants for membership.

The Constitution and By-Laws of the California Stock Exchange Board are nearly identical with those of the San Francisco Stock and Exchange Board, to which the operator is referred. The cost of listing a mine upon this Board, however, is only \$100 once, and an annual renewal fee of \$25.

Officers and Members of the California Stock Exchange Board.

J. L. ARMSTRONG.....	PRESIDENT	T. E. LUTY.....	VICE-PRESIDENT
G. E. CARTER.....	SECRETARY	JOHN GRAY.....	CHAIRMAN
GERMAN SAVINGS BANK.....	TREASURER	P. CROWLEY.....	SERGEANT-AT-ARMS

EXECUTIVE COMMITTEE.

A. C. WIGHTMAN. H. H. BURLING. ROBERT CORDS.

MEMBERS.

Aiken, Charles	Green, J. J.	Klewisch, J. O.	Reynolds, Thomas
Armstrong, J. L.	Hart, H. H. H.	Lanmon, George	Rychman, Wm. L.
Baldrige, J. E.	Harvey, C. C.	Lebatard, M.	Sparks, I. C.
Buell, Charles S.	Hayhoe, J.	Luty, F. E.	Sperling, M. E.
Carter, G. E.	Herrera, F.	Marina, J. De Sta.	Sweet, H. A.
Conger, C. C.	Hirshfield, C.	McDonnell, J.	Todd, A. H.
Cords, Robert	Hoare, Charles	McGrew, A. F.	Warren, S. P.
Downing, H. C.	Howell, S. S.	Page, J. P.	Westheimer, J. F.
Frank, Samuel	Hyneman, S.	Price, B.	Wightman, A. C.
Garish, August, Jr.	Jewell, J. G.	Rea, A.	Yeazell, A. H.
Gray, John	Kahn, S.	Rea, C. T.	

The Board occupies very handsomely fitted-up quarters, on Leidesdorff Street, in the very heart of the stock-dealing district.

BIOGRAPHICAL SKETCHES.

JOHN W. MACKAY.

The notable subject of this sketch—the youngest member of the Mackay-Flood-Fair combination—was born in Dublin, Nov. 28th, 1835, and therefore is on the sunny side of forty-three. He came to America a mere lad, and for some years found employment in the office of Wm. H. Webb, the famous ship-builder of New York. In the Fall of 1852, he joined a party bound for California, and, about the close of that year, he reached his destination, having made the passage in a vessel built by his former employer. Young Mackay immediately engaged in placer mining at Alleghany, Sierra County (Cal.), where moderate success rewarded his efforts. He did not drift into mining, and delve among the rocks and sand, as a make-shift, as was the case with a majority of those who arrived here in the golden age. He entered mining as a profession. He entered mining to stay, and he did stay. He did not have luck above that of other men. On the contrary, when we average the early events of his mining career, we find that he had his full share of misfortune. He did not lose a fortune in those early days, for a reason that readily suggests itself to the reader; but this fact did not prevent him from undergoing many of the privations incidental to a mining career in less recent California and Nevada. Fortune smiled slightly on Mr. Mackay while he was working the placers in Sierra County. It was a sickly sort of smile. Still it was a smile, and the result

was, he secured sufficient money to proceed to Virginia City (Nev.), and inaugurate an enterprise of his own. In connection with Kinney Said, he started a tunnel in what was then known as the Union ground, north of the Ophir mine. Here Fortune frowned on him. His funds were speedily exhausted, as a matter of course, and once more he started for a competency. He made his bravny arms earn him four dollars a day as a timber-man in the Mexican mine. He also swung a pick and shovel in the mines at a similar rate of remuneration. His ideas of wealth were very moderate in those times. There was no limit to his ambition, if we are to accept the narratives of his old comrades; but his chief desire was to accumulate \$25,000 for the purpose of soothing the declining years of a beloved mother. This desire affords a good index to the man's character. He is just the kind of man to express such a desire. His fidelity and rugged integrity are as prominent to-day as they were when he worked for wages and earned all that he received. It is pleasant to speak well of one's fellow-man under almost any circumstances; but it is doubly pleasant to do so when you feel that you are telling plain facts. Mr. Mackay's early life in the mines affords texts for interesting and instructive homilies; but a deference to the natural modesty of the man forbids any literary embroidery. The first substantial start made by Mr. Mackay was in connection with the Kentuck mine, in Gold Hill. After many changes of fortune, he became interested with J. M. Walker (brother of ex-Governor Walker of Virginia), in 1863. This firm was enlarged by the addition of Messrs. Flood & O'Brien in 1864, and so continued until 1868, when Mr. Fair took the place of Mr. Walker. The first few hundred thousand of the now stupendous wealth controlled by this firm was made during their control of the Hale & Norcross mine, in 1865-6-7. The career of Mr. Mackay, since that time to the present, has been chiefly noticeable for the active part he has taken in the incessant and successful efforts made by the partners to obtain further acquisition of territory on that marvelous deposit of ore known as the Comstock Lode. Backed by their constantly increasing capital, their efforts have resulted in opening to the world the wonderful Consolidated Virginia and California, known as the "Bonanza" mines. On the 25th of November, 1867, Mr. Mackay married a most lovely and accomplished lady, the daughter of Colonel Daniel E. Hungerford, of the Army. They have two children to brighten their household. Mr. Mackay has made his home at Virginia City, and during most of the time, since the discovery of the bonanza, he has largely directed the destinies of the firm, in which he has a three-eighths interest. His decision of character, his shrewdness, his application, and, last but not least, his personal popularity, have largely contributed to the renowned success of what is known as the bonanza combination. He is one of the few men whom fortune has not spoiled. He has stood the test well. His liberality has again and again placed old friends in affluent positions. We could illustrate this generous nature by numerous statements of facts within our knowledge—facts that would absolutely startle the world. But the limits of this book would not compass the illustration. In deference to Mr. Mackay's feelings, and with a proper regard for the proprieties, we abstain from giving details. Whether at his mansion in Paris, or in the dripping depths of the mines, he is the same quiet, manly, unostentatious John Mackay. At present writing, Mrs. Mackay resides in the French capital, where the children are being educated, and where, it will be remembered, she aroused the national pride of Americans by entertaining the late Chief Magistrate of the United States in princely style. In closing our sketch of Mr. Mackay, we may remark that the gentleman is of Herculean build, easy of carriage, and has a genial presence. He looks the man he is—the prince of miners and boss of the big bonanza.

We cannot dismiss the subject of this sketch without making a plain statement for the benefit of those who are not familiar with the discovery of the great bonanza. There is a popular idea—though a very erroneous one, by the way—that the bonanza discovery was simply a piece of luck; such luck as might befall any miner. The circumstances that preceded this discovery are overshadowed by the importance of the find itself. How many people realize the difficulties attending the search for this marvelous body of ore? The answer is very faint. Why, when Mr. Mackay and his associates inaugurated their search for the bonanza, the ground involved in their prospecting operations had been abandoned by Mr. Sharon and other large operators. Mr. Mackay did not begin work with the definite knowledge that he was bound for a bonanza. By no means. Here, in a nutshell, is what occurred: Believing in the richness of what is now the bonanza territory, Mr. Mackay and his associates purchased the controlling interest in the corporation then owning the ground, and began the hunt for the ore body. The tax upon the patience, endurance, and skill of the bonanza people can barely be imagined. They paid out not less than \$500,000 (and at a time when that sum was more to them than \$50,000,000 is to-day), to carry on this prospecting operation. Prominent men in the district, who had succumbed to discouragements, looked with disfavor on the work being done by Mr. Mackay and his partners. It would not pay for the trouble and expense. That famous drift from Gould & Curry through Best & Belcher, and into the old Virginia ground, was run over 1,200 feet before it made the strike that gave the bonanza to the world. What trials and tribulations, what heart-aches, what hopes and fears, were involved in that drift, we may never know. That the drift was under the best of management, however, has always been an acknowledged fact. The results of that management have made an imperishable impression. And to John W. Mackay, in particular, that impression owes its existence to-day. He led the forlorn hope.

JAMES C. FLOOD.

James C. Flood was born in New York city, about 1826, and is now in his very prime. His early education was most practical in its character. He did not enjoy the benefits of a collegiate career, but the instruction he received in the ordinary English branches was systematic and thorough. In 1849 he took passage for California in the ship "Elizabeth Ellen." His brains constituted his sole capital. He had no rich or influential friends to lend him a helping hand. What he is to-day, he owes to himself. In 1854 he associated with the late W. S. O'Brien, and the famed firm of Flood & O'Brien was formed. Concerning the subsequent career of Mr. Flood, we quote the following sketch from the *San Francisco News Letter*:

The first notable enterprise engaged in by Flood & O'Brien, consisted of operations in the Kentuck and other mines on the Comstock, in which they generally contrived to secure a controlling interest. This was as early as 1862. Their operations in Hale & Norcross, a few years after, were on a scale so large as to attract general attention to them as mining speculators. But the operation which finally made the name of this mining firm known throughout the world, has been compressed within the short space of a few months in the early part of 1875. The existence of those vast bodies of ore in the Consolidated Virginia and California mines, which gave them the name of *bonanza*, thus adding a permanent word to the English language, was suspected as early as February, 1874, and were made certain by the proprietors in December of that year. The generosity with which they dealt with those who had the good fortune to be their friends, is now generally known in this community. They were not content to see their own fortune growing with colossal strides each hour, but desired all who had been kind to them in the past to accompany them on the road to prosperity. Many of our wealthiest people of to-day, if we thought proper to name them, would confess that to the fortunate circumstance of their good relations with Flood & O'Brien in years gone by, they alone attribute their being rich instead of poor. The establishment of the Nevada Bank is the idea of Mr. Flood, who has resolved that his bank shall grow up in San Francisco, sound in capital, and with a reputation throughout the world, that shall be built upon genuine merit. In appearance Mr. Flood is prepossessing, strong, and about five feet ten inches high, compactly built and robust form. His complexion is a healthy blonde, with a serious but pleasant demeanor, and a grave and sedate carriage, befitting the earnest nature of the man. It has been remarked by thoughtful men to whom Mr. Flood has been known from youth, that all he is now was foreshadowed in him from the first; that whatever situation he was placed in for the moment, he was always equal to, and performed his part in a grave, quiet and thoughtful manner, marked rather by force held in reserve than by that actually employed. His bearing towards others was always that of the inborn, natural gentleman, invariably courteous and gentle to all, and never failing to receive like consideration from those he met; inherently confident of his own position, never dreaming that it could be questioned by anybody. And this was in no respect more marked when occupying the humblest position that chance has imposed upon him, than now that he is one of the heaviest capitalists of America.

The foregoing paragraph is correct, as far as it goes, but it does not tell the whole story. The account was published many months ago, and since its appearance, Mr. Flood has become one of the leading financiers of the age. His power of mental concentration, his quickness of perception, and his great liking for finance, have combined to make him the financier of the great bonanza firm. Those who know the gentleman best, and, at the same time, are competent to form a correct estimate of Mr. Flood's capacity, place him in the front rank of the world's financiers. He is a persistent and intelligent student of financial history, and keeps himself thoroughly informed on the progress of finance. It is almost superfluous to remark that Mr. Flood is an incessant worker during business hours. He is, however, devotedly attached to the home circle, and his surroundings are of the most pleasant character. He spends the Winter months at his plain and unostentatious residence on Eddy street, but the Summer nights are passed at San Mateo, where Mr. Flood has one of the most attractive country seats on the Pacific Coast. Mr. Flood's family consists of a wife and daughter, who are at home just now, and a son about twenty years of age, who is traveling around the world in company with Dr. G. D. B. Stillman, the distinguished physician. This sketch might be greatly amplified, if the importance of the subject were the sole consideration, but we have given all the facts in which the public are interested, and that must suffice for the present.

JAMES G. FAIR.

The subject of this sketch is best known to the general public as a member of the Bonanza firm. But among miners and mining men he is accorded rank as one of the most accomplished mining engineers America has ever developed; and there are experts, traveled and experienced gentlemen, who do not hesitate to say that in the mechanical management of colossal mining enterprises Mr. Fair has no peer. He was born December 3d, 1831, in Clougher, Tyrone County, Ireland, and came to this country in 1843. He attended school at Geneva, Illinois, for several years, and subsequently secured a good business education at Chicago. In common with other adventurous spirits, Mr. Fair was infected with the gold fever in 1849, and in August of that

year he arrived at Long's Bar, Feather River, California. He mined on the bar for a while, but failed to strike a profitable placer. It was natural that he should turn his attention to quartz mining. Placer mining was conducted in a primitive style in those days, and did not afford Mr. Fair fitting opportunities for the exercise of his peculiar mechanical genius. From the placer bar to the quartz mine was an easy transition for him. We next hear of his being engaged in quartz mining at Angels, Calaveras County, California. And at a later period he figured as the superintendent of quartz mines in other California counties. Even in the early days he ranked high as a professional miner. In 1855, Mr. Fair assumed the Superintendency of the Ophir mine, and in 1857 the Hale & Norcross came under his direction. During their connection with the latter mine the Bonanza firm secured the first half million of their princely fortune. The idea then occurred to Messrs. Flood and Fair, of the then moderately successful and comparatively unknown firm, to obtain control of what was then known as the California and Sides mine, the White and Murphy, the Central (Nos. 1 and 2) and the tract known as the Kinney ground. The claims were eventually secured, and to-day form the famous Consolidated Virginia and California mines. The action of the firm in regard to their efforts to obtain control of these particular claims was predicated, we believe, almost entirely upon the opinion and theories of Mr. Fair, in whose unerring judgment and remarkable knowledge of everything connected with mining matters, his *confreres* relied upon implicitly. The result of this gentleman's predictions and calculations are familiar to every one in our midst. The life of Mr. Fair, since the immense wealth of the great mines poured into his lap, has been that of any sagacious capitalist of vast means. He began speculation in real estate in this city sometime in 1858 or '59, and owns nearly seventy acres in different parts of it. Now this property is of itself a colossal fortune. A short time ago Mr. Fair contracted the rheumatism in the depths of the Bonanza, and in order to ensure a speedy recovery, he resigned the Superintendency of the Bonanza and other mines, and took the rest which his medical advisers prescribed. Mr. Fair's robust constitution speedily shook off the disease, and his health is now up to its usual high standard.

Mr. Fair has purchased the elegant residence of Hon. Milton S. Latham, (Menlo Park) valued at little less than one million dollars, and he has also secured an elegant and spacious residence lot on the summit of California street hill. In person Mr. Fair is about the medium height, strongly and compactly built, and with his alert carriage and handsome face presents an exceptionally striking appearance. He has a devoted wife and four interesting children. His present home is at Virginia City.

HON. WILLIAM SHARON.

A biographical sketch is more interesting, and more profitable to the reader, when it presents those characteristics and qualities which serve to make its subject appear the exemplar of his fellow-men. Nothing incites man to the performance of noble deeds more than the record of noble deeds performed. A character distinguished for pertinacious effort, for persistency of purpose, for unswerving integrity, for skillful management of his own or public affairs, for a will to do and a mind to dare, unmoved by disaster, and resolute under the most trying vicissitudes, is not so common that the public will be found indifferent to it.

Our subject is reported to have been born in the State of Ohio. When a young man we knew him as an attorney-at-law, in the State of Illinois, manifesting a bent toward the mercantile business (in which his brother was then engaged), rather than to the profession for which he had received his education.

In 1849 he came overland to California, and at once took in the possibilities of making a fortune as an operator in real estate in San Francisco. The records of the county from 1850 to the present day show an extent and magnitude of his transactions unequalled by any one operator in the city of San Francisco. In 1863 he was induced to take the agency and general supervision of the Bank of California in Gold Hill and in Virginia City, State of Nevada. At about the end of the first year of his agency and management of these branch banks, Mr. Ralston paid him a visit. This visit happened at one of the periods of *darkness* on the Comstock. This great silver and gold producing belt was in eclipse. The ores of the Virginia and Gold Hill mines had suddenly ceased to be remunerative. The mills in great number were unsupplied with ore, and out of employment. The prospect seemed very discouraging and unpromising. Mines of silver which had been regarded as interminable in their endurance and extent downwards, to the consternation of all had ceased to be remunerative or profitable to work. To the quick perceptions of Mr. Ralston, the loans in large sums upon these properties seemed lost, or nearly so, and he became apprehensive that the credit of the "home institution" would be impaired, and manifested the most decided uneasiness at the situation. The prospect of recovering the money struck Ralston on the cold side, and, in his impetuous way, said to Mr. Sharon that he would feel the greatest relief if he could find a person who would assume the responsibility of returning the large sums loaned, upon a most liberal allowance of time. Mr. Sharon at once proposed to stand responsible to the bank for the full sum on condition that the bank advance to him a considerable sum, which should be used in running certain drifts contemplated by him, and give him two years to make the total payments. Mr. Ralston preferring

to look to Mr. Sharon rather than to the properties acquired, and to the securities held by the Bank, entered into an agreement upon the terms proposed. Mr. Sharon here manifested something of the spirit of reliance, will-force and sagacity which subsequently distinguished him as a man of mark. He had examined with the greatest care every mine, in every part, and had become the *mining expert*, as well as banker. He called to his aid, however, the best judgment of men of mining experience, and made a most thorough survey of the mining properties in which he had now become interested, and finally determined to drift *for a strange ledge*. A profound reasoner, he had come to the conclusion that where one man was found the country was likely to be populated; that one line of mineral gave promise of a neighbor; and that Nature was not given to eccentricities in the deposit of her stores of treasure;—that she might exhibit faults and sometimes dance upon a tangent, but soon or late comes down to business and makes her precious “plant.” A drift was at once undertaken, and prosecuted with prodigious vigor. That drift developed not only a new deposit of ore, but it very soon exposed to view the “King of the Comstock.”

The Fates for once were gracious. They yielded to human will. They prospered an inflexible intent. The music of the mills resounded along the cañon; the miners were set again to work; the face of nature, in the Sagebrush State, beamed anew in pleasant aspect. Pluck had found its reward. The mysterious process of standing an egg on end, had been solved. Other drifts were run, other ore deposits found, and the whole line gave token of new life. Within four months from the date of Mr. Sharon’s assumption of the “forlorn hope,” as Ralston termed it, he was enabled to pay to the bank the whole sum due to it from these branches, and he had placed on deposit to his credit the snug sum of \$750,000. From this date, the managers of the Bank of California came to understand that the services and co-operation of Mr. Sharon were an indispensable necessity. Henceforth Mr. Sharon became the recognized leader in enterprises of the greatest magnitude on the Comstock, and these were managed with such adroitness and skill, that he was regarded as the financial chief of the Pacific Coast. His name was added to the directory of the bank; and although much of his time was employed in the management of its connections in Nevada, this institution evinced the thrift which his genius planned. But it is not for these exhibitions of his character alone that we are specially moved to write this sketch. The Fates employ peculiar methods to test their favorites. Lest the world shall ascribe success too much to a “chance shot,” they called the Furies forth, and on a Summer day “Hell broke loose” upon this human head. The time to try men’s souls had arrived—none too soon, perhaps, for all concerned; and if our subject were to fail in this, the stamp and seal of a great character must rest on worthier brow than his. There came a day when gibes and sneers and rollicking laughter and the open speech of business men were hushed as by a thunderbolt; when men moved on the streets with visages cast down; with furtive glance; with bated breath and low-toned voice and scarcely audible whisper, told the sad tale of ruin, of beggary; of a sorry future before their eyes; of misery immeasurable!

The great Bank of California *had suspended!*—and Ralston, great-hearted Ralston, had drawn the veil upon a life that had lifted enterprise into exaltation, and reared monuments of grandeur on either side his pathway. The citizens of San Francisco will not forget that dreadful day while they shall live. The streets around the bank, packed with men and women; not a face among them all that gave an angry look! From no tongue was uttered one resentful word! The sad moan of the multitude was breathed in a monotone, with more of the *sigh* in it than audible utterance. We stood in that throng, looking upon the closed doors of the bank. The small sectional door was opened, and our subject stepped through it upon the sidewalk, and for a few moments cast a steady look upon the mass of human faces turned upon him. His face, habitually mobile and imperturbable, expressed for a moment that touch of sympathy which can never be told in words. The multitude seemed to understand it, and raising his hat with more the purpose of admitting the cool air to his throbbing brain than in salutation, he turned with a step and manner full of resolution and walked away.

The last sad obsequies had been paid to his friend. Rumor had filled the air with stories which touched the honor of that friend, and made the resuscitation of the bank an apparent impossibility. The commercial distress had become appalling. The confidence which had been reposed in other lesser banking-houses was suddenly withdrawn; as was manifested by the general run upon them by depositors. The sweep of this tremendous wave of distress enveloped all business, and must be stayed at whatever cost. That which seemed impossible must be made to appear possible; that which was regarded as impracticable must give way before the practicable; the career of this panic must be checked; the shrinking of all property values must end. Action procrastinated was speedy destruction—delay was death. As with an epidemic scourge or a sweeping conflagration, the brains of men became unbalanced, ungovernable, or paralytic.

Here and now arose the invocation for a redeemer—a power who could command the waters to “be still,” and be obeyed—a body corporate or incorporate, who could smooth down the waves of despair—an inflexible Achilles, if need be, who would defend the name and honor of his deceased friend; who would re-adjust the deranged and broken links of capital, restore again the confidence of the people, revive trade, and place again the commerce of the city and State upon a prosperous career. Who shall it be? If mortal, let him appear! Come forth!

The first movement of consequence was the indefinite adjournment of the meetings of the

Stock Boards, which had only to be suggested by Mr. Sharon to be followed with alacrity. The next move which appeared was the calling together of the principal stockholders of the Bank of California, with a request to some other capitalists to be present, for the purpose of considering a proposition for the re-establishment of that institution. Both of these movements were made at the instance of Mr. Sharon. These trustees, stockholders of the Bank, and others invited, assembled at the hour appointed. It has been said that this assemblage appeared the worst whipped and most incredulous that ever met in California. The meeting was called to order, and Mr. Sharon arose to his feet and addressed those present briefly, to the following effect:

"Whatever there may be in the internal administration of the bank to condemn, it is not the work of this moment to investigate or portray. We meet under the most trying circumstances that can happen to business men.

"Every one present, either directly or indirectly, is allied in interest with the Bank of California. What this bank has been and what it has done, in the service of the interests of this coast, you all know. It was founded in the earlier days of our ambition, and should live, the lasting monument to our sagacity, our energy and our just pride. This seemed probable a month ago. Today, the Bank of California, and all its fair credit, is engulfed in a nameless but total loss. The financial earthquake has reft this noble structure from roof to foundation stone. I have called you together to inquire if the name, the "Bank of California" be worthy of perpetuation. This hour decides the question. If we decide affirmatively the moment has arrived when the pillars of this edifice must prepare to render to it an extraordinary support. If these pillars, already weakened by this heavy strain, shall totter and fall *now*, the hopes of the future to any of us, must remain indeed without promise. In financial affairs, it will be well for us to remember, that courage has its hour of trial, and victory its sufficient joy; but submission to defeat propitiates misfortune, and brings on miseries multiplied. I have a plan to submit to your consideration, which if adopted by you will result in re-establishing this bank upon an absolutely safe foundation, return to each subscriber the funds advanced to it, bridge over our larger losses, and place us all in a position of comparative ease. Not only this, but the vast interests of the people of this coast, at this moment shrinking and paralyzed, may become lifted again unto their accustomed courses of thrift. The powerlies with us. It is our appointed duty. Let us act like men. I will read to you my plan."

Mr. Sharon set the example by making an astonishing subscription. Others came forward one after another. The subscription became full. The bank again threw open its doors for business, and the people hailed the event as a blessing, and deposited with it again as of old.

Few there are who have any conception of the arduous task which had been undertaken by Mr. Sharon. His personal attention to the affairs of the bank, to strengthen the nerves of the subscribers, to help them when they were weak and disposed to desert the ship, to change some for others who would be to him less troublesome, was for a considerable space of time his anxious and daily care.

The generous outlay of his energies, time and money in the settlement of Ralston's affairs, has been altogether a munificent bestowal. These, with the necessary attendance to his own private matters, altogether forming an amount of business rarely equaled in the history of the world, given to *one mind, personally to attend to*, and duly and satisfactorily accomplished, leads us to regard Mr. Sharon, as the financial and business marvel of the age.

The constituency of Senator Sharon may well regard his service of their interests as unequaled in the work of restoration which he has accomplished, and they have shown their appreciation of his purposes by uttering no complaint at his absence from the U. S. Senate, during the last session.

Mr. Sharon having done fully and well the work he had resolved to do, in the re-establishment of the bank, the settlement of the vast affairs of his friend Ralston, and the building anew the grand superstructure upon which the people of the coast may depend for success, stands now ready to give his attentions to those eminent duties of the statesman, to which he has been called by the people of Nevada. We wait his record in that highest legislative assembly of the nation with confidence. The past has shown him worthy. Every presumption is to be taken in his favor. We shall see.

U. S. SENATOR J. P. JONES, OF NEVADA.

Here is a gentleman whose biography is a history of mining in California and Nevada. That is, a history of this great interest in these States, with the Senator's connection therewith omitted, would be like the play of Hamlet, with the character of Hamlet left out. Those who estimate the influence of this gentleman on the mining interests of the country by his connection with some of the richest mines on the Comstock Lode only, reckon without their host, for, prominent as he is as one of the millionaire miners on that wondrous lode, the influence of his wealth and energy on the country is better measured by his outside, almost unknown investments and gigantic enterprises, some of which we shall refer to in our sketch.

Senator Jones was born in England, in 1829; brought to the United States by his parents in the following year. They settled in Ohio, in which State the Senator was raised, coming thence to California in the Spring of 1850, after a nine-months' voyage around Cape Horn. Not yet twenty-one when he landed here, full of hope and energy, he lost no time loitering amidst the vice and wastes of San Francisco, but went direct to the mines in search of gold. There is scarcely a mining county in the State in which he has not worked as a miner—not by proxy—but with his own clear head and vigorous hands. We remember him working in a rich placer on the Stanislaus River, Calaveras County, as early as the Summer of 1851. Soon after, he was the owner of a rich claim on Wood's Creek, near Sonora, Tuolumne County. Then he went into Sierra, Butte, Nevada, Shasta and other mining counties, where he worked for years in those long, dreary tunnels, those monuments of labor and faith, which pierced nearly every mountain side in search of those deeply-hidden deposits of gold, from which the commerce of the world has been so enormously enriched. With the proverbial "miner's luck," many a "pile" the now famous Senator made and lost at the hazardous game of tunnel mining, spending the fruits of years of toil in shallow placers, to reach the grander prize of some table mountain lead, till he finally "struck it rich." To follow him all through his rugged path to success and honor; to record the incidents of such an eventful life as his, would require an entire volume of the *MINING REVIEW*. We can only briefly refer to his most important enterprises, such as that at Kernville, Tulare County, where he has extensive and valuable quartz mines, and one of the largest and best equipped mills in the world. This is saying much in these days of mammoth mills, magnificent reduction and hoisting works. This Kernville enterprise illustrates the Senator's fixidity of purpose and disregard of cost in carrying on his operations. Knowing that the ledge is sufficiently rich to warrant the outlay, but its development being impeded by water in the lower levels, he has put up machinery which, for more than two years, has been constantly pumping water at the rate of 10,000 gallons per minute.

Another of his great enterprises, and the only one he ever gave up without succeeding, was an attempt to develop the Panamint mines, in Mono County, which, after spending millions of dollars, he abandoned. To show the man's breadth of view and grasp of purpose, it may be mentioned that he had intended to connect this Panamint enterprise by rail with the Pacific Railroad in Nevada and with the coast. For this purpose he built the railroad and bought the site of the pleasantly located and prosperous town of Santa Monica, where he has built extensive wharves for the accommodation of steamers and sailing vessels. He had a corps of surveyors and engineers employed for months, examining the practicability of making a canal, roads, and a railroad across the Colorado Desert, to connect Nevada with the coast.

Equally gigantic have been his enterprises in the States of Nevada and Oregon. At one time he controlled the Ophir, Savage, and Crown Point mines, on the Comstock, not for mere speculation, to manipulate the stock market, but to develop for the benefit of the stockholders. He has a large force of men at work developing some valuable gravel mines in Eastern Oregon. Nor are his operations confined to mining, or to this coast. He is the owner of extensive establishments for the manufacture of artificial ice, at Atlanta, Georgia; New Orleans; Dallas, Texas; and other places, where immense quantities of ice are annually made, with costly, patented machinery. He is the owner of the famous Hammam Baths, on Dupont street, San Francisco—the most complete and costly establishment of the kind in the United States. A few years ago, he purchased 12,000 acres of land at the confluence of Napa and Sonoma Creeks, which was subject to overflow by both fresh and salt water. Around this land he has had built a dyke with sluiceways, and will have it thoroughly reclaimed, plowed, and made fit for cultivation, and, when ready, will divide into 120 farms of 100 acres each. He has expended nearly \$200,000 in this great work of making a small-sized Holland in California—making some of the most valuable land in the State out of what, without his enterprise and wealth, would have remained, perhaps forever, a dreary waste of mud. He has invested his means in almost countless works for the development of the resources of the country, and to increase the comforts and prosperity of the people—giving employment to thousands of the industrial classes. To his honor it may be stated, that, although his generosity has been a weakness, and his aid to enterprise almost general, he has never loaned a dollar on interest to any human being. All his great wealth has been employed in productive industry, in which others as well as himself have profited by his experience, skill, and energy.

Although laboring with hand and head for years in search of gold and silver, few men have devoted a greater share of their time to self-culture than Senator Jones. His political career, which culminated in his being elected to a seat in the U. S. Senate, was as vigorous and energetic as his search for gold. Of massive mold and pleasant aspect, and a fluent speaker, the hills and valleys of many a mountain district have reverberated with hearty applause at his sallies of wit and scraps of pathos, long before he took a leading part in the State Legislature. The same vigor of expression, the same industry in gathering materials to add force to his remarks, that have made him one of the most effective speakers in the U. S. Senate, was ever characteristic of the man. His masterly speech on the remonetizing of silver, during the last session of Congress, is recognized in this country and Europe as one of the most valuable additions to general information on the subject of coinage that has ever been written. His deep and laborious investigation of the question of finance—a question

that is agitating the whole civilized world—when matured will place him in the van of modern political economists.

There is something romantic—we had almost said exciting—in the career of such a man as Senator Jones. Landing alone, a mere youth, amid the wildest, most reckless men attracted hither from all parts of the world in the exciting search for gold, he has distanced hundreds of thousands of competitors in the race for that prize. While tens of thousands have fallen on the way under the influences of vice and intemperance, he pursued the even tenor of his way, cultivating his intellect, preserving his physical and moral health, so that when he reached the goal of his desires, we find one of the richest, most generous, intellectual and purest men of the age made out of the rude materials of an "honest miner." With the immense resources at his command, and his whole will-power and matured intellect devoted to the solution of the great problem of finance, nothing short of the paralyzing hand of death can prevent him reaping as great fame as a financier as his cruder efforts achieved fortune in the mines.

JAMES R. KEENE.

"Thou art so far and yet so near," that no series of sketches of men prominently identified with the stock interests of the Pacific Coast would be complete without a pen portrait of James R. Keene, the free lance operator of the San Francisco Stock Market, who dared to beard the Bonanza Kings in their den, and came off victorious with many shekels of gold and silver. Mr. Keene is no longer with us. Some time since, after having realized largely on his stock ventures, he concluded to take a trip East, to be extended to Europe, unless on the Atlantic seaboard he regained the health which too active exertions on the Pacific had impaired. And so he went, with his family. Those who bade him God-speed, expected to see him return within a few months—certainly within a year—with recovered health, new ambitions, new conquests to make. But he comes not. New York has presented more attractions than his old love, San Francisco. Railroad stocks, Jay Gould, gold, Sam. Ward, Rufus Hatch, Long Branch, Trenor W. Park, Newport, have been too many attractions for Jim Keene. He fell into the New York market as easily as any man generally falls among thieves—but he seems to have got the best of the thieves in every issue. When it was rumored that Keene contemplated making Wall Street his headquarters, his old San Francisco friends generally wrote out their calendars, and figured up when "Jim" would be back, bursted out and out, looking for a job. A few who had abiding faith in Keene; who knew his pluck; who had gauged his capacities; who had measured his horse sense, consulted their calendars and said, "Jim is gone! he never will come back to couch his lance in such a narrow field as ours. New York is big; Wall Street is big—just about the size of institutions that Keene wants to tackle." The few were right. Keene hasn't come back to look for a job; he has tried conclusions with the smartest of the Wall Street operators, and novice that he was, came out triumphant. The California goose that was to be plucked, wasn't plucked. Even Jay Gould, with all his shrewdness, gave it up as a bad job; and Vanderbilt condescends to confer with Keene on momentous occasions.

Keene started in his career as a Stock operator years ago, in San Francisco. He first was conspicuous as an impulsive, dare-devil sort of a street broker; acting for big firms, with an occasional dash for liberty and himself. Gradually he worked his way from steerage to cabin—from the private's ranks to that of lieutenant of the watch—then to officer of the day—and, finally, boss of the Stock concern. No man in the Stock Market exercised so much influence as Mr. Keene. He had hosts of friends—friends whom he grappled with hooks of steel—ready to swear by him on any and every occasion. Generous to a fault; brusque in manner at times, but with the heart of a woman, ready to melt at a moment's notice; open-handed and open-hearted to the appeal of even an acquaintance—no wonder that Jim Keene was the idol of the Market.

Mr. Keene is an Englishman by birth, a Democrat in politics, and a whole-souled gentleman by nature. It is to be regretted that he should prefer the heat and cold of New York, instead of our pleasant summers and more pleasant winters. Let us hope that Mr. Keene may revisit the scenes of his triumphs. He will be most warmly welcomed.

E. P. PECKHAM.

E. P. Peckham, President of the San Francisco Stock and Exchange Board, was born in Newport, Rhode Island, something over fifty years ago. In early life he aspired to collegiate honors; but after preparation, circumstances changed his plans—a digression which cost the world a possible L. L. D., or it may be a D. D. In 1850 he came to California, pitched his tent in San Francisco, and soon after engaged in the ship chandlery business. After a term of years, successfully devoted to the sale of anchors, cordage and other ship paraphernalia, he retired to become a member of the organization to which he now belongs. His connection with the San Francisco Stock Exchange dates back almost to its beginning, rendering him competent

therefor to give from personal observation a critical history of this institution, under whose auspices or shadow so much of life has pulsed with the ecstasy of hope or the agony of fear. As the annals of no other stock exchange of the world presents such sudden, frequent and violent fluctuations of values as do ours, there is, as a necessity recorded in the memory of our subject, a chapter of speculative, financial and moral history, which embodies an intensity of the tragic and of the comic that would, if delineated, form heroic texts for an hundred such pens as that which gave creation even to the inimitable portraitures of *Les Misérables*.

Mr. Peckham is now serving his second term as President, foreshadowing in his popularity even the "Third Term," which neither tradition nor public policy here seems to interdict. This, added to his supposed relations with the great bonanza firm, as confidential broker, or chief of the *corps* of bonanza brokers, gives him no small degree of importance upon the floor and in the lobbies of the Exchange. Many an eye is constantly following his movements, studying his trusts and analysing his motives under the conviction, that with him is daily carried the fortunes of the market—the knowledge, by which millions are won or lost.

Still in the prime of manhood, our subject gives promise of a large volume of reserved energy and labor. Weighed in the financial scales, it is said his double eagles break the beam on the hundreds of thousands. Although his feet show scars of rugged paths, still it is evident that the proverbial "spoon" parted his lips before the parting of the unbilical.

In politics, he leans towards the Democracy—the Democracy, however, which sees in the Federal Constitution and its Amendments the ideal *Magna Charta*; in the unity of the States, a solidarity which no sectional interest should fracture; and in our system of public instruction, an auxiliary which no inimical hand should desecrate. Though of New England, yet he is cosmopolitan in sentiment and habit. Like Bob Ingersoll and Beecher, he has an inspiring faith in his fellow-men. Neither Calvin, Wesley, nor Leo XIII can hedge him about with creeds or formulas. The orthodoxy of his mother has, perhaps unfortunately, crystalized into a broad, latter-day liberalism. Now, following in the fresh footsteps of a great financial success, there is a bright bow bending across the horizon of his future. Likely, however, only to be allowed by the fickle goddess to touch the hem of the bonanza garment, still, Fortune seems to point him towards bank accounts, metropolitan frontages, loans, and national bonds, that are apparently to provide the way and means finally for liberal death-bed gifts to charity, education and friendship.

"Ned Peckham," as his intimate associates prefer to call him, has some of the best blood of the old Colonial times running in his veins. Both paternally and maternally, he touches, along the course of many generations, some of their strongest and best points of character. Although no family coat-of-arms or device of heraldry comes down to him from Anglo-Saxon hearths, yet true nobility, nevertheless, has sent its seal down the lineal line. The San Francisco Stock Exchange is probably the final field of business effort with him. His sun, now past the zenith, is beginning to turn the shadow eastward—indicating that the period has gone in which success would be likely to follow in another sphere. Fifteen years a member of the Exchange, his retirement from its floor will be, in all probability, either to indulge in the pleasures of travel or of a quiet life, or to take his place in some silent niche of some pantheon of the dead. But let what will come, history has been made, and no hand can now unravel the changeless woof. Contemporaneous judgment casts no shadow; and it is hoped the final verdict pronounced upon Edwin P. Peckham will come clothed with a charity as gentle as that of the loving friend.

COL. CHARLES L. WELLER.

This gentleman, who fills the responsible offices of President of the Ophir, Mexican and Crown Point Mining Companies, is a native of Ohio, was born in 1821, and educated in Miami University, at Oxford, in that State. Though an old resident amongst us, having arrived here in the Summer of 1850, the Colonel's connection with our mining interests did not commence till 1870. Were we writing of his political career, we should have abundant material for an interesting, exciting record, as his name is intimately connected with the early history of the State, but our object being to give a brief biographical sketch of the men who have been extensively engaged in mining, we are compelled to omit much in the sketch of such men as Col. Weller, that would be thrillingly interesting. We can only state—*en passant*—that he was the disbursing agent of the Commissioners appointed by Congress to define the boundaries between California and Mexico, according to the Treaty of Guadalupe Hidalgo, by which this State and Nevada became part of the territory of the United States. It was while in the performance of the duties of this office, that in 1849, he met the first swarm of gold-seekers at Panama, on their way to California. As soon as he had delivered his dispatches to the Federal Government, at Washington, he returned to California, arriving here in the Spring of 1850. His official connections, and the high estimation in which he was held by the Government, prevented him embarking in the mining business. He has held several important Federal and State offices. He was Postmaster of San Francisco from 1854 till 1861—and much of the present excellence in the management of that establishment is due to the system planned by Col. Weller. On his retirement from the Federal service, he embarked in the real-estate business, in which he was

very successful. His inflexible integrity, and confidence in the future of San Francisco, placed at his disposal a great many valuable lots in the heart of the city, from which he derived immense profits. In 1870, the real-estate business having been overdone, he commenced operations in mining stocks, and soon became one of the leading operators. His attention having been attracted to the extravagance and waste in working the mines, upon obtaining a large interest in the Ophir mine, he commenced agitating for a reform in its management, and soon discovered a regular system among some of the employés of the company by which the stockholders had been plundered for years, and exposed the plot of a secretary of the company and a contractor to work a portion of the Ophir ground for their private benefit, and effected such a general reformation in the management of the company's affairs, that the stockholders elected him its President—an office to which he has annually been reelected ever since. His great practical business ability and fidelity to the interests of the stockholders, have caused a saving to them of \$3,000 to \$5,000 per month. His excellent management of the Ophir led to his election as President of the Mexican and Crown Point mines, the affairs of both of which he manages to the satisfaction of the stockholders.

The system for keeping the accounts of the Ophir Company, introduced by Col. Weller, has been adopted by nearly all the leading mining corporations on this Coast. Col. Weller is entitled to the credit of being one of the most efficient and honorable presidents of mining companies of which we have any record.

WILLIAM M. STEWART

Was born in Wayne County, New York, on the 9th of August, 1827, and arrived in California via the Isthmus of Panama, on 7th April, 1850. There are few public men on the Pacific Coast whose connection has been so close, continuous and influential with our mining interests as the object of this sketch, and we doubt if there is any other individual whose acts have left so deep and beneficial an impression on these interests as those of William M. Stewart. A man of Herculean form, with a massive, well-poised head and irrepressible will-power, he is one of those who appear born to command. Such men seldom fail to accomplish whatever they undertake. Thus, soon after his arrival here, we find Mr. Stewart as an "honest miner," working with a zeal that insured success, in the "Coyote Claims," as they were called on Buckeye Hill, in Nevada County. These claims were called "Coyote" because the miners who worked them, literally burrowed into the hillside like coyotes in search of gold, which they sometimes found in great quantities by drifting for a long distance in tunnels scarcely two feet wide and less than three feet high. While prospecting in the Fall of 1850, he discovered the Eureka diggings, which have been worked continuously ever since, and are among the more valuable of the placer diggings of to-day. To work these rich mines, he projected the Grizzly ditch, which is in use now—taking the waters of Grizzly Canon and Bloody Run, and carrying them, at an immense expense, down to the Cherokee diggings. To provide the miners and their families with lumber, he built the first saw-mill on Shady Creek, which was in operation for years. In the Spring of 1852, having had all he wanted of mining and sawing, he sold out his business and commenced the study of the law, with J. R. McConnell, at Nevada City. Such was the rapidity of his progress, and the force of his presence and speech, that in December, 1852, he was appointed District Attorney, to which office he was the following year elected by an almost unanimous vote, and performed its duties so satisfactorily, that in 1854, he was appointed Attorney General, and took up his residence in San Francisco for the first time. It was while residing here that he married a daughter of ex-Governor Foote, of Mississippi. Tiring of city life, he returned to Nevada city, and thence to Downieville, in Sierra County, then one of the most important mining camps in the State. There he devoted himself to the study and practice of laws concerning mining—ditch and water rights—a most important and lucrative branch of litigation. He continued in this business till April, 1860, when the excitement about the Comstock mines induced him to go to Virginia City, where he at once entered into partnership with Henry Meredith, who within a week or 10 days after was killed by the Piutes, while defending the city from an attack by these at that time savage and warlike Indians. Mr. Stewart's thorough knowledge of mining law soon brought him abundance of profitable business. He was engaged in the conduct of nearly every suit brought before the higher courts of the Territory and State. The settlement of title of nearly all the mines on the Comstock is due to his sagacity and influence. The money obtained by his great legal talents was invested in the development of the mines, and he soon became one of the leading operators on the Comstock, and built for himself the finest private mansion there was at that time in the Territory, and invested nearly half a million dollars in real estate in San Francisco.

His view of the nature of the Comstock Lode, with reference to its being one, or a series of ledges, has not yet been definitely settled, though it involves the ownership of some of the richest ground on that great deposit of ore. As early as 1860, when litigating on this subject, he maintained that all bodies of ore found on the Comstock proceeded from a common origin. That Mount Davidson formed the foot-wall of the great fissure, but no hanging wall was reached, and that under the law as it then existed, the original locators on the Lode were entitled to everything between the foot and hanging wall, whenever the latter shall be found.

Near the surface, in those early days the ground was so much broken, and seams of quartz and clay running in every direction, that it was possible to connect by exploration nearly every body of ore found with that in possession of the original locators. Whether this can be done at greater depths, is a serious question, and besides, it remains to be determined what construction the Courts will give to the Act of Congress, which provides when two or more veins unite, the older location shall take the ore from the intersection down. In 1861, he was chosen a member of the Territorial Council, which office he subsequently resigned, and in 1862 was elected a member of the Constitutional Convention, and to him more than to any other individual, is the Silver State of Nevada indebted for those provisions in its Constitution which have made it one of the most prosperous States in the Union. In appreciation of his services the citizens of Nevada elected him to represent them in the Senate of the United States for two terms.

Mr. Stewart has given up politics and devotes his talents to mining litigation and the development of the mineral resources of California and Nevada. He has expended large sums in opening new mines, some of which will, doubtless, prove valuable. He has been engaged in mining in Amador County during the last twelve to fourteen years, and expended enormous sums there. Mr. Stewart's most enduring claim on the mining interests of the country rests on the important services he rendered them while member of the United States Senate. It is to his efforts the miners are indebted for the defeat of the measure introduced in Congress in 1866, to sell all the mineral lands of the country at public auction. It was Mr. Stewart's thorough knowledge of mining laws, and the rights of the miners, and his forcible style of reasoning, that defeated that measure, which, had it passed, none but the rich could have owned the mines. Scarcely a law relating to the mineral lands and mines of the country, passed by Congress during the past ten years, but contains evidence of Mr. Stewart's watchfulness and fidelity to the rights of *bona fide* miners. The biography of such men add lustre to the history of mining on the Pacific Coast. We regret that we cannot afford them greater space in the present edition of the MINING REVIEW.

WILLIAM M. LENT.

Everybody who deals in stocks knows William M. Lent, because he has been identified with the securities, actively and passively, ever since there was a stock board in San Francisco. In many respects Mr. Lent is a remarkable character. There are in the stock market different classes of operators. Some are brokers for themselves or others; some are chippers-in, ready for a turn—large or small; others are bold and venturesome; others shrewd, calculating; others, again, who know whereof they buy, because they have seen and know. Mr. Lent, in San Francisco, meandering around the stock boards, giving his orders, is a compound of many of the qualities suggested. But he doesn't always remain in town. We hardly think he could say how many times he has crossed the Sierras, on horseback, in the stage, in the palace cars, bound to distant mining camps to see for himself, for Mr. Lent is a very good judge of a mine himself. Idaho knows him; Montana knows him; White Pine knows him. Not a mining camp west of the Rocky Mountains but what Mr. Lent has visited personally and made his notes, mental and written. So when anybody comes to him with a mining incorporation, north, east, south or west, Mr. Lent brushes up his thoughts a moment and says: "Why, yes, I know what you are talking about; why, Old Gash and I were there; let me see, about four years ago;" or, as another camp is located: "Yes, I know where that is, Boyd and I were there and thought well of it a long while ago." Mr. Lent is thoroughly familiar with our mining interests. If he was an older man, he might be called one of the fathers of the Comstock, because "Bill Lent," as he was known familiarly by the miners, did almost as much to develop the Comstock as even the present kings. Mr. Lent always had confidence in the Comstock. His confidence generally in men and miners has been much larger than perhaps either has justified—specially the men. That Mr. Lent has been connected with nearly every prominent mining enterprise on the Pacific Coast is simply an undeniable fact. Mines are Lent's hobbies: "Tell me what you've got; let me see for myself and I'll buy your mine," is and has been his answer. No paralyzing of small interests by large exactions; no smouldering fire of the impecunious miner who says "here are my ores"—but "give me a good prospect, and I am with you," says Mr. Lent. The latest, and perhaps the most successful venture of Mr. Lent's, has been in the Bodie District, Mono County, California. The Bodie mine has certainly developed most wonderfully—far beyond the expectation of even the most sanguine holders. Mr. Lent had faith in Bodie, and his dividends are the best evidence that his faith was not misplaced. Mining is a venturesome business, and when stocks are built up and inflated on what may or may not be, stock speculations become dangerous and most hazardous. But when a man takes hold of a mining enterprise on its merits (as he sees them), and comes out either successful or unsuccessful, he should be applauded in either turn of the question, and so should Mr. Lent be applauded. His successes are built upon his own confidence in the value of the properties in which he has invested; his failures are the same, illustrating how the shrewdest of operators can be deceived in judgment by results. At present writing Lent is away up financially. His check is good without being certified. His

word is as good as his bond, and when that is said, nothing more is needed. Mr. Lent is somewhat familiarly known as "Uncle William"—by his friends. To dissipate any idea that he is older than he ought to be, we will simply say that he was born in the State of New York—whence all smart men flow—in the year of our Lord, 1818, which makes him exactly—well, our readers can figure up for themselves.

Mr. Lent has been a good citizen. In early days, when Broderick and Gwin were fighting the battles of our country on the battle-fields of the Legislature at Sacramento, Mr. Lent was quite a politician, and a warm friend of Broderick. But politics gave way to mining; and although he has frequently been suggested as a candidate for gubernatorial honors, he has preferred to remain in the shade. Being a gentleman of comprehensive ideas, he has suggested many plans for the general advancement of the State, but their illustration is not within the purview of this article. Mr. Lent has gathered around him sons and daughters. Comfortable in his fortune; happy in his household; esteemed by his friends—all-deserving of them all is WILLIAM M. LENT. We append the following biographical sketch from the columns of a contemporary:

"In early life, he received a common-school education, fitting him with sufficient knowledge to make his way amongst men; and, when in his teens, left school for Florida, where he remained for some years. Upon his return to New York, he became associated with the well-known house of Schemerhorn, Banker & Co., where he acquired a knowledge of business habits, and developed a character for probity and honor that made his services invaluable. Mr. Lent came to California in the Spring of 1849, and soon thereafter became connected with Alexander B. Grogan, in the firm of Grogan & Lent, on Montgomery street, near Washington, where they carried on business for some years. Latterly, Mr. Lent was connected with the house of Lent, Newell & Co., afterwards Lent, Sherwood & Co., during which time he became largely interested in Mexican enterprises, having secured through his associates valuable rights connected with that country. He was mainly instrumental, through Capt. J. B. G. Isham, in starting the Holiday & Flint line of steamers, to ply on the Mexican coast, and furnished the means necessary to survey the State of Sonora, and to locate the Iturbide and various other grants from the Mexican Government. Mr. Lent was the first to countenance and aid the early locators of the Comstock with money, and at one time advanced the necessary means to develop the Central, Mexican, Savage, Bullion, and Yellow Jacket mines, injuring his credit amongst business men with what *then* seemed the wildness of his ideas."

D. O. MILLS.

D. O. Mills, one of our leading bankers and capitalists, is a native of the State of New York. A little hamlet not far from Newburgh claims the honor of his birth. He came to California in the flush times of gold nugget, faro, navy revolvers and personal enterprise. Circumstances then gave him to Sacramento City, where from humble beginnings, he arose, through integrity, tact, industry and perseverance, to the position of a prominent banker. This field finally becoming too circumscribed for the full sweep of his financial ability and genius, he removed to San Francisco, where he associated himself with the lamented Ralston in the management of the Bank of California, as its President. From this, he rapidly ascended to the plane of the millionaire. As a banker, he was constructed on the true model. His brain was cast in the mold of the genuine financier. Double eagles, as well as Bibles, evidently floated in the vision of his progenitor in the very moment when the elements of that brain were cast into form. A financial success from the moment he won the first shilling, he continues a success; and must, from psychological and moral necessity. Nothing short of a breaking up of mental and nervous organization will overthrow him. Cautious, and almost prophetic in his financial conceptions, his feet ever stand upon granite, and his hands ever rest upon pyramids of bullion.

A banking institution under his control would furnish a depository for gold as safe as if lodged in the Government Treasury. Although well up in the fifties, he is yet young. Good habits and systematic activity have solidified and knit into a column of enduring life his whole organization. Handsome in feature and general outline, as well as dignified in manner, he moves among men as an elegant type of American manhood, commanding the respect and confidence of all.

GEN. GEORGE S. DODGE.

Gen. George S. Dodge has an honest right to his magnificent physique for the reason that that State of giants, Vermont, claims him as one of her sons. In addition to the excellent facilities for the pursuit of knowledge afforded by the schools of that State, Gen. Dodge enjoyed the advantages of a University education. His tastes impelled him to a mercantile career, and after leaving the University, he entered a prominent house in Boston and received a business training which has since stood him in good stead. At the opening of the late war he entered a Massachusetts regiment, with the commission of Lieutenant. He performed his duty with such ability and discretion that promotion after promotion followed. In a brief sketch of this

distinguished gentleman's career, we cannot trace him through the different engagements in which he participated. Suffice it to say that he was in Fort Fisher fight, in the battle of New Orleans, and at various other points, where the battle raged the thickest. At the close of the war he honorably retired from the army, with the rank of Brigadier General. He next served his country in a civil capacity. Accepting a call to the Consul-Generalship of Bremen, he proceeded to that city very soon after leaving the army. He discharged his trust with the ability that has marked all his actions in public as well as private life, and only retired from his post when Bremen was absorbed by Germany. Having acquired some large mining interests on this coast, Gen. Dodge came hither to look after them. Once here he decided to stay. And since he took up his residence in this city, several years ago, no man has been more prominently identified with the great mining interests of California and the adjoining States and Territories. Every prominent mining camp has reaped the benefit of his intelligent enterprise. He has bonded, purchased and developed hundreds of mines which, but for him, would never have given their treasures to the world. His immense private fortune, his more than ample credit, his high social position, and his reputation for shrewdness and tenacity of purpose, have given him opportunities for advancement beyond those of most other men. And now, in his thirtieth year, at a time when the horizon shines its brightest, he is compelled, by reason of impaired health, to visit the Eastern States for the rest which is essential to his recovery. His residence in Oakland, at once the most costly and picturesque in that beautiful suburban city, and wherein he has entertained Gens. Sherman and Sheridan, Don Cameron, and other leading men of the nation, will not know him again for several months. Meantime the General and his accomplished wife, will reside in New York. The General's mining business suffers no interruption during his absence. We trust that he will return to find the famous Mammoth rivaling the entire Comstock in its bullion yield.

GEORGE R. WELLS.

The conspicuous members of what is popularly designated as the mining community are not necessarily miners. The destinies of the mines are not wholly directed by the miners and the stock speculators. Litigation, intricate and exasperating litigation, crops out at some stage of almost every mining enterprise. The management of this litigation devolves upon those gentlemen in the legal fraternity who are known as mining lawyers, and calls for the highest order of talent. Time was, in the earlier days of Nevada and California, when the genial juror, the thrifty judge, and the willing witness, often brought about results contrary to the rules of evidence or decency. But, since the civilization of this far West, mining titles have been legally adjudicated. The mining lawyer, then, is an important factor in the consideration of mining problems. In the front rank of our mining lawyers is George R. Wells, of San Francisco. He is young, to be sure, but that signifies nothing in his case. When ability, experience and success attend his youth, no fault can be found with a man because he is young. These remarks apply with special force to Mr. Wells, for the reason that he is discreet beyond his years. Mr. Wells was born in the State of Iowa, but in what particular locality we are not advised, and his age is thirty-three. After graduating from Hamilton College, (Iowa), Mr. Wells came to San Francisco, arriving in 1865. He entered the office of Wilson & Crittenden, soon after reaching the city, and for ten years the office details of that famous law firm were under his direction. His tact and industry made his services as chief clerk of the office absolutely invaluable to the firm, and, on the other hand, the advantages accruing to him, from daily and confidential association with the leading lawyers of the Pacific Coast, were more important than most people would imagine at first thought. In 1869, Mr. Wells was admitted to practice by the Supreme Court of California. His association with the firm of Wilson & Crittenden, and, later on, with the surviving partner, Mr. S. M. Wilson, was not severed until 1875, when the bonanza firm of Flood & O'Brien secured Mr. Wells' services as office lawyer and confidential secretary. In this position of honor and trust Mr. Wells has participated in some of the weightiest mining cases known to the courts. His capacity for transacting legal business, his discretion, and his unquestioned integrity, have earned for him a reputation of which he may justly feel proud. Mr. Wells is a benedict, and has a pleasant home in San Francisco.

SOLOMON HYDENFELDT.

Never, perhaps, in the annals of legal warfare have so many important suits in so short a time occupied the judiciary of any country as here on the Pacific Coast since the discovery of the Comstock Lode. In these great combats of the Forum, no man has participated more largely than Solomon Hydenfeldt, nor have any in these contests displayed a greater amount of ability and learning, or served their clients more effectually than he. In nearly all the great historical cases that have come before our courts, he has been employed as counsel on one side or the other; his arguments before the Supreme Bench, of which he was himself for several years a distinguished member, having been numerous and occupying a large space in our law reports. Judge Hydenfeldt came to California from South Carolina in 1850, and has resided

here with his family ever since. At the time he was on the Supreme Bench of the State he had for associates Judges Murray and Terry, both men of marked ability. Indeed, the Bar of California was at that time made up largely of men of resplendent talents, containing such members as Baker, Baldwin, Lockwood, Tracy, Byrne, Yale, Felton, Haight, and other legal luminaries, who rendered it conspicuous by their eloquence, genius and learning. Among these bright and gallant spirits, the subject of our brief sketch stood in the foremost rank, the peer and fast friend of all. But Solomon Hydenfeldt has been more than a judge and a lawyer; he has been an active and zealous promoter of the great underlying industry of the country, having embarked largely of his means in an immense number of mining enterprises all over the Coast. Not only in mining for gold and silver, but, also, to those less enticing schemes directed to the development of our coal, copper, quicksilver, and other useful minerals and metals, he has often lent a helping hand. Even though these investments have not for the time being proved profitable, this fact has not deterred him from aiding with his money and advice these humbler industries. This gentleman has, in fact, exerted himself actively in the promotion of nearly all our leading interests, the range of his good services reaching from the highest professional duties down to the organization of a Kindergarten, a mission so holy that we are not sure but we should reverse this sentence. Indeed, we strongly suspect he has found more pleasure in these lowly works than in discharging the duties that have brought him more prominently before the world. Judge Hydenfeldt is permanently retained as the legal adviser of several of the leading mining companies, and other large incorporations, the magnitude of whose business renders the employment of the ablest and safest counsel necessary. Besides his superiority as a closet lawyer, Judge Hydenfeldt has achieved a full share of forensic triumphs, the latest notable success towards which he largely contributed having been the gaining of the great suit brought by the Eureka Consolidated against the Richmond Company, in which he was employed on the part of the plaintiff. Being scarcely three score years of age, this gentleman has, presumably, much useful work yet to perform in the material sphere.

ROBERT SHERWOOD.

For tenacity of purpose and confidence in the future of the Comstock, commend us to Robert Sherwood, Esq., whose happy face may be seen on California and Pine streets in sunshine and in storm—in sunlight and in shadow. There may be a panic in the Boards—Mr. Sherwood is on hand to advise and assist in the ways and means to restore confidence; stocks are up and booming, and Mr. Sherwood is on hand to take a few more shares, carry a few more for friends, and generally encourage the timid and congratulate the bold. Mr. Sherwood is an old-timer. Who does not recollect the firm of Barrett & Sherwood, jewelers, on Montgomery street, near Commercial, from time as old as San Francisco history? Mr. Sherwood is still a member of the firm, and every morning and afternoon spends a portion of his time in looking after the interests of the firm. The balance of his time is devoted to his mining interests—holding large blocks of stock in various Comstock and other companies. If Sherwood believes a thing in stocks has merit, he is pretty sure to take an interest. He is a bull in everything—specially wherein he is interested. Quiet and gentlemanly in his demeanor, generous and considerate in all his dealings, he has made a host of friends. Having had confidence in the bonanza mines early, his faith was rewarded by substantial profits derived from dividends and sales. Mr. Sherwood is now largely interested in Union Consolidated, Best & Belcher, Alpha, Scorpion, and other north-end mines that give promise of a great future. As an evidence of his popularity, we believe he is a Director in more companies and President of more companies than any man in the business. His signature attests the validity of more certificates and checks than an ordinary scholar could count in a day. As we remarked, Mr. Sherwood has been one of the lucky ones in stocks, and luck has come of confidence. He hies himself away to his beautiful country residence, near San Mateo, every afternoon; but, true as the needle, he is always at his post of mornings, unless business should call him to Virginia or elsewhere. Mr. Sherwood is a young man yet, ripe for many years of enjoyment of his well-earned prosperity. No one who knows Robert Sherwood grudges him his affluence. He has always been a barrier to protect the poor stockholder against the rich—always ready to stand in with the demoralized bulls when the exultant bears were crowding them to the wall. Mr. Sherwood was born in Ireland about fifty years ago.

HAGGIN AND TEVIS.

In mining, financial, and banking circles, no two men in San Francisco are so well known and so generally respected for integrity, honor, and *savoir faire*, as James B. Haggin and Lloyd Tevis, comprising the firm of Haggin & Tevis—mine-owners, land-owners, ranch-owners, stock-owners, bank-owners, owners of every kind of property that has value, up to millions and millions.

There are not on the globe two gentlemen of such different temperaments, doing business together on the Pacific Slope, as Haggin & Tevis. Mr. Haggin occupies comfortable apartments

in Nevada Block, where he can be seen in daily converse with anybody who wants to see him. When you want to see Lloyd Tevis, go down to the bank of Wells, Fargo & Co., and you will see Lloyd Tevis in the private office; and, unless your securities are unexceptionable, you won't get much money. Return to Nevada Block, and interview Mr. Haggin. A gentleman of a certain age—say surely fifty-five—but as straight as an arrow, eye as keen and bright as an Indian's, complexion swarthy but as clean as a whistle. You enter: no unnecessary compliments. "How are you?" is about the conventional style of reception. "Glad to see you: now, what do you want?" And business results. Mr. Haggin possesses the remarkable faculty of despatching business. He is not technical. If there is a short cut leading to the same channel of results, he takes it at once. He is so familiar with the whole *minutia* of stock corporations, that at a glance he can see whether things are as they ought to be or not. Mr. Haggin does what few millionaires do—encourages the buying of good steeds. His stables are a curiosity, as we are informed, not having seen them. But in the Park we have seen him. Behind a four-in-hand, he drives the only mail-coach that has made its appearance in the Park. Bob Graves has some such similar arrangement, but Haggin is the only mail-coach Jehu; and to see him on a Sunday morning, when people ought to be at church, sitting upon that coach, stove-pipe hat on head, the trumpeters behind—it is really enjoyable; although people quietly proceeding to church about that time might enter protests. But as long as there is authority in Henry Ward Beecher that there is no hell, why should anybody care? Mr. Haggin is independent of what churches think, and will very properly do as he feels like doing. Mr. Haggin is seen in the Park frequently—if not with his self-driven mail-coach, then in his self-driven tandem box arrangement, with George Hearst by his side, discussing what could be done here or there in the Black Hills; or behind a spanking double team, with Gen. William B. Carr behind, when they move along quietly-like, and suggest to each other about the Kern County desert lands. In many respects, Mr. Haggin is the best judge of character we have met. Positive in manner, and yet willing to listen to every argument—providing they be short. Mr. Haggin came to California from Louisiana in 1850, and has since been a resident of this State—identified with its interests, with those of the Pacific Coast, with Utah. Among the mines ruled by Mr. Haggin, as special representative of his firm, is the Ontario of Utah—about the biggest mine in that section. George Hearst was the main spring whence sprung this mine, which pays dividends, and extra dividends, month after month. Mr. Haggin's firm, and Mr. Hearst again as chief promoter, have become the big owners of the big Black Hills mines. Mr. Tevis is the President of the Home Stake, Mr. Haggin the Treasurer of the Golden Terra—both largely productive mines. Besides these, they control the Home Stake No. 2, the Armes, and we don't know how many others. In all the good mines they have interests. Never a new district but what George Hearst waltzes off, and, if valuable, a slice comes off.

Mr. Tevis can be found, during office hours, at the Banking Department of Wells, Fargo & Co., where he reigns as High Mogul of the Finances—the house necessarily controlling the extensive operations of the Express Department, which extend to every part and portion of the Pacific Coast. Mr. Tevis is a blonde, and in complexion the very opposite of Mr. Haggin. While Mr. Tevis is inclined to be communicative, Mr. Haggin is repressive. A passing individual would listen to Mr. Tevis, and impart his confidence; to Mr. Haggin he would rather be on the defensive, or at swords' points. But the question has always been, Who would be the better off in the end—the one who hearkened unto Tevis' pleasant smile, or the other, who preferred Haggin's immobile, uncompromising glance.

Mr. Haggin and Mr. Tevis are among the leaders of society in San Francisco. Their edict is an edict; and no one may expect to enter within the charmed circle of Taylor street and other hills, who is tabooed by the Haggins and Tevises. Recently, the charmed family circles have been invaded, and several ornaments thereof stolen away for Eastern and other more salubrious climes. The House of Haggin will miss those who have gone or are going; also the House of Tevis. But while the young are mated and fly away, the old remain; and Messrs. Haggin & Tevis have too many interests in San Francisco and in California to think of any permanent residence elsewhere.

JOHN W. GASHWILER.

One of the most remarkable operators on Pine Street is General John W. Gashwiler, whom not to know in connection with mines and stocks, is to argue yourself unknown. Everybody in the Stock Boards and out of them, who dabble in the securities, know the General, or "Old Gash," by which he is referred to by his friends. Not that he is old by any means; for, although his head is almost as bald as any head can be, he is hardly more than forty-five years of age, as the records of Randolph County will show. Mr. Gashwiler came to this State when scarcely a beardless boy, and having made a raise down in Tuolumne County, where a partner of his had the misfortune to be hanged from a flume for killing somebody in self-defense, concluded that a pork speculation would enhance his fortunes. So he journeyed up to Oregon and bought a cargo of live porkers, and shipped them on board of a bark bound for the Golden Gate. He embarked on the same vessel, to keep an eye on his pets. Necessarily, a storm arose at sea—

and a big storm, at that. Hour by hour Mr. Gashwiler saw his fortune thrown to the seas as hog after hog went overboard; and, as Gash now says, when in a melancholy vein, "When we got to San Francisco, there were just three shoats left of the whole lot, and when I settled for everything, I had just an even \$5 piece left—and it wasn't whole either, because there was a hole in it. But in those days pork was up in San Francisco, and I would have gone back to old Missouri with a pile if the hogs had only pulled through." With that \$5 piece Gashwiler managed to get back to his old mining ground in Tuolumne, and it wasn't long before he was on his pins again—although an old negro salted a claim on him good. From placer mining, Gashwiler got quartz severely on the brain, and the love thereof still remains. No man in California has been interested in and had a hand in the buying, selling, and management of gold quartz mines than he. The Washoe excitement necessarily found Gashwiler at the Comstock front, and a gay and a merry and a prosperous time had he and his friends. They speculated in mining ground and everything else. Gashwiler saw that water would be a good scheme, and with John Skae, Hock Mason, Charles G. Funk, "Joggles" Wright and others, organized the present water company that supplies Virginia and Gold Hill with water. Gashwiler was general superintendent, and he watched that water from early dawn to dewy eve—allowing none to escape from any defects in the flumes or ditches. Finally, he tired of the Comstock and water, after making several fortunes in both, and then losing them. He sold out his water and stocks, and with John Skae made a royal visit to the Eastern States by steamer via Panama. A friend who "saw them off," says that the store of provisions provided for the travelers blocked up two staterooms. They comprised in the main demijohns, champagne baskets, and small kegs. The travelers were abundantly supplied during their long and arduous trip, but they pulled through safe. Skae remained true to the Comstock and water; still controls the latter; and as President of Sierra Nevada, has recently lifted up his head, even against the Bonanza Kings. Gashwiler, returning, went after gold quartz. What he accomplished is written in the records of Plumas Eureka, the Sierra Buttes, the Hayward Mine, of Amador, the Keystone, the Original Amador, the Seaton, the Black Bear, the Klamath, and dozens of other big California quartz mines. Acting in the interest of English capitalists, he secured many valuable properties, which have paid for themselves ten times over in dividends. The largest check ever given on a mining purchase was that given to Gashwiler by the late Michael Reese—over half a million, Reese acting for a corporation. Of Mr. Gashwiler's recent operations, may be mentioned a venture among the Tuscaroras, but it panned out poorly. He was prominently identified with Belmont and with John F. Cassell, General D. D. Colton, Colonel John F. Boyd, and other operators, making it warm for shorts. But, financially, he came out at the small end of the Belmont horn. General Gashwiler's latest new departure has been in the Black Hills quartz mines, which he visited in August last. There is one peculiarity about him—he always wants to see for himself. Every mining district on the Pacific Slope is as familiar to him as household words; and being possessed of a wonderful memory, he can tell you all about the past history of any and every prominent mining camp. He knows all about the "mother lode of California;" he has tramped over it. Not a stage line in Nevada or Idaho or Utah or Montana, but Gashwiler has slept through some of its weedy marches as happily as though he was at home in bed. His recent visit to the Black Hills resulted in the purchase and bonding of several valuable properties, which will soon be making profits for the owners. "Old Gash" is irrepressible. Up to-day, down to-morrow, but the next finds him ready for another tussel with Dame Fortune; and in the end he generally comes a-top. He is rather too sanguine in his estimates, and too apt to be carried away by his own impressions. In some ventures, even so close and shrewd an examiner as Mr. Gashwiler has been "salted," with disastrous results to himself and friends. No man is more popular on the street than "Old Gash." He is indomitable, and when determined, can carry through almost any scheme by sheer force of will. Those who at first laugh his scheme to scorn, are content to come in and pay for a slice of the bonanza. Mr. Gashwiler enjoys the confidence of many moneyed men, who have always made coin upon his representations. Take him for all in all, and John W. Gashwiler is one of the most remarkable of mining operators on the Pacific Coast. Generous to a fault; with a heart as big as his head, he has more friends than—he knows what to do with. And so we leave General Gashwiler.

MARK L. McDONALD.

Col. Mark L. McDonald is one of the well-known McDonald family of six-footers, who all sprang up in the Blue Grass region of Kentucky; are all Democrats, except one, and have all made their marks in the history of San Francisco and the State. The brothers are James M. (better known as Capt. Jim), who is President of the Pacific Bank, a large California quartz mine owner; D. L., a railroad builder and mine operator—President of the Belmont, and of the Mechanic's Real Estate Associates; M. Jasper, the well-known broker and operator; Dr. R. H. McDonald, who is known all over the State as a pioneer druggist, and the only Black Republican in the family; and Mark L., the subject of the present sketch, one of the most notable brokers, operators and politicians in the State; of stalwart proportions and commanding presence, he is at home everywhere. His *bonhomme* is such as

to win friends even from the ranks of his opponents. For years in the stock marts he won for himself the appellation of the *Ursa Major*, being ready on every and all occasions to short stock, sell calls, and generally discount the market. But Mark was shrewd enough, that while he left everybody to see what his right hand was doing, very few thought that his left hand was quietly laying in a store of bonanzas, on which he serenely rode on to competence and wealth. Mr. McDonald's course in business has not always been strewn with flowers; thistles and nettles have beset his path, and it wasn't once alone that disaster stared him in the face. But he arose superior to every threatened failure, and finally his well-freighted bark rode through all the storms and left him with all the friends he cared for, and property and means enough, carefully husbanded, to bid defiance to adversity. A large portion of his means are invested in Santa Rosa property, and no one in that pleasant town and valley has done more for its substantial interests. On a Saturday afternoon, he shelves the cares of business and hies him off to the country and recuperates, like a sensible man. He early caught the Black Hills fever, and at bed-rock prices secured large interests, which, before long, will yield in dividends enough to make him more independent of stock-boards and other business ventures. Within a year or two Mr. McDonald has developed a decided penchant for politics, and last Winter was a prominent candidate before the Legislature for the United States Senatorship. If he did not win, it was not for lack of shrewd management and recognized ability, but rather because the cards were against him, the deck having months before been quietly arranged in favor of an older hand in the game. Mr. McDonald made many friends in the campaign, and being now fully identified with his party as a leader, will hereafter take a prominent part in its councils. He is young enough to lose more battles with honor, and finally snatch the prize from more ambitious rivals. In stock circles, Mark is recognized authority, many of the lesser lights following him or heeding his counsels as gospel truths. His relations with clients and his fellow brokers have always been cordial and fraternal, and should he ever want to sell his seat in the San Francisco Board, it would meet with such opposition as would preclude his successor from being elected. His is one of the peculiarities of the brokers of that Board. When they like a fellow member they want him to stay with them, refusing to elect his successor. When they don't like a fellow member, his successor is generally elected by almost unanimous vote. Mr. McDonald is always in a good humor, and as he saws the air with his long arms, buying or selling, to meet the demands of the "boys," there is a pleasant smile on his countenance and a merry twinkle flashing from his honest, blue eyes.

COLL DEANE.

This gentleman is of Irish birth, and one of that class of Irishmen whose descendants may justly be proud of their lineage. He is now 42 years of age, having lived in America 27 years. He joined the San Francisco Stock Exchange as a member in 1867, and retired in the Spring of 1878. He has always been known more as an operator than a broker, caring little for the paltry commissions paid by clients. For eight years previous to his connection with the Board he was employed by Murphy, Grant & Co., one of the largest mercantile houses on the coast, in a confidential capacity. His first fortunate venture was in Crown Point and Belcher, in 1870. Several additions were made to this fortune during the two or three succeeding years, and when the bonanza in Con. Virginia was discovered he was in a condition to avail himself of the advantages to be derived from the possession of vast wealth. His investment in the bonanza Stocks probably exceeded a million of dollars, and having unbounded faith in the parties who gave him information concerning the mine, he clung to them till forced to sell or be left to the tender mercies of exacting creditors. Since retiring from the board of brokers, he has largely interested himself in the "Black Hills," and is now the leading spirit in the development of the "Father DeSmet." For a man of his years his operations, in the mining Stock world, compare favorable with those of greater experience whose fortunes are now estimated by their millions. While on a late visit from the Black Hills to this city, and during the excitement over the Sierra Nevada—Union bonanza, he obtained information which led him to invest largely in the Union at low figures, and from which he realized a snug fortune.

D. F. VERDENAL.

The subject of this sketch was born on the 24th day of August, 1841, in the town of Jack-sonburg, in the county of Herkimer, New York. His parents were natives of France. They emigrated to New York, and being respectable, industrious and enterprising, saw that the Far West was opening up prospects where such qualities would command success. They accordingly, in 1844, found their way to St. Louis, but they felt like moving still farther west, and in 1852 they crossed the plains, landing in San Francisco after a six months' journey. After "life's fitful fever" they repose, side by side, at Lone Mountain. They were the kindest and most self-sacrificing of parents, and their children will always cherish their memory with the deepest veneration.

Shortly after his arrival, young Verdenal made the acquaintance of Judge Burritt, a very

eminent practitioner at the bar as well as a ripe scholar. The Judge was not long in discovering the lad's talents. He kindly prescribed a course of Blackstone, and took genuine pleasure in explaining to his apt and ready pupil the more recondite passages of that great jurist. He also practiced him in the arts of composition, corresponding with him regularly while attending the Supreme Court sessions at Sacramento. About this time Caxton (W. H. Rhodes), who was then editor of the *True Californian*, offered a prize of twenty-five dollars to any youth, under fifteen years of age, who would write the best essay on the subject of the Pacific Railroad. Young Verdenal, not without considerable competition, carried off the prize, and the essay was duly published, with very flattering comments. The literary laurels thus gained roused his young ambition, and we find him shortly afterwards embarked in the newspaper business—first editing the *Young America*, a very respectable sized weekly, for a period of six months, and then the *Pacific Courier*. His coadjutors, in this early period of his journalistic career, are all residing in this city, and can fully attest to the ability and enthusiasm which he then displayed. The "copy" was abundant, and when the compositor was absent from his case, as not unfrequently happened, and there was danger that the publication of the paper might be delayed, he bravely undertook the printer's task. This exercise he repeated so often, and with such assiduity, that he became a proficient and rapid type setter.

In 1858, when the Frazier river excitement was, at its height, lured on by commercial prospects, he went with his father to Victoria. The bubble, however, soon burst, and he returned to San Francisco. The moment had now arrived when he must decide upon what career he should pursue through life. The early lessons of Judge Burritt were not forgotten, and he decided that he should become a lawyer. To fit himself for that noble profession, he resolved to undergo a thorough discipline in the classics and mathematics. He accordingly took his departure for the East, and in September, 1858, we find him matriculated at the St. Louis University, no longer amid such scenes of excitement as Vigilance Committees, but amid learned professors expounding passages of Plato and quoting Horace.

Here he remained, pursuing his studies, which comprised the usual classical curriculum, until the Fall of 1860. In two years he had gone through a course of instruction which is seldom completed under five, and was on the threshold of graduation: nay, more, he had carried off all the honors, and against students who had never known defeat.

Thence he proceeded leisurely to Cambridge, Massachusetts. On his way, he stopped a few weeks in Washington. The country was in the incipient throes of internecine war. The oratory that then resounded in the halls of Congress was heartfelt and impassioned; but on one side, at least, it too painfully brought to mind the conspiracy of Cataline. Under such circumstances, our young student, on the 4th day of March, 1861—the day of the ever-memorable first inauguration of Lincoln—was enrolled among the students of the Harvard Law School. He soon became a favorite with the professors, especially Professor Parsons, who, while not overcome with temporary vanity, was one of the most genial of instructors. In this celebrated institution and its surroundings, the subject of this sketch passed, as he freely confesses, some of his happiest days. The parliament or debating society, to which all the students belonged, offered a free scope for the exercise of all the arts of speaking, from the most withering sarcasm and cutting irony to the highest oratorical flights. It was a field where young, keen and polished intellects incessantly clashed, and whence our youthful representative of the Pacific seldom came forth unvictorious.

In the month of April, 1862, having received his degree of Bachelor of Laws, he made application to be admitted to the Supreme Court of Massachusetts. After a rigid and protracted examination, his aspirations were crowned with success. In July, 1862, after four years' absence, he found himself again in the city prized by him above all others. In conjunction with his brother, he opened a law office in Court Block, on Clay Street. His fondest hopes of the pecuniary emoluments which result from the practice of law, were only measurably realized. Overcome by his old habits of literary composition, he drifted insensibly into writing for the Press. In 1868 there broke out what was known as the White Pine fever. He became one of its first victims. Under the hoary brow of Treasure Hill, in a cabin seven-by-nine, he displayed his shingle by day, while he heard the mountain blasts howling all through the long nights. He saw the glories of Chloride Flat disappear, and the fabulous wealth of the famed Eberhardt fade away as mists fade in the morning sun. During all this time he was the *Chronicle* correspondent, and in that capacity did much to dissipate the exaggerated reports made of this section of country by journals professing to be truthful and non-sensational.

On his return, he was tendered and accepted the position of Sacramento correspondent of the same paper, during the Legislative session. In this new position, to say that he admirably succeeded, would be but faintly to convey any idea of his merits. His treatment of every subject; his criticism of every measure; his pen-portraits of budding statesmen, and veteran legislators; his exposures of fraudulent schemes, were all presented in a style which fairly took the public by surprise. Epigram, wit and humor abounded in almost every paragraph, interspersed by trenchant and convincing argument. If they were at times ironical or sarcastic, they were free from anything like malignancy. He subsequently became editor of the *Chronicle*, occupying the position until the Spring of 1872, when he tendered his resignation, and was succeeded by Frank M. Pixley. His connection with that paper did not, however, then cease;

he continued for a period of about two years further to write its mining and stock and political reviews.

After his editorial duties terminated, he formed a copartnership with T. J. Poulterer, Esq., with whom he jointly held a seat in the San Francisco Stock Exchange. The new firm, at first successful, met with reverses, and was dissolved after an existence of about six months.

Mr. Verdenal, however, was by no means discouraged. He felt that the mining interest was the all-dominant and permanent interest of the Pacific Coast, and that with that interest he should bind up his fortunes, and with it "sink or swim."

On the Comstock, in Utah, in Arizona, in the Black Hills, he became interested in numerous valuable mines, most of which he inspected personally, and of which he is the Secretary. Among these may be mentioned the Leeds, of Utah; Rye Patch, of Nevada; Home Stake, Golden Terra, and Caledonia, of the Black Hills; Tip-top, of Arizona; Albion, of the Eureka District; Chieftain, of Bodie; Don Quixote, of Lake, California; New Coso, of California, etc.

Some three years since, this gentleman purchased a controlling interest in that very able and spicy journal known as the *Daily Exchange*, which, while a paper of general circulation, is in the main devoted to the mining interests.

The paper is still under his general management and control, and he finds time, notwithstanding his other manifold duties, to contribute largely to its editorial department. His facility for composition is simply marvelous. While engaged on the *Chronicle*, he has often been known to write two and three columns of editorial matter in a couple of hours only before the paper went to press. Conceiving his subject strongly—possessing a diction which is at once copious, elegant, and simple—he grapples with it; there is no such thing as hesitancy; he seems inspired; and he throws off page after page without interlineation, or the alteration of a punctuation-mark, apparently regretting all the while that he cannot exceed the locomotive in its speed.

In his manners, Mr. Verdenal is genial and courteous, always indulging, when occasion offers, in sallies of humor, not unfrequently mixed with innocent bits of sarcasm.

His temperament is ardent, his nature sanguine, and his disposition generous almost to a fault. Bitterness, rancor, or hate have never found lodgment in his breast. He is a live man *par excellence*, and no believer in theories or isms of any sort; he believes in man as he finds him, and in society as it is, and regulates his life accordingly. Shakespeare is his favorite author, not Darwin.

In 1869, he led to the altar Miss Susie L. Edelen, a resident of Elk Grove, Sacramento County—a beautiful and highly accomplished lady, who has borne him three children, who seem to reflect the genius of the father and the beauty of the mother.

GENERAL THOMAS H. WILLIAMS.

The above-named gentleman is one of the most successful mining operators San Francisco has yet produced. He is a lawyer by profession, and not until recently did he abandon his life long pursuit, but the care of his immense fortune made by fortunate investments in the bonanza excitement four years ago, compelled his retirement from the Bar. General Williams now confines his operations mostly to the reclamation of immense tracts of so-called swamp lands along the Sacramento and San Joaquin rivers, and in his work of redeeming these acres to cultivation has already expended nearly a million of dollars. General Williams is the eldest son of the Hon. Sherrod Williams, for many years a member of Congress from Kentucky, and at one time quite prominent in National politics. He came to this coast in 1852; and the gold fever being then at its height in El Dorado County, began the practice of the law at Coloma, and there he remained for several years. He attained eminence in his profession at once, and being an ardent Democrat in politics, soon came prominently before the public as a skillful political manager. When John B. Weller was selected Governor, General Williams was elected Attorney General of the State on the same ticket, an office which he filled with consummate ability. When the Washoe excitement broke out, it proved a perfect bonanza for lawyers of ability, and General Williams was not slow to improve the opportunity. He removed to Virginia City without delay, soon became the leading counsellor on the Comstock and it was there he laid the foundation for his immense fortune. In a prominent suit which he won in 1870, his client induced him to accept 100 feet of what Clarence King called barren ground, in the northern section of the city, in lieu of his fee of \$5,000. The General regarded the proposition rather reluctantly, but seeing that he was not likely to get anything else, he accepted it. This ground was known as Central No. 2; it was subsequently incorporated with the California mine, and proved to be the ground through which ran the very richest and bulkiest part of the great bonanza. By the discovery and subsequent rise in value of the property General Williams made a fortune of over \$4,000,000 and by his investment in adjoining property, he rapidly accumulated at least \$2,000,000. He retains nearly the whole of that fortune to this day, and has added to it considerably more.

General Williams is one of the most cautious and careful operators in the street. He never buys a stock without merit and plenty of it, and no man knows better when to sell than he. The only time he allowed himself to be caught in any way, was when he found himself

loaded up, about two years ago, with some twenty thousand shares of Savage. He owns that Savage to this day, and means to hold it to the end of his career, or until something of value is found in it. About a year ago the Savage stock-holders invited the General to take the entire charge and management of the property, and he has done so since with rare business tact and prudence. General Williams is not in some respects a popular man, in the sense of popularity as the street understands it. He has the reputation of being hard and cold and unsympathetic, while others, who do not know him well call him parsimonious. He is, in fact, none of these. No man has a kinder heart, or more sympathetic feeling with those in distress than he. He is inclined to be vindictive, and to men who have ever sought to injure him, or to take advantage of him in any way, he shows no mercy. But to his friends those who remain steadfast and true, and who act honorably with him in all things, no man could be a truer friend or show more warm-hearted interest in his affairs than General Williams. General Williams has a family of five children, with whom he lives in an elegant home in Oakland.

THOMAS BELL.

“And who is that shrewd, quiet-looking gentleman, with clean-cut face and speculative side whiskers, talking so positively to Horace Hill,” asked a gentleman the other day of a *cicerone* who was showing him around the stock speculating centers. It was Thomas Bell, Esq., an old resident of San Francisco, a gentleman by birth, a financier by instinct, and a capitalist, *ex necessitate rei*. Horace Hill, being a good broker as well as a personal friend, does a great deal of business for Mr. Bell, and they were probably discussing the propriety of buying another thousand or so of Bodie, Mr. Bell's latest successful venture. Mr. Bell has large and varied interests in the mining industry of the Pacific Coast. When a good thing is on the tapis, Bell is sure to come in for a slice, because he can always draw his check for an unlimited amount; he likes the excitement of pastures new, and has confidence in mining ventures. If we had all the dividends Mr. Bell has drawn from his mining interests, we should have purchased a principality somewhere long ere this. Mr. Bell has been identified with the house of Barron & Co. since its existence, and may now be called the Quicksilver King of the Pacific Coast. He is largely interested in the North Bloomfield Hydraulic Gravel Company of Nevada County, probably the most colossal mining enterprise of the day, and in many valuable California quartz mines. He figures personally as a Bank Director, being one of the leading managers of the Bank of California, whose resuscitation in no small way is attributable to his determined efforts. Mr. Bell dabbles considerable in stocks, but his native, canny-Scotch shrewdness makes winning where others would be losers. Bold at a venture, he is yet cautious in the progress of the venture. He can see danger ahead farther than the average, and his position gives him opportunities for knowing things which few possess. Rather suspicious, the least crookedness rouses the lion, and trouble is sure to come to somebody. And yet, Mr. Bell, as a friend, is the staunchest and truest. It hurts him to say no, and there must be very good and undeniable grounds for his action when he turns away from a prayer or a speculation. Quiet and unostentatious in his manners, comprehensive in his conversation, wide-awake as to contingencies. Mr. Bell is, in many respects, *sui generis*. He has a host of friends who look up to “Tom Bell” as one of those who is a friend indeed. Mr. Bell is gradually climbing up life's grade, but his good habits and quiet ways of life have prepared him for a ripe old age. Ten years make but little difference in his appearance, and he meanders along the street as spry as he was time ago. At home, Mr. Bell is a prince in hospitality; in his office, he is a gentleman, and no wonder he is popular with all who know him. Mr. Bell counts his money by millions. Mr. Bell is a native of Scotland and, according to the best authorities, must be about fifty-six years of age. He lives in comfortable quarters, on Bush street, where friends are always welcome to his hospitalities.

COL. JAMES M. BARNEY.

Col. James M. Barney, of Yuma, Arizona Territory, is chiefly known in mining circles by his ownership of the controlling interest in the famous Silver King Mine—the richest silver deposit yet discovered in Arizona. For nearly fifteen years Col. Barney has been a power in Arizona mercantile interests, and his mining celebrity was rather thrust upon him. Col. Barney was born in Cayuga County, New York, in 1838. When but sixteen years old, or in 1854, he came to California, and went as an humble clerk in a store in Santa Cruz. From there he went to Watsonville, and the next ten years of his life were spent in the same section. He was too enterprising, however, and had entirely too much ability to remain in a subordinate position longer than to obtain a complete knowledge of business; so in 1865 we find him in Arizona, where he soon accepted a heavy freighting contract for the U. S. Government, a trust that he fulfilled with all the energy of his nature. Col. Barney was one of the pioneers of the new Territory. He performed his contract in the face of herculean difficulties, but he did his work well, and won the entire confidence of the military authorities, a confidence which he enjoys

to this day. In addition to his business for the Government, the Colonel soon launched out in a mercantile way, becoming a member of the firm of Geo. F. Hooper & Co., at Yuma, with branches at Maricopa Wells and Camp McDowell. The two latter were placed in Col. Barney's charge. The firm subsequently underwent many changes, Col. Barney each time securing a greater interest. From G. F. Hooper & Co. it became Hinton, Hooper and Co., then Hooper, Whitney & Co., then William B. Hooper & Co. Finally Col. Barney bought out the last of the Hoopers, and became sole owner of the business, which by this time had grown to enormous proportions, under his indefatigable and successful management. For several years he enjoyed a monopoly of the heavy trade of Western Arizona. He was the only man who dared attempt the government's immense freight business; and until the railroad was completed to Yuma, Col. Barney handled every pound of military and Indian stores and supplies sent to Arizona from the Pacific side. About this time, having made heavy advances to the owners of the Silver King Mine, just opened near Florence, he became possessed, rather against his will, of an interest in that property. The mine began to show up immense treasures, and he subsequently increased his interest, until he owned one half the mine, at a total cost of \$260,000. The Silver King still improved in richness as depth was attained, and when the permanency of the ledge and the extraordinary wealth of the deposit seemed placed beyond question, he in company with one or two friends bought out Mr. Reagan's interest of one half, for the princely sum of \$350,000. Since the mine has been under his management, it has paid up to September \$400,000 in dividends, and will pay regularly hereafter at the rate of \$50,000 per month.

Col. Barney now spends a great deal of his time in San Francisco. He is immensely wealthy, and though but 40 years old, has made every cent of his million or so, by his indefatigable energy and business tact and foresight. He is one of the most enjoyable of companions and devoted of friends. In person he is under the average size, but his vitality and business "snap," never leave him for an instant; and to people who are slow and methodical he seems at least ten feet high, in the way he goes about things. The Colonel is as true to his friends as steel, and he expects his friends to be as true to him. He now and then takes a flyer in stocks, though he himself says stock speculating is not his forte. Give him the management of a team of wagons with from ten to twenty mules each, or the handling of \$250,000 of frontier accounts that are open and none too safe, and he wouldn't "shake off" with even Flood himself; but when it comes to watching Pine Street and its various vicissitudes, he says he doesn't care to turn his hair grey in the effort.

ALSOP J. HOLMES.

Here is a man who has climbed the difficult ladder of fortune from its lowest to its topmost round—climbed it, too, without aid from others; without enmities, jealousies, or strife; seeking to overreach nobody and to displace none; advancing year by year and step by step, in a resolute, quiet way. Let us see if the facts will not verify these statements. Alsop J. Holmes came overland from Wisconsin in 1850, having arrived at Nevada City, California, in September of that year. Making an inventory of his personal effects on reaching that point, they were found to consist of a suit of jean, badly worn; a roll of blankets; and ten cents in coin—but of what denomination we are not advised. Financially, he had reached bed-rock. But he had youth, energy, and a pair of stout arms left to him, all of which were at once brought into play to fairly earn the ten-dollar daily wage for which he had hired himself out. As soon as he had accumulated a small stake, he bought a claim, and, becoming his own employer, dug from it over \$3,000 in the course of two weeks. With this money he embarked in other business in Stockton; but, longing for the freedom and excitements of a miner's life, he soon gave up this new pursuit and repaired once more to the diggings, where for the next ten years he followed the career of a prospector and miner, joining in the stampedes that carried this class of men from one locality to another, until he had visited nearly all parts of the gold fields from Mariposa to Shasta. While meeting with a good share of the mishaps and ill luck incident to a miner's life, he was, on the whole, pretty fortunate—having got so far ahead in 1853 that he felt warranted in making a visit to New York that year.

In 1861, the Washoe excitement carried him over the Sierra, where, on his arrival at Gold Hill, he took charge of work on the Petaluma Quartz Mill, then in course of construction. Here he remained, building mills or having charge of batteries, until the Summer of 1863, save only a few months spent journeying to and from Idaho—an irresistible craving for new adventures having seized him simultaneously with the reported discovery of rich mineral deposits over in the Owhyhee country. He had barely recovered from this attack, when the old malady again broke out and floated him off to Reese River, where he resumed the business of mill-builder, amalgamator, miner, etc. Leaving Austin, and perambulating through Eastern Nevada about the time the Pioche fever raged, he came back to that town, and thence journeyed across the deserts to Columbus, then a rising camp, but inhabited almost wholly by Mexicans and other good miners but shiftless sort of people. He reached that place in July, 1865, just in time to help celebrate the Fourth of July, which was done in true American style—Count Adolphus, otherwise known as A. Hank, having contributed a poem in honor of the occasion. This over, Holmes addressed himself to business, and was not long in discovering

the promising character of many of the lodes in that district, a number of which he proceeded to secure either by location or purchase—Mexican holders being willing to sell out for a little ready cash. There were in this vicinity but poor facilities for opening up and working mines. Labor and supplies were costly, wood and water were far from abundant, there were no mills, only a few Mexican arastras for reducing the ores, and the exchequer of Holmes was by no means overburdened with funds. Nevertheless, the old stock of resolution remained in pretty good supply. His training had been of the right kind, and he knew how to make it tell to advantage.

In I. C. Bateman, then operating at Austin, he had a good friend, and to the extent of his means a good backer, the two being partners in this Columbus venture. On Holmes, however, rested the burden of the business, and to the able and faithful manner in which he carried through his work the subsequent prosperity of this entire section of country is mainly due. His first efforts were directed to the development and outfitting of the Northern Belle Mine, one of the extensive group of lodes early secured by him. The description of this mine, published elsewhere in this work, will testify to the efficient manner in which he accomplished this task. In illustration of what he effected in this remote and barren region, we can hardly do better than quote the remarks upon this point that appeared in a mining journal several years since: "It is proper," says that paper, "that we should recur to the great service rendered the district by Mr. A. J. Holmes, who for ten long years devoted himself to the business of prospecting the country and developing the group of mines in which he was interested, with an energy, assiduity and singleness of purpose never excelled by even the most intrepid of the brave, hardy and resolute class to which he belongs. Owing to the sterility of the country and the great cost of freighting in supplies, the opening up of these mines was both expensive and arduous; yet this man, with only such means as could be realized from the mines themselves, kept up the contest single-handed and alone during all this long time, never having been in a position admitting of a moment's intermission of toil or relaxation of vigilance. In persevering so long and accomplishing so much under circumstances so trying, and with means so inadequate, this heroic man has supplied an example that ought to be worth much to the pioneer prospector and miner. In the success achieved by him they may read a useful lesson, teaching the value of abiding habits and a steady application of labor in a calling, calculated to inspire those who pursue it with a restless, roving spirit, beyond all others."

This, we hold, is a good record; nor do we see how any man could well make a better, or fill a more useful sphere than this. Mr. Holmes is still engaged in extensive mining enterprises, bringing his large experience and good business sense to their furtherance. Just now he is giving his attention to the development and equipping of the Potosi group of lodes, also in Columbus District, having already engineered the same to a great success. He has also important mining interests in Arizona and elsewhere on the Coast, his busy habits and active life forbidding that he should cease to labor. Mr. Holmes' rough pursuits have not told heavily on his health, which is still vigorous; and, as he has barely crossed the meridian that marks the noon of life, he may, with his good habits, reasonably expect to enjoy his well-earned wealth for many years to come.

ALMARIN B. PAUL.

Here is an individual of whom volumes might be written and much of his active, useful and eventful career be still omitted. He is one of those many-sided men whose resoluteness, breadth of view and self-reliance, laid the foundation of the Western Empire of the Pacific. A scholar, merchant, mechanic, inventor and patriot, of indefatigable industry and push, such a man would carve his name deeply on the records of any community. In a new country, and among such a people as those who dwell in this "sunset land," with its wondrous variety and richness of resources, such a person as Mr. Paul became "the right man in the right place." To give even a comprehensive epitome of the works of such a person in a couple of pages of the MINING REVIEW, requires powers of condensation such as we do not possess. To give a fair biography of him in such a compass, is almost equal to the task of the man who assumed to write a history of the United States in two words, and accomplished the feat by stating "It is." No one could dispute the fact, but it was only a naked fact. Just so with such a biography as this of such a man as Almarin B. Paul. We can do little more than state the fact of his existence amongst us.

The object of our sketch was born in the State of Missouri, more than fifty years ago, and came to California from St. Louis in September, 1849, bringing with him an immense stock of merchandise, with which he commenced operations as a merchant in Sacramento, and soon became one of the richest men in the then Territory of California. Having been engaged for many years in mining for copper and silver in the Lake Superior region, it was for the purpose of turning to account his knowledge and experience thus acquired, that Mr. Paul came to California. Therefore, having disposed of his merchandise, we find him in January, 1851, working in the mines in Nevada County, which is, and ever has been, the richest quartz mining county in the State, where, as he told us years ago, although the rock averaged \$30 per ton, it did not pay to work, owing to inability to save the gold. So firmly was he impressed with the neces-

sity of improvement in the processes for saving the precious metal, that in July of 1851 he went to New York to call attention to the possibilities of quartz mining in California. Finding capital too timid to touch what it did not then understand, he returned to California in 1852, and went into business as a merchant at Sacramento. But the tame routine of trading did not satisfy him, and in the Spring of 1853, we find him bending all his energies to building up San Francisco. He continued in the real estate business here till 1856, when the famous "Vigilance Committee" of that year upset a good many things, and Mr. Paul embarked in the publication of the *True Californian*, an able and fearless advocate of the Vigilantes. In 1857 he sold his interest in the *Californian*, and went into the mining business, and erected the Oriental Quartz Mill, in Nevada County, which through the improvements he had perfected in processes in saving the gold, was a most profitable concern. He conducted the business till 1860, when the now famous Comstock mines in the State of Nevada first came into notice. Mr. Paul was among the first to perceive the value of that wonderful discovery. He it was that formed the first company to systematically work those mines. He it was that erected the first mill, of twenty-four stamps, to work the silver ores, while he contracted to reduce and extract the bullion for everybody at \$30 per ton.

In his quiet, unpretentious little office in the Safe Deposit Building, in San Francisco, may be seen the first two little buttons of silver ever cupelled from the Comstock ores, and a portion of the first bar of that metal ever obtained from these ores by mill process. These historical mementoes of Mr. Paul's enterprising skill, elegantly framed and stamped as duly authenticated documents, were presented to him by the citizens of Nevada. It was while operating in this, the first Washoe mill, that he introduced the now universally used "pan process" for working silver ores. It is a suggestive illustration of the rewards of inventors, that Mr. Paul was ridiculed and laughed at for making such an innovation in milling silver ores, as these pans. Yet to-day, there is not a mill for milling these ores in the world, that is complete without them. As he never patented this great invention, he never received any other compensation for its discovery, than the profits of working it for a few years. Such was the success of the first mill he put up, that he erected another, with sixty-four stamps, near Gold Hill, in which he invested \$250,000, an enormous sum in those days. The integrity and business ability of Mr. Paul was so generally recognized by the people of Washoe, that in 1861 he was elected President of the Board of Commissioners of Storey County, and laid the foundation for the organization of that county, which was then nearly all there was of the present State of Nevada, and he could have been elected to any position he desired, but declined all political office.

In 1865, having realized what was then considered a handsome fortune, Mr. Paul sold his mill and mining interests and embarked in the banking business at Gold Hill, and it will never be known how greatly his money helped to develop the Comstock Lode. To show how much his capital and energy had to do with developing the mines on that lode, it is only necessary to state, that when Mr. Paul sought the co-operation of the Presidents of the Ophir, Savage, Gould & Curry and Mexican mines, to systematically work these claims, they declined to invest a dollar to erect a mill to work their ores. It was a few men, whose names are now nearly forgotten, who owned what is now known as the "Imperial" ground, that gave him any encouragement. It may be stated (in parenthesis) that Mr. Paul was the organizer of what is now known as the Imperial Consolidated Mining Company.

Finding banking and money lending uncongenial to his active spirit, in 1867 he sold his establishment to the Bank of California, and undertook to develop the mines of Inyo County, California. Owing to the refractory character of these rich ores, and his determination to conquer, and compel them to yield their treasures for the use of mankind, Mr. Paul spent his fortune and years of steady mental and physical labor. In 1868, he obtained his first patents for new processes and improvements for amalgamating the precious metals, and not a year has since passed without a patent being obtained by him for such machines—some of which are in use in all the States and Territories on the Pacific Coast. He has expended nearly \$100,000 in perfecting machinery for amalgamation by a dry process. For the last twenty-eight years he has devoted his life and means to discover a process and perfect machinery for extracting the precious metals from their ores, cheaply and thoroughly. Such a man, though scarcely known personally to any one outside his circle of friends, deserves more than a passing notice in such a work as the *MINING REVIEW*, not because he has done so much to develop the mining interests on this coast, but because of his great services in other fields. He it was, while acting as Commissioner of the famous Sanitary Fund, placed Nevada at the head of all the States in the Union, for its *per capita* contributions to that fund. He collected more than \$150,000, from little more than 20,000 people.

As a writer, Mr. Paul is vigorous, clear and pleasing. His remarkable articles over the *nom de plume* of "Cosmos," published in the *Bulletin*, concerning men and things in Washoe in early days, show the vein of quiet humor that permeates his nature, while his later articles, published in various papers on the subjects of "Finance" and "Mining," show the practical common sense of the man of knowledge and experience.

His latest public service was the arranging (in connection with Prof. Hanks) the magnificent collection of Pacific Coast minerals for the Paris Exhibition. There is an instructive lesson to be learned from the life of such a man as Almarin B. Paul, and we close our brief biographical

sketch of him with reluctance, because we feel our work is not half done, though the space allotted us has already been overran.

Through his writings for the press, and over 10,000 pamphlets which he has published and distributed gratis, and which have found their way not only in every mining camp of the Pacific Coast but elsewhere, he may be considered more extensively and favorably known than any individual mining man on the whole Pacific Coast.

COL. HENRY S. FITCH.

Col. Henry S. Fitch, formerly one of our leading business and mining men, was born in Kinderhook, Columbia County, New York, something over 50 years ago. At the age of 12 he struck out for himself. Inclination led him into mercantile life. From a country store, in western New York, he advanced, in 1837, to an important position in an extensive jobbing house in New York City. Upon the breaking out of the war with Mexico, he abandoned the quiet duties of the counting-room for the hazards of the battle-field. Raising a company, he went to the seat of war as First Lieutenant, from which he was soon promoted as Adjutant of the Second Regiment; then to a Captaincy, and finally to Lieutenant Colonel of his regiment. In 1849, he came to California, across the plains; settled in San Francisco in its very infancy, where he engaged in the real-estate business. Acquiring a fortune, he took an active interest in the first movement in favor of a trans-continental railway, offering a gift of \$10,000 for the best essay upon this great national enterprise. In 1859, Col. Fitch wrote himself, a pamphlet upon the feasibility and importance of the project, which was accepted by Senator McDougall and others as the most able document which had then been given to the public. Upon the special request of some of the leading men of the State, he published another pamphlet, entitled "*State Policy in Relation to the Pacific Railway.*" This pamphlet, like the first, attracted much attention, and was chiefly instrumental in organizing public thought and leading the way to the "Pacific Coast Railroad Convention"—that Convention, in which Col. Fitch was appointed Chairman of Address to Congress, for aid in the construction of this great highway, as well as to the President and his Cabinet, whose influence it was desirous to obtain. Though this action, on the part of Col. Fitch and others, for the construction of the great Pacific Railroad, did not then result in anything more tangible than committees, resolutions and addresses; still it was the beginning—the genitic movement out of which finally came the great work.

Upon the discovery of the Comstock Lode, Col. Fitch was among the first who seemed to have conception of its vast wealth. Acting upon this belief, he now turned his attention to its development. Real-estate had yielded him its benefits, and he now sought for larger remunerations in the new field. As an evidence of his enterprise and largeness of views, we find him, in 1862, at the head of mining companies, which embraced in their aggregated plans and work over seven miles of tunneling and shafting at different points along the Comstock. From that day to this he has been engaged both in mining and stock operations.

But the chief reputation of Col. Fitch must rest upon his claim as a writer upon finance. Upon this question he may be justly denominated the great Financial Pamphleteer of the Pacific. And, indeed, it is a question whether he does not rank first among all American writers upon this intricate and profound subject. His criticism of Senator Jones' first speech upon this question in the Senate elicited a request from the Chairman of the U. S. Monetary Commission to contribute his views upon the subject under consideration. This request was met by a treatise upon money, its nature and functions, which has never been equalled as an instrument of popular enlightenment. It is in truth a financial spectroscope, revealing to the dullest brain the constitution and laws of money in all their logical and equitable meanings. Under this exposition, the occult becomes as plain as the simplest problem solved, and the prosaic is transformed into a poem as entrancing as a romance. His speeches before the National Currency Convention, at Dashaway Hall, in this city, before the State Executive Committee of the National Party, and also at Platt's Hall, on April 5th of the present year, may in some respects be more valuable, because more comprehensive and more elaborate. These not only embrace all the principles and truths of his contribution to the U. S. Monetary Commission, but they evolve laws and philosophies which make not only finance an easy and fascinating study, but political economy. In his Platt's Hall address, he brings forward from the great arcana of primal truth, testimonies before which the accepted conclusions of ages fall, as did the epicycles and deferents of Ptolemy before the revelations of Copernicus.

The friends of Col. Fitch can trace with ease the lines of his thought through much of that great report which has been given to the world by the United States Monetary Commission. Not that one iota of distinction would be coveted, or one measure of credit denied the talented Chairman of that Committee, but like the chemical influences of solar light, which is found so delicately and mysteriously incorporating itself into all organic life, do we find the teaching of our subject manifesting itself like some exquisite color or pleasing perfume in almost every section of that grand production.

Finance and political economy are subjects toward which the genius of Col. Fitch turns as instinctively and freely as the needle turns toward the magnet. It is here that he finds the sweetest and most plenal rest. The love of Petrarch was not more fervid and constant

for the beautiful Avignonese, than is his for these twin sisters of an advanced civilization. John Sherman he recognizes as either a financial dolt or a traitor to American prosperity—the tool of a great Anglo-American Bank Ring, which aims to the suppression of American energy and skill, and the maintainance and upbuilding of British empire in the world's fabril realm. Basing our conclusion upon a fact of philosophy as well as of history, we are not backward in predicting a prominent place in the future estimation of the American thinker, as well as American masses, for Col. Fitch. He may not be called to elevated positions in political life, but his expositions of fundamental truths must find an enduring lodgment finally in the popular heart. Ideas that spring from eternal laws can no more be checked in their march to final triumph, than can the irresistible evolution of matter. Ideas born of law are omnipotent as is law itself. Ignorance may check for a time their expansion, but divinity is behind them and nothing human can permanently resist their step. So shall the new financial and economic revelations of our subject, inasmuch as they have foundation in philosophy, in the end take the place of Ricardo and even of Adam Smith; becoming with the future axiomatic and sovereign. Jealousy and ignorance may pronounce these predictions the vapors of an abnormal sentiment. But truth is truth, and no assertion can overthrow it. And why should it be thought a foolish thing to infer that finance and political economy have not yet reached their ultimate; that as now accepted, these sciences are false in postulate and in conclusion, and are waiting the coming of some great master to lay anew and philosophically their foundations, that superstructures of the divine and ideal may rise to the grandeur and majesty of civilization. And why should it be deemed foolishness to declare that that master has risen among us? Can there no good come out of Nazareth? And must public honors first rest upon the prophet before his lips shall be unsealed to the uttering of inspired revelations? The great pivotal thoughts with the race, have had their genesis in the secluded and obscure nooks and corners of the social world; and when brought into the light, they have, sometimes for a century, been shelved by the scholar and trampled upon by the throng.

To assume that the ultimate in the sciences under consideration has been reached, is to assume a clear improbability—in fact an absurdity. Adam Smith, it has been said, "laid the foundation of the freedom of industry and of unfettered commerce among States, in reason." But this great light of Oxford wrote more than one hundred years ago, and was the exponent of theories which were based in the personal and conventional advantages of aristocrats, landholders and merchant princes. The advancement and independency of the masses had no place in his systems of finance and political economy. But to-day many of the hypotheses of Adam Smith, which have been recognized as fundamental truths, are like some of Newton's, found to be simply hypothetical; vanishing in the presence of modern revelations. Col. Fitch to-day is an humble citizen of California, although a member of the National Committee of the great Greenback Party, but because of this obscurity, does it follow that it has not been given him as a high priest of thought to bring forth from mysterious and infinite depths great principles upon which may be builded a grander and more perfect industrial life? For reply, we wait trustingly for the verdicts of posterity, the results of its industry and the glories of its inspirations.

JOHN F. BOYD.

Mr. John F. Boyd, a native of Pennsylvania, was born about the year 1840. For a young man and a young operator, John F. Boyd stands among the most successful. Without being a strictly scientific engineer, Mr. Boyd is about as shrewd and careful a mining expert as can be secured to report upon mines and mining interests. He formerly was wont to travel with Gen. Gashwiler; and many a mile they traveled together in mud-wagons over the deserts of Nevada, and in the wilds of Idaho. The Bodie District has been a field of harvest for Col. Boyd. He owns a large interest in both the Standard and Bodie mines, the two dividend-paying mines of the district at present writing. He approved of Northern Belle as a mining venture, and for many months reaped a rich harvest in dividends. Some of his ventures have not been successes, but it would be an impossible task to find an expert or operator who has never been deceived by appearances. Mr. Boyd is closely allied with Gen. W. M. Lent and William Willis in his mining enterprises. Those who know place Col. Boyd's bank account and financial resources at over a million; and he is young enough to live for threescore more years.

J. M. BUFFINGTON.

In this gentleman we have one of the veterans on the staff of mining secretaries on this Coast. At the time that the incorporation of mining companies, incident to the discovery of the Comstock Lode, began to multiply thick and fast, he was, because of his clerical fitness and other qualifications for the position, chosen to serve as secretary for several prominent companies; which place is held by him still, in some cases, after a lapse of seventeen years—a fact that expresses all that need to be said touching his aptitudes and entire fitness for the business. Mr. Buffington is a pioneer, having arrived in California from Massachusetts, his native State,

in June, 1849. For thirteen months at first he followed mining, and with such good results that he was at the end of this time enabled to come to San Francisco, and with his net earnings commence a ship-cracker bakery. He went largely into the business, opening, also, a branch establishment in Stockton. Despite the reverses attendant on almost every pursuit in those early days, these bakeries, upon the whole, proved profitable, Mr. Buffington having considerable means when he retired from the business, and turned his attention once more to mining and mining affairs; for he has during all these years been largely interested as a stockholder in various mining companies, while acting as secretary for these and others. In this field of investment he has experienced, like all others who adventure here, some sharp changes of fortune, having made money and lost it, being at the present time financially well off. But no accumulations of wealth can ever suffice to drive a man of his industrious habits and active temperament into a life of inaction and ease. He likes the excitements of business—the healthful stimulus of a stirring, energetic life, and will probably be found engaged in them to the end. In his time Mr. Buffington has been Secretary of more than one hundred different mining companies, some of them of a leading character. To-day he holds that position for at least a dozen, the Union Consolidated, South Comstock, Crown Point Ravine, Chalk Bluff, Moore's Flat Blue Gravel, North Consolidated Wyoming, Golden Ophir, Gold Deposit, &c., he having held the Secretaryship of the first three ever since they were incorporated. He was Secretary of the Caledonia Company at the time that John W. Mackay was superintendent of that mine, and a very efficient superintendent he made, says Mr. Buffington.

Having filled this responsible position for so long a period and for so many companies, Mr. Buffington has, as may well be supposed, seen many striking changes, and had many strange experiences in his time. He has enjoyed the confidence of the great magnates of the mining world, has had an inside view of the secret machinery whereby stocks have been manipulated and the market worked. He has been cognizant of the pools and plans, the combinations and schemes of those who controlled or struggled for the supremacy of this great interest, but this has all been knowledge that he could neither use nor reveal, his official position imposing upon him the duty of secrecy and silence. He has seen unknown and neglected mines emerge from their obscurity and gradually ascend the scale till they had reached an overshadowing greatness, and those that stood high in favor, because of an unwonted production, pass into impoverishment and sink out of sight. He has seen ground that would not sell for a cent an acre come to be sold for a thousand dollars a foot, and *vice versa*. Stock in Union Consolidated, of which he fortunately still holds some, once went begging for purchasers at six and a quarter cents per share. To-day they are worth over \$100. Of fortunes lost and won, of anguish and joy, of hopes and fears, what stories could this veteran Secretary relate. What thousands of trembling poor have come to him for advice, what hordes of stock "sharps" have sought him for "points," what tales of disappointment, what sorrows and griefs has he been forced to hear, for they who lose are apt to betake them to the secretary's office that they may gather from him consolation or administer to him some reproof, while the successful ones rarely ever come to receive his congratulations or to express to him their thanks. In days gone by Mr. Buffington has served the public in the capacity of school director, besides filling, we believe, some other positions for which his superior education well fitted him.

HOWARD COIT.

This gentleman, who during the past ten years has occupied a most prominent position in the San Francisco stock market, is one of those few individuals whom Fortune favors by making places for which Nature has adapted them to fill. That destiny which

"shapes our ends,
Rough hew them as we may,"

brought him to San Francisco just at the time when the stock market was moving upwards to the zenith of its power, and having friends, an herculean form, stentorian voice, incorruptible honesty and genuine *bon homme*, he was just the man for the times, and has remained on the "top of the tide" ever since.

Born at Buffalo, New York, in 1840, he is still a young man. He was educated at the High School of Norristown, Pa., on leaving which, in 1857, he came to our Golden State in search of Fortune, and vainly wooed her for about three years among the orange-groves and corn-fields of Los Angeles. But not liking that sunny section of our "sunset land," he turned his face toward Arizona, with its rich mines and fierce Apaches. For five or six years he studied mining there, under difficulties, his time being about equally divided between looking after his own scalp and the interests of his employers. Disgusted with that sort of business, he came to San Francisco in 1867. Here Fortune met him, and has continued to smile on him ever since. In November of that year he was elected a member of the San Francisco Stock Board, and in the following month was elected caller of that body, an office to which he has been annually re-elected ever since, and will probably continue to be re-elected so long as he may desire to retain the position, as it would be almost impossible to find another man that could exactly fill his place. It is not profound scholarship, great shrewdness as a "mining sharp," or knowledge of stock manipulations, nor a good pair of lungs, a handsome, manly form, or imperturbable good humor, or even

inflexible integrity that fit a man for the office of caller of the San Francisco Stock Board. Howard Coit has all these and something more, which inspires such respect and confidence that although he has sold more stocks than any other living man, both buyers and sellers—those who have lost and those who have won fortunes through his ministrations—are satisfied with his fairness and impartiality.

His greatest streak of good luck—that is, so far as the stockholders in the concern are interested—occurred in 1869, when he beat the field in the race for the belle of San Francisco, Miss Lillie Hitchcock, a young lady whose beauty, sparkling wit and general benevolence made her one of the historic characters of the Pacific Coast. While hundreds envy him, there are none that do not wish him well, and a happier couple do not live on this side the pearly gates of Paradise.

WILLIAM H. HOWLAND.

The individual whose name heads this article first saw daylight at Saratoga, New York, in the year 1822, and is therefore in the prime of active manhood. Mr. Howland arrived in California in May, 1850, and commenced his first labors in the mines the month of his arrival, meeting, as all did in those days, a due reward for industry. Knowing there was an immense emigration coming in, and that the most of them would have a desire to "cross the river," he conceived the idea of a ferry across the Sacramento, at Sacramento City, and by September, 1850, started, and boasts of having ferried across the whole emigration of 1850 and '51. Mining, however, was his desire, and in 1856 he located at Rich Gulch, Calaveras County, California, and there built a mill, on what is now known as the Gwinn Mine. About this time he brought out what was known as the Howland Rotary Battery, a mill which had for a while quite a run. In 1859 he started the well-known Miners' Foundry, and under the title of Howland, Angel & King it had one of the most successful runs of business of any establishment before or since. Then was a lively time, and Mr. Howland's familiarity with mining, and what was required as successful machinery, gave him the foremost rank as a mechanical mining engineer. In 1860, he went to Washoe, and out of the whirl of excitement he soon had his establishment loaded down with business. His first work for Washoe was the building of Paul's Pioneer Mill, and he claims the honor of setting in motion this, the first silver mill of the State of Nevada, besides being the bearer to San Francisco of the first Washoe silver brick by mill process. Among his other work about this time, was the building of Coover & Harris' Mill, Paul's sixty-four stamp mill, at Gold Hill, the Empire, Rhode Island, Stewart & Kirkpatrick's, De Land & Skae, also, the Wide West, Antelope, and Real Del Monte, at Aurora, as well as others in California, Mexico and Arizona. To Mr. Howland belongs the credit of first bringing out the steam bottom pan, and which made so successful the working of the Wheeler & Varney pan. In 1870 he gave up the foundry business and went to New York, returned West within a twelvemonth, locating now in Utah. Here he started the Howland and Aetna tunnel, in Little Cottonwood; located and worked the celebrated Flagstaff Mine, and here built for a Michigan company a twenty stamp mill. He also located and laid out the town of Park City, and in due time re-located in San Francisco, where he is making himself active at his old pleasure of handling mines and building mining machinery.

Mr. Howland is a man of great natural abilities, assuming no more than he clearly understands, and like most of the early mining men of this coast, mining has become a second nature, with a world of practical experience in mines and mining machinery; he moves on actively, for profit or loss, as the wheel of fortune may turn. With this class of pioneer miners, the love of gain is not the only incentive, but the love of venture besides; from it they study philosophy, science, and religion—though like our worthy friend, they are not apt to get over-religious—and yet absorb stability and divinity from the metals and the rocks.

FREDERICK MARRIOTT.

What are we to say in the very limited space at our disposal of a man whose career has been as long and varied as that of Frederick Marriott, Sen., the universally known proprietor of the celebrated *News Letter*? His face is as familiar to all who frequent the busiest haunts of men as the pages of his famous paper; his residence in the community dates back to the earliest pioneering times; and he counts his friends by thousands; yet so long and active has been his life that the prominent part he has played in California is, after all, but the closing scene of the drama.

Briefly summarized, the following are the principal points of a biography which might be extended to volumes with profit, instruction and amusement. Frederick Marriott and a twin brother (Colonel Edwin Marriott, late of the 57th Bengal Native Infantry), were born in the year 1805, at Enfield, now a suburb of London, their father being a lawyer of renown, who assisted at the trial of Warren Hastings. After completing a very thorough education in England, Frederick Marriott went out to Madras, and having entered the well-known house of Joseph Barrow & Co., was engaged for several years in the Ceylon pearl and cloth trade. After

visiting and residing in various parts of the East Indies, he returned to England. His early associations had been of a nature calculated to impart a literary taste, as at the house of his father he had been constantly intimate with many of the leading literary men and wits of the day. Accordingly he now gave way to his natural inclination, and became prominently connected with a number of literary enterprises, chief among which were the *London Weekly Chronicle* and the *Illustrated London News*. It is not generally known that Mr. Marriott was the projector and founder of the last-named paper, the pioneer and the most famous of all illustrated periodicals; yet such is the fact, and would space permit, we could give many curious and highly interesting particulars about the matter. Without dwelling any longer upon this period of Mr. Marriott's life we will now follow him to California, where he arrived in the *Oregon* in June, 1849. Following the example of everyone else, he first turned his attention to gold-seeking, and worked as an "honest miner" at Yuba, with considerable success. This pursuit did not satisfy him long, however, and here turned to Sacramento, and from thence to San Francisco, where he commenced business as a real-estate agent and notary public.

At that time all the world was anxious to hear news from California, but the difficulty of communication was so great and leisure of Californian correspondents so small that very little could be told in ordinary letters. Mr. Marriott saw here a chance of benefiting himself and others at the same time, and in 1856 he planned and published the *News Letter*. "Large oaks from little acorns grow." The *News Letter* consisted originally of two pages of reading matter and two blank pages to be written on by those who wished to send the news of the day and information of their private affairs at the same time and in a convenient form. The idea took well, and the paper was soon appointed the Government organ for Vancouver. Its bright, pithy utterances; its concise yet finished style; its fearless, outspoken and vigorous way of dealing with all public questions, soon made it a general favorite, and such, it is needless to add, it has remained till the present day. But though the contents of the *News Letter* are of the same sterling quality as of old, in outward shape it has materially changed. Instead of two pages of printed matter it now furnishes its readers with twenty, inside a tinted cover, besides detached illustrations. Under the wise guidance of its proprietor the *News Letter* has justly achieved a world-wide celebrity and a unique place in newspaperdom. Its course has always been to support capital, to denounce fraud, to show neither fear nor favor, and, above all, to defend the interests and good name of its loyal owner's native land. The many public services it has rendered are too well known to need recapitulation. In wit and satire it stands preëminent, while the strong sense and vigorous writing displayed in its editorials command the respect and attention of its innumerable readers. Probably no paper in America exercises more influence at home or is more sought for at home than the *News Letter*. Mr. Marriott may well feel proud of this creation of his industry and talent; but nevertheless, he does not seem inclined to rest upon his laurels. On the contrary, he is as tireless as ever in his labors, and in spite of the weight old Time has laid upon his shoulders, he continues to perform the work of half a dozen editors as well as he did twenty years ago. It should be mentioned, however, that his task is much lightened by the efficient services rendered him by his son, Mr. Frederick Marriott, Jr., who seems to inherit all his father's industry and ability. Upon him will doubtless devolve the sole management of the *News Letter* some day, and it could be entrusted to no more competent hands; but let us join with him in the hope that the time is yet far distant when in the course of nature the son must succeed the sire.

GEORGE D. ROBERTS.

As the visitor meanders along Pine and Montgomery streets, seeing the stock sights, he will not fail to notice a small-sized individual, with a big head, a quick eye, and a pleasant smile. He moves along briskly, and many men stop him, and you hear the beginning of the inquiry, "Well, George, how's—" and you pass on, unless inquisitive enough to stand by and hear what is going on. This little man, with the big head, the quick eye, and the pleasant smile, is George D. Roberts, the well-known operator, erst of Grass Valley, where he schooled himself in mining and the arts thereof. "George," as his friends call him, is a pleasant gentleman, but occasionally he gets riled, and when riled he isn't pleasant to tackle, as his brothers John and Joe—who know him pretty well—will tell you. Mr. Roberts is a mining operator in the large sense of the word. He believes in big things. He believes that it is possible there may be a bonanza even under the bay of San Francisco, and, once enthused on the subject, would go after it with the same patience, enthusiasm, and confidence that he has shown in following a dozen chimeras. He has been successful—eminently successful. He has failed, and been eminently a failure. Strike the balance—charge profit and loss—and George comes out away ahead on his mining ventures. When a man is called "George," or "Jim," or "Joe," it argues social familiarity and friendship. Those who call Mr. Roberts "George" are his friends, although perhaps a few outsiders follow the fashion. George Roberts might well be taken by more pretentious and presuming stock operators as an example. Whenever he says, "Buy this stock on my say-so, and I'll see you don't lose anything," it is safe; for George never went back on his word in his life; and there are but few men in the market who have made so much money for others as Mr. Roberts—and this

without making any for himself. Grass Valley was too small a field for the operations of such a man as Roberts. He remained there until he concluded that gold quartz was nothing to silver ore, and the Comstock found him an early, as since he has been a consistent, enthused friend of the lode—believing at times even in impossibilities. Then came the reaction, and he turned his attention to pastures new—the reclamation of the tule, swamp, and overflowed lands of the State; and for several years he devoted himself to this development of the State's resources, with a determination and energy that finally resulted in the demonstration that these lands are the most fertile, the most productive in the State. Mr. Roberts is now largely interested, being associated with Gen. Thomas H. Williams, in the reclamation of large tracts in the basins of the Sacramento and San Joaquin Valleys. But while Mr. Roberts, in his office, was calculating how many bushels of wheat this or that reclaimed tract would produce to the acre, and what the chances of overflow were, had been, or would be, on the levee question, he kept a small portion of his left eye on the Comstock; and, as we go to press, he has been almost a constant resident of the Comstock for a year—coming down only occasionally to see somebody to whom he can't write. He was the moving spirit in the big Lady Bryan deal of years ago; he was the power that raised Julia from nothing to big figures. We hope he has been successful in his ventures. He certainly deserves it. We don't know how Mr. Roberts stands as to age. If asked, he would say, "Guess!" and laugh your guess away with his usual pleasant way. He is good for many years to come. Not very handsome, he has a genial nature—a big heart, too big for his own success; and is happy as the father of a family—wife, and a sweet, happy, sunshiny little girl, the joy of his heart. When at home, he resides in Oakland. When in Virginia, he either luxuriates at the select restaurants or hibernates with the miner—taking pot-luck as it comes—serene, confident, self-possessed. No man could wrong George D. Roberts with impunity; and George D. Roberts would never wrong any man.

THOMAS COLE.

Who does not know Tom Cole, the President of Miss Julia? Mr. Cole has been in the mining arena many years—jovial to a fault, honest as the sun, true as daylight to his friends, of which we can say are legion. We wish that there were more such Presidents as Thomas Cole. Mr. Cole has not, like some, made money out of his friends. He has given the plain, unvarnished statements as they appeared always—no embellishments, no subterfuge used to puff his mine, but always gives, as he sees or hears, for himself. Some might say this is not good policy; it may not be, but he has the satisfaction of knowing, that when he tells a man what he knows that he can be depended upon. Mr. Cole is also the President of the Endowment and Ward Consolidated mines, to which he gives his personal supervision, and whoever is on California street each and every morning, at 9 o'clock, can safely say that the honest, open face of Tom Cole will be met with going up to sign his autograph as Thos. Cole, President of Julia.

LESTER L. ROBINSON.

Prominent in the history of San Francisco is Lester L. Robinson, the present owner of the well-known and much contested Rancho de Los Medanos, on the San Joaquin river, whereon are three towns and we don't know how many acres of grain and hay, and other truck. Mr. Robinson is by profession a railroad engineer, and in his time has built many railroads, and surveyed many more. Tennessee and Kentucky know him well as a railroad engineer: so does Canada and New York and the Grand Trunk Railroad. Coming to California when railroads were unknown; when the stage, mud wagon, prairie schooner, and pack train had to supply the transportation of the argonauts and their descendants, Mr. Robinson built the first railroad ever constructed in California, from Sacramento to Folsom, and his first locomotive, still bearing his name, can yet be seen puffing in and about the Sacramento Valley station as big as life. The road earned a great deal of money, as its Folsom terminus was necessarily the station whence the heavily laden stages took their freight of passengers, and whence all transportation was shipped to the then already excited Comstocks. Presently, however Mr. Robinson turned his attention to real estate and mining, and became identified with the once important house of Pioche, Bayerque & Co., of which for years he was the special manager. Millions were expended at his suggestions, and millions came back as the fruits of his shrewd judgment. With the death of Mr. Pioche the active administration of his connection with the house ceased, and Mr. Robinson entered upon a career of industry and enterprise for his individual concern. He became largely identified with the North Bloomfield and other gravel and hydraulic mining interests of Nevada County, with Sam. Butterworth, Barron, of Barron & Co., Thomas Bell, W. C. Ralston, F. L. A. Pioche and others. Of all the original of North Bloomfield, now that it is a success, only Robinson and Bell remain: Pioche, Bayerque, Ralston, Barron, Butterworth, Brenham have all gathered themselves to their last resting places. Mr. Robinson is identified as President with the New Coso, Leeds, Albion and other mining companies that are on the market; with the Alacran and other mines in Mexico, which are pro-

ducing largely. Mr. Robinson is noted specially for his administrative and executive ability. He follows up the slightest detail or incident; he can figure up the cost of extracting and reducing a ton of ore to a nicety. Socially Mr. Robinson is affable and popular. He has not (as yet) succumbed to female wiles and blandishments; is a well preserved, healthful gentleman of some—well say fifty-five—summers, and bids fair to outlive even the scribe who so sets down his record.

WILLIAM H. WATSON.

The subject of this sketch, William H. Watson, Esq., is Secretary of the Alta, Lady Washington, Succor, Benton and Boyle mining companies. To speak of "Uncle William," as he is familiarly called by his friends, who are legion, not only in San Francisco, but also in Esmeralda County and Virginia City, we can only say he is a man who is universally respected. As a mining secretary, it is needless to speak of. Being connected with the Alta mine since its first organization, and being located for the past ten years in one office as secretary, we can say for Uncle Billy that, in after years, when his race as a mining secretary is run, it will be hard to fill the place now occupied by the genial, obliging and pleasant Uncle Billy Watson.

HENRY JANIN.

Henry Janin is well known all over the Pacific Coast as a mining engineer of repute, and a mining operator who has been reasonably successful in his ventures. The Janin family is quite numerous—there being four brothers, all mining engineers—Louis and Alexis being specially known. All are graduates of the German schools, and each enjoys the confidence of those who most deal in mines. As a mining engineer, Henry Janin has made large fees in reporting on various properties. Cool as a cucumber, with a temper that could not be ruffled by almost any breeze; self-reliant, determined, and confident, it only requires a little more energy to develop an infallible judgment. His favorable report on the well-remembered "diamond job," put up by those princes of scoundrels, Arnold and Slack, was the result of his too confident nature. Instead of digging himself for the precious stones, he allowed the frauds to do the digging, and it was a success. This failure was mortifying to Mr. Janin, and since then he has been less inclined to follow the business of experting. When he goes anywhere, it is always with the understanding that the mine must be a d—d good one on merit; and the regular fee for examination must be a large one, or the contingent fee sufficient to make him a handsome return. Of recent mines approved by Mr. Janin, and placed at handsome figures, were the Home Stake and Golden Terra mines of the Black Hills. As an operator, Mr. Janin is very conservative. He always wants to get in at bed-rock; and when a good profit stares him in the face, he cannot resist the temptation. He is not a stayer, but, having realized on one, is ready for another venture. As a result of his operations, he can draw his check to a comfortable degree. He accommodates himself gracefully to a given situation; lives well, on the best of the land; drinks only the best of wines, and smokes only the best of cigars. Aristocratic in his tastes, gentlemanly in demeanor; and careless of the opinions of those he does not esteem, Mr. Janin enjoys the confidence of those who appreciate merit and worth. The ranks of mining engineers are graced by such gentlemen as A. J. Bowie, William Ashburner, Louis Janin, E. G. DeCrano, Thomas Price, W. S. Keyes, Clarence King—last but not least is Henry Janin. Mr. Janin bears his thirty-eight years with becoming youth. He is a native of *La Belle Louisianne*, and proud of the land of his birth.

AMOS C. HIESTER.

Mr. Hiester is one of the proprietors of the *Daily Stock Report*, and is also President of the San Francisco Board of Education, two positions which bring him prominently before the public. Mr. Hiester is a printer by training, and for a number of years worked at the case, but his energy and ability, coupled with a natural genius for the business of publishing, soon enabled him to branch out in a more extended field. Mr. Hiester has for twenty-five years been engaged in publishing newspapers. He has established several journals, but for the past five years has devoted his time and energies to the *Daily and Weekly Stock Report*, out of which has come, with the intelligent aid of his genial partner, Mr. Bunker, a most valuable and prosperous business. Mr. Hiester was born in Ohio, and is descended from the somewhat famous family of that name in the eastern part of Pennsylvania. He came to California many years ago, married here, and has reared a large family of children. He has for a number of years taken a lively interest in educational matters, and in 1877, the Democrats nominated him for the important position of School Director. He was elected by the largest majority of any man on the ticket, and in recognition of this vote of confidence, his fellow-directors unanimously elected him President of the Board, a position which he has filled with marked ability and conscientious regard for the public welfare. This year Mr. Hiester was nominated by the

Non-Partisans as a member of the Constitutional Convention, and though the whole ticket was defeated, he got the highest vote of any man on it save one. These are all indications of the esteem in which Mr. Hiester is held by his fellow citizens, and they also give rise to the belief that he will yet receive higher proof of public regard, in his election in the near future to some more important and responsible position. Mr. Hiester is about 43 years old, but doesn't look over 35. He has a splendid physique, and is possessed of great personal courage and strength. He has had a fine business training, and his success in his important public office is due in no small degree to his careful and methodical habits.

THE STOCK PERSONNEL OF THE "CHRONICLE" AND "POST."

To our list of personal sketches, we would not forget to add at least two of the representatives of the Press, Charles G. Noyes, of the *San Francisco Daily Chronicle*, and Edward S. Spring, of the *Daily Evening Post*.

These two gentlemen are the editors of the stock reviews, which daily appear in the above-named journals, with which they are connected. Probably the pens of no two men have a more potent influence than do theirs. The circumference of their power may not be as broad as that of some other writers, but their potentiality is vastly more strong and intense, especially with that speculative class whose hopes so largely center at our Stock Exchanges, and which, numerically, reaches into the tens of thousands scattered not only over our own continent, but even over some portions of Europe. No reports, whether of battles, of riots, of epidemics, or catastrophes; whether of international congresses, mass meetings of workmen, or of religious or social conferences, are looked for with half the anxiety, and read with half the interest by the particular class for whom they write, as are the reports of these editors, which form so unique a feature of modern San Francisco journalism. Upon their dictas and suggestions daily hang directly and indirectly not only the material fortunes of half a million of human beings, but the ambition, the health, the morality and happiness of this vast throng of speculators. Their pens, like the wands of rival necromancers, reach down alternately into the hearts of thousands, to inspire with hope or to depress with fear. They are to a great extent the sovereign masters of an immensity of passion, which rises and falls in violent paroxysms with the advances and declines of the mining Stock Market.

Our first subject, C. G. Noyes, is a native of Rochester, N. Y., and has the good fortune to be the nephew of the late General Sedgwick, of the U. S. Army. His ancestors are of Puritan stock—an ideal blood with him—and figure conspicuously in the early history of Connecticut. Self-reliant and ambitious, he left the paternal hearth-stone at seventeen, and commenced life as a surveyor in the far West. Afterwards, he engaged as a farmer; but the California gold excitement turned his face westward still, and in 1853 we next find him swinging the pick in the rich gulches of Old Tuolumne. Graduating as a first-class miner, he next became a manufacturer of lumber, which, after nine years of industry, gave him a bank account of \$60,000. On this snug sum, he ventured, in 1863, upon Montgomery Street, of this city, as a money and stock-broker in connection with A. W. Whitney, a firm which rapidly rose to first-class importance. A subsequent financial reverse, however, sent him, in 1872, into journalism, that most fickle of all callings. He became a part owner of the *Republican*, which, under his lead, engaged in the great fight against the St. Louis and Atlantic railway project, engineered by Pickering, Fitch, Sneath & Co. Rumor claimed that C. P. Huntington, of the Central Pacific, was the chief backer of the *Republican*. Huntington, it was maliciously asserted, found the money, and C. G. Noyes the "brains and the fight." The truth of the first assertion is in all probability a sealed problem. The last is patent to all who are personally acquainted with our subject. The daring and the relentless "push" of the old Sedgwick spirit is manifest in the antagonisms of Mr. Noyes, whether as the manager of a newspaper or as a Stock editor. Probably, as a Stock critic, he has no living equal as it regards boldness of declaration, bitterness of criticism, and power of description. The Stock column of the *Chronicle*, under his inspiration, has been a lance of fire that has burned as well as impaled the conscientiousless manipulator. None but those without nerves or with a paralyzed manhood have been able to stand erect before his fearless and desolating assaults. To measure correctly the efforts of the *San Francisco Chronicle*, with C. G. Noyes as its Stock editor, to protect the public from the plundering schemes of "wild cat" managers, is impossible. This is a work that must be left to a higher than a human judge.

The second and last subject of our notice, Edward S. Spring, is another of those geniuses so rarely found in the special line under consideration. Entirely the opposite of his compeer, he is nevertheless a power in the mining-stock world. His pen is not only graphic, but facile and "liquid." It creates with an ease that seems without parallel. Fecundity is its fault, if it has any. Though bold and fearless, it is yet peaceful; ever ready, however, to make war when a warlike policy seems best. Having the reputation of being *en rapport* with the great bonanza firm, Mr. Spring is looked upon as the "Court" reporter of stocks; a fact which gives his forecastings of future policy and declarations of present movement the semblance of authority.

C. G. Noyes is the Ben Butler of the stock field, with his hat full of bricks and his quiver full of arrows. E. S. Spring is the John Sherman, with his heart full of syndicates and his vision

full of gold. The first is revolution incarnated; the last is conservatism embodied. The first is Kearneyism intensified; the last is capital monopolized. The first believes his mission is to reform, and to defend the people; the last conceives it his duty to check plebian innovations and to "uphold the throne."

Edward S. Spring is a native of the old "Bay State," born in 1854 in the town of Brighton, almost beneath the shadow of Fanueil Hall. Of his Puritan ancestry, like his contemporary, he assumes the pride of the descendants of Pocahontas. It is royal blood, in his estimation of worth, sent to build and conserve the Republic. Before his appearance among us, he was connected with the Boston Press. This moral educator and financial exponent of the "Hub" is with him the real revelation of the perfect. 'Tis the ideal towards which he believes all journalistic genius should gravitate.

In 1875 he took chief charge of the stock column of the *Evening Post*. Since then, therefore, he may be recognized as the party responsible in this department for all defects, and the creditor of all perfections.

Both our subjects are yet far eastward of the meridian lifeline. The former, however, stands several degrees up the arc in advance of the latter. Scoring 42, the refracted rays of the coming evening sun, it is true, are just now beginning to fall over the line of the zenith in faint glow upon thinning crown. Otherwise, the touches of Time are nowhere seen in their marks of approaching decay. The latter is still in early ascension, with the dews of the morning upon his forehead. The fragrance of Boston Common and the incense of the Sunday-school of "Old South" still cling to his robes, and give promise that all is not yet lost in this new age of immoral fermentations and of social degeneracy. A moral model and a cranium full of active brains, Edward S. Spring gives promise of a broadening and more marked influence, before his feet shall finally touch the margin of shadows that fall from beyond the boundary of the unseen.

J. W. PEW.

This young man, though not long in the business, fills the position of secretary to a larger number of active, live mining companies, perhaps, than any other person in the city. As some of these stand in the foremost rank, devolving heavy responsibilities and arduous duties upon the secretaryship, the incumbent must necessarily possess qualifications of a corresponding order. If Mr. Pew is not fitted to fill a position of this kind with acceptance, he certainly ought to be, for he has been trained in a school specially calculated to prepare him to discharge its duties well. Born in Gloucester, Mass., where he was educated and inaugurated into business after the New England standard, he came while yet quite young to this coast, and accepting a situation in the office of the Sacramento *Union* held the same for a number of years. This was when that journal was a power in the State, and none but men of character and ability could hold a position of great trust upon it. From the time he left the *Union* till 1876, when he came to San Francisco, Mr. Pew acted as paying and receiving teller in D. O. Mills' bank in Sacramento. Since coming to the city he has given his attention wholly to the business in which he is now engaged, and in which his talents and worth are likely to meet with entire appreciation, the several companies whom he is serving reposing unlimited confidence in both his capacity and integrity.

THE DAILY STOCK REPORT.

Nearly all the daily newspapers of San Francisco pay more or less attention to the publication of the information concerning mines, and the reports of mining stock transactions. But the paper that makes a specialty of these subjects, and by reason of that is recognized as the leading journalistic authority on such matters, is the San Francisco *Daily Stock Report*. The *Stock Report* is published every week day in the year at half past twelve o'clock, or immediately after the adjournment of the morning Boards. It is a large quarto sheet, about the size of the *Evening Bulletin*, and is filled with complete official lists of Stock sales at all the Boards, the latest official intelligence from the mines, giving the progress of their development, bullion yield, future prospects, etc., and the freshest and most entertaining gossip in Stock circles. It also has a daily review of the market that has come to be a feature, because of its impartial and conservative tone. In addition to these subjects the *Report* makes a feature of spicy and brief editorials on general subjects, telegrams, city news, personals, and, in fact, is replete with everything of interest to the general reader.

The *Stock Report* was established in 1863, and is the oldest daily paper of its class in America, if not in the world. Weekly stock and financial papers are plentiful enough, but a daily it was never thought could be made profitable until the *Stock Report* tried it, and won great success. It was small at first, but it grew rapidly, and was a financial success from the very start. It gradually extended its scope until now it has become the organ of the miner, the banker, the investor and the speculator. Its present proprietors are the Stock Report Publishing Company, of which Mr. William M. Bunker and Mr. A. C. Hiester are the managers and the chief stockholders. Mr. Bunker is a well known and experienced journalist of San Francisco,

having served a long while, and received a splendid training in his profession on the staff of the *Evening Bulletin*. He is the editorial manager of the *Stock Report*, while upon his associate, Mr. Hiester, devolves the business control of the establishment. Mr. Hiester is one of the oldest journalists in San Francisco. Since 1856, when he arrived here, he has been connected in some way with the publication of newspapers, and has been a success wherever he set his shoulder to the wheel. His long connection with the *Stock Report*, having been with it almost since the paper was founded, has in no small degree contributed to its success. In 1877 Mr. Hiester was elected a member of the San Francisco Board of Education, by a larger majority than that received by any other candidate, and subsequently when the Board organized was unanimously elected its President, a position which he still fills with consummate tact and ability.

The mammoth printing house of the Stock Report Publishing Company is located at No. 16 Liederdorff street, near Pine, in the very center of the financial and speculative section. It possesses type material, machinery—all of the value of \$150,000, and connected with it is a magnificent job printing office, at which most of the printing for mining companies is executed. The *Weekly Stock Report* is issued every Friday. It mostly circulates at the East and in Europe, but also has quite a subscription list in Mexico, China, the Sandwich Islands and the Australian Colonies. It has in addition quite a large list of readers in the interior. It is a handsome eight page paper, and is the best weekly exponents of the mining and stock interests now published on the coast.

The preceding paragraphs make bare reference to the features of the *Daily Stock Report*, and to dismiss the subject without an extended explanation would imply a lack of knowledge regarding the history of Pacific Coast mining and financial operations. This history does not exist outside the columns of the *Stock Report*. For years it was the only newspaper making a specialty of mining and financial news, and, to-day, it occupies the proud position of being the only newspaper in the city that can show a record of the stock transactions since the organization of the San Francisco Stock and Exchange Board. Having had a wide experience in journalism, we are in a position to state that rarely has a newspaper legitimately advanced at such a rate of speed as has characterized the progress of the *Stock Report*. Its projectors had no adequate conception of its ultimate power when they first launched it upon the journalistic sea. They merely designed giving the brokers a weekly circular, containing the current quotations of stocks in the San Francisco Stock and Exchange Board, the original institution of the kind in the city. For a few months the *Stock Report* appeared in circular form, and was about the size of a sheet of letter paper. As the mining interest developed, and the practice of dealing in stocks increased in popularity, the *Stock Report* gained importance, and soon achieved the dignity of a daily newspaper. The high, social and professional standing of its proprietors, and their strict application to business, combined to make the *Report* successful beyond other dailies. When the bears made the great raid on the Comstock, about two years ago, the *Daily Stock Report* was the only newspaper in San Francisco that had the courage to stand by the people and the mines, the enterprise to secure reliable news from the Comstock, and the ability to discuss that news with accuracy and intelligence. Its owners were not and are not mining men, in the usual acceptation of the term, and their articles upon stock and mining matters have, therefore, wielded immense influence. When the *Stock Report* denounced the men who were striving to wreck the stock market and ruin the community, at the time of the great break in Consolidated Virginia, it earned the gratitude of thousands of stockholders who, to-day, hold it in grateful recollection. Its integrity and boldness are very generally accredited with having warded off one of the heaviest blows that was ever aimed at the mining interest of the Pacific slope. The appreciation of the *Stock Report* by the public is perhaps best evidenced by the advertising pressure upon its columns and the unprecedented increase of its circulation. On several occasions, during the last two years, the *Stock Report* has been enlarged to meet the pressing business demands upon its columns, until, at present writing, it is the third daily newspaper in the State in point of size. Appropos of the reliability and enterprise of the *Daily Stock Report*, we cannot furnish a more fitting illustration than is found in the accompanying extract from its columns. The paragraph which we quote is from the *Daily Stock Report* of July 9th:

"We have entered upon a new era of stock speculation. Its outcome cannot be pictured; for the reason that the circumstances surrounding its beginning are partially shrouded in mystery. But the fact that we have entered upon a new era, a favorable era, if you please, is in itself a matter for congratulation. The fear and despondency which were prominent factors in the stock market for three years, have almost disappeared. There has been a cleaning up and a cleaning out. The market has been attended with a series of disasters, and in their onward course the waves of destruction have swallowed many dealers. But the past, practically speaking, is dead. Its hopes and fears, its troubles and tribulations, have nothing to do with the present. These are cold facts, and, though we say it with keen sympathy for the unfortunate, the sooner dealers make up their minds to the new order of things—the new dispensation, so to speak—the better will it be for them. Fortunes will be lost and won, as of old, but the general market bids fair to be more favorable to dealers than it has been before for three years. The prospects of the mines and the actions of the bearish operators fully warrant the belief that the season of inactivity is over, and that, from this time forward, we are to have an excited market,

with the chances in favor of a big rise. As stated in yesterday's *Report*, it is the opinion of some of the shrewdest and most conservative operators, that an ore body, extending from *Ophir on the south, to and into Sierra Nevada on the north, will be speedily developed*. The existence of an ore body in the Ophir is already determined beyond the peradventure of a doubt, and, according to our information, an ore body has been struck in Sierra Nevada. It is surmised that the Ophir and Sierra Nevada developments are of one body of ore. But this fact remains to be determined."

Thus the *Stock Report* foreshadowed, in its leading stock article, the great excitement in stocks which now thrills the community. It is somewhat remarkable that a newspaper, holding such a prominent position in mining and financial circles, should combine such accuracy and conservatism. But the fact is, Messrs. Bunker and Hiester cannot afford to mislead the public, or allow any known shams in the market to go unexposed. These gentlemen have first-class reputations to sustain. The special excellence of the *Stock Report* in the matter of its reports of sales, is due to the fact that Mr. Bunker has entire charge of the official reports of the San Francisco Stock and Exchange Board, and has in his employ a corps of experienced clerks. The reports of the Board have been issued under his immediate direction for three years.

O. H. BOGART.

The subject of the following brief remarks, was born in New York city, in 1830. After completing his collegiate life, having graduated at the University of New York, in 1849, he entered a large commercial house, first as bookkeeper, having been afterwards made cashier, and there remained until 1852, when he came to California. Since his arrival in San Francisco, where he first engaged in commercial pursuits, he has followed a number of vocations, having experienced the vicissitudes common to most early adventurers on this coast. Indeed, it may be said that Mr. Bogart would seem, for a young man, to have courted fortune through the channels of a great variety of occupations in his day. Thus, from at first dealing in drugs and other less deadly stuffs, he next embarked in the business of selling firearms, fishing tackle, and things that sportsmen most affect; having, during the interim, made a short visit to his old home in New York. On returning to California, he essayed the rôle of stock-raiser, having purchased a part of the National Ranch, Monterey County, for this purpose. Finding that his talent did not lie in this direction, there being little profit in bovine culture, he abandoned pastoral pursuits, and, coming back to San Francisco, opened here a branch of the well known house of R. H. McDonald & Co., wholesale druggists, which business he conducted successfully until 1871, when he opened a commission store on Davis Street. This he occupied for a year, when he was elected cashier of the Pacific Bank. This position, after an acceptable service of three years, he resigned to enter upon the calling of mining secretary and operator in mines. His present place of business is at 106 Leidesdorff Street, where he has an agency for negotiating the purchase and sale of mining properties, shares, etc.

As a capable, trustworthy business man, he stands in the foremost rank, enjoying the entire confidence of all who know him.

CORNELIUS O'CONNOR.

Cornelius O'Connor, capitalist, is not and never has been a stock speculator, in the ordinary acceptance of the term, but we are free to say that few men are as well and favorably known in mining circles. Many of the most successful stock operators are so closely identified with Mr. O'Connor in the handling of extensive real-estate enterprises that this gentleman has come to be looked upon as a part and parcel of the mining community. Mr. O'Connor was born in Ireland, but, at the tender age of eight years, came to America with his parents, who settled in Quincy, Mass. He was reared and educated at Quincy, and, if we mistake not, acquired his trade there, that of a builder. In the Winter of 1852-3, Mr. O'Connor left his New England home for California, and ever since the Spring of 1853 his home has been in San Francisco. In the early portion of his career in this city, he was agent for Captain J. L. Folsom, one of the heaviest real estate owners on this coast, and, at a latter date, he occupied a still more responsible position as agent for the great law firm of Halleck, Peachy & Billings. During all these years, Mr. O'Connor was not only managing the real-estate business of the gentlemen we have named, but, at various intervals, he superintended the construction of business blocks and warehouses, and carried out important real-estate transactions on his own account. His intimate social relations with the members of the great bonanza mining firm, covering a period of 20 years, and his high reputation for integrity and sagacity, led those gentlemen to solicit his assistance in the management of their immense real-estate interests. Indeed, it is generally believed, that the real-estate investments of the firm, which involves the use of millions of dollars, and have been attended with unvarying success, were largely made under the direction of Mr. O'Connor. He has had entire charge of the city real-estate interests of the firm for over ten years, and it is probable that this great trust will repose in him for many years to come. Among the notable

buildings erected under the direction of Mr. O'Connor, the Nevada Block, on the northeast corner of Montgomery and Pine Streets, and the stately edifice of the San Francisco Stock and Exchange Board, on the south side of Pine Street, take first rank. The Block cost \$500,000, and the Exchange building about \$700,000. These buildings do credit to Mr. O'Connor's building skill. They furnish standing references as to his ability.

Nature has given Mr. O'Connor a good physique, a good strong head and an eminently amiable disposition. He is our jolliest millionaire, and no one can begrudge him his fortune, his pleasant home and robust health. Mr. O'Connor is married, and has an elegant residence in the city.

EDWARD F. HALL, Jr.

Edward F. Hall, Jr., one of the leading stockbrokers, whose name is a synonym for integrity and strength in financial circles, is a native of Boston, Mass., and, we may almost unhesitatingly add, he counts no greater distinction of birth than that of being a Boston boy. He enjoyed a liberal scholastic training and was equally fortunate in his business education. His first knowledge of mercantile operations was obtained in the great house of H. A. Pierce & Co., Boston. The keenness and sagacity of Mr. Hall must have been developed at an early age, for only a short time elapsed before the firm offered him the position of supercargo on a ship bound for the agency of the house on the Amoor River. Mr. Hall accepted the appointment and was induced to remain at the Amoor River agency. At the expiration of three years he left the agency, with an excellent record, and it was his intention to resume business in Boston. While *en route* for home *via* San Francisco, early in 1860, Mr. Hall had an inviting opportunity to enter the wholesale shipping and commission business here, and hence it was that he made this city instead of Boston, the scene of his later operation.

He conducted his mercantile business until 1867, when he entered the San Francisco Stock and Exchange Board and laid the foundation of the house of Ed. F. Hall & Co. His success in the stock business has been remarkable in more than one respect. First and foremost he has never failed. His house has weathered storms that have shaken the financial community for centre to circumference. He can point to the history of the stock market, and, altering the poet's lines, quietly remark :

Men may come, and men may go,
But we go on forever.

About four years ago Mr. James R. Keene, the financier, associated himself with Mr. Hall as the special partner of the firm of Edward F. Hall & Co., and the connection, which has proved mutually advantageous to these gentlemen, has never been severed. The business of the house of Ed. F. Hall & Co. amounts to millions of dollars per month, and is entirely and emphatically under the direction of Mr. Hall, whose bustling enterprise gives tone to the establishment and satisfies the most importunate customers. During business hours Mr. Hall is essentially a business man, but there is no member of the Board who has a keener appreciation of humor, or who possesses a greater amount of geniality. Mr. Hall's appearance fixes his age at about thirty-five. Our sketch of his career would be incomplete, if we failed to refer to his standing outside of business. As a citizen, Mr. Hall is noted for his public spirit, his decision of character, and his cultivated tastes. Mr. Hall is a benedict, and has a luxurious home in San Francisco.

WILLIAM H. BOOTHE.

One of the most elegant men known in mining stock circles on this coast is the young gentleman whose name heads this sketch. Mr. Boothe is the Secretary of the Silver King Mining Company, and the confidential business agent and adviser of Col. James M. Barney, of Yuma. He is also the owner of several silver mines in Arizona, and the head and front of a number of mining enterprises in the same Territory. He has a magnificent suite of offices in the Williams Building, over Wells, Fargo & Co.'s Bank, which are a kind of headquarters for the leading miners and capitalists of Arizona. Mr. Boothe is a Kentuckian by birth, and is a member of one of the bluest-blooded families of that State. When a boy, during the last year of the war, he showed his patriotic spirit by enlisting in the Navy; but, as the war closed in not many months thereafter, he obtained an honorable discharge and turned his back upon the sea forever. Seven years ago, he came to this coast, and soon after became connected with Colonel Barney in the capacity of confidential secretary, and that position he has held ever since. When the Silver King Company was incorporated, he bought a considerable interest along with Colonel Barney, and became its Secretary, and in a certain sense its business manager; and it is to his careful and prudent forethought that the Company is largely indebted for the confidence with which the Silver King is now looked upon in mining circles. Mr. Boothe is not over thirty years old, but he has already acquired a considerable fortune. He is a bright and particular star in social circles, is one of the pillars of Trinity Church and Sunday-school, and is the life of every fashionable gathering in the city. He is a liberal patron of the

fine arts, an ardent student of English literature, and is devoted to the fair sex, with whom he is a universal favorite. Mr. Boothe lives at the Palace, drives a magnificent pair of Kentucky-bred mares, and has an income of from \$2,500 to \$4,000 a month. He is looked upon as a great "catch," but, if rumor be correct, will ere long be withdrawn from the matrimonial market. He is a devoted friend, his noble and disinterested acts of kindness being numberless. His modesty is as conspicuous as his generosity; and if any one wants to find out what his right hand is doing, he must never ask his left. Boothe will be a millionaire some day, and to nobody could wealth ever come who will make a better or more noble use of it. He is a prince among men, and an honor to the State which reared him.

WILLIAM M. BUNKER.

Mr. Bunker is chief proprietor and managing editor of the San Francisco Daily and Weekly *Stock Report*—the oldest and best known authority on stock and mining matters in California. Though a young man, Mr. Bunker has shown himself a most capable manager of a large business enterprise; and the conservative tone of his writings has built up for the *Stock Report* a reputation for impartiality and reliability second to no journal in the country. Mr. Bunker was trained in journalism in a thorough school—the San Francisco *Evening Bulletin*—and under the watchful care of such veteran editors as Messrs. Fitch and Pickering, he acquired such a knowledge of his profession as few men get at his age. Mr. Bunker went on the *Bulletin* as a boy in the composing-room; but he had too much capacity to remain in that position long. A series of letters on California politics appeared in an Eastern paper in 1864, and attracted so much attention, by reason of the superior knowledge of affairs shown in them, their delicate irony, and their clear estimate of the men who were at the head of State politics at the time, that they were copied into and commented upon by nearly every journal in the State—the *Bulletin* clipping from them more eagerly and commenting upon them more appreciatively than any other. A good deal of curiosity was shown about this time to learn who was the author of them, and by an accident young Bunker was discovered to be the Junius everybody was in search of. After that there was no more setting of type for Mr. Bunker. He was at once invited to a desk in the editorial room; and, at the end of an uninterrupted connection with that department of over ten years, he found himself city editor of the paper, and in the enjoyment of an authority second only to that of the proprietors. During that time, he had filled many important trusts, not the least of which was his somewhat noted mission as the *Bulletin's* correspondent throughout the Modoc campaign of 1873, in the famous lava beds, and the region about Lake Klamath. Recognizing that he had got to the top round of the ladder in a subordinate place, Mr. Bunker purchased a controlling interest in the *Stock Report* publishing establishment, and has now, during the few years of his connection with it, brought it to be one of the handsomest journalistic properties in California. Mr. Bunker, as we have said, is quite young—he cannot be much over thirty—but he has evinced qualities in his professional career that belong to riper years. He is a genial, pleasant writer, an affable and courtly gentleman, and no greater favorite is to be found in all the newspaper profession than he is among mining men and business men generally. Mr. Bunker is a native of Nantucket, Mass.; and, by the exercise of the same prudent thrift and wise economy that are inborn in the people of that soil, he has, at an early age in life, acquired a handsome competency. Mr. Bunker is married, and is a devoted adherent of the home circle.

GEORGE W. KIDD.

A small-sized man, with a clean-shaved face, neatly dressed, fine diamond studs glittering in his shirt-bosom, is Capt. George W. Kidd, a well-known operator in the Stock Boards, owner of mining interests, bank director and manager. Capt. Kidd has had rather a venturesome life. He didn't get much of an education from the old folks, and about the earliest thing he can recollect was being cabin-boy on a Mississippi steamboat at \$8 per month and found. There he got his first ideas about steamboating, which practically he illustrated years after on the Sacramento River, by building opposition boats to the California Steam Navigation Company—the "Washoe" and "Nevada," both of which met with fatal accidents. The "Washoe" blew up, the "Nevada" was run into and sunk by one of the monopoly boats. But Kidd was plucky, and the loss of his pet steamboats did not set him back a cent; for, being successful in some of his mining ventures, he soon came to the front as the captain of a new craft—the Bank of Stockton—which has since remained under his care and control. Every Friday afternoon or Saturday morning, Capt. Kidd may be seen going up to Stockton, where he takes a bird's-eye view of the bank situation, and returns bright and early for business on Pine street Monday morning. About once a month, he extends his pilgrimage up to the mines of Nevada County, where he gathers in the bags of amalgam which have accumulated during the month. Capt. Kidd was at one time very largely interested in the counties of Nevada and Placer—owning ditches and mines, number without number. Some years since, he sold all his big ditch interests for a round sum. The Captain still retains his interest in

some of the producing mines, and has made successful stock ventures in other sections. He sinks considerable money in first-class properties like the Pacific Rolling Mills, and owns largely in productive quicksilver properties. When the Bank of California suspended, Kidd was one of its firmest friends, and in the hour of trouble, when friends were friends, he put down his little but substantial fist for a round subscription to the syndicate for its rehabilitation. Capt. Kidd is shrewd and careful in all his operations, and can reckon up his fortune by many hundred thousands—even up to millions. A bolder speculator, with his caution, would have possessed to-day many more shekels. But he has enough for all purposes, and it is very doubtful if he will ever have less. He lives in excellent style, having purchased the elegant mansion on the corner of Sutter and Mason streets, which Henry Barroilhet, the banker, built for himself. He has no sons or daughters to worry him with their extravagant ideas; only one charming, happy niece graces his household, besides Mrs. Kidd, who is hospitable and entertaining. Capt. Kidd is a young man yet, full of fame, full of life, and ready to build a whole line of steamboats, if necessary.

JAMES J. GREEN.

The subject of this sketch, James J. Green, is a man who is well known, not only in the mining circles, but also in the political arena. He is about 45 years old, of a genial temperament, one who seems to never get out of sorts. We can safely say of Jim Green, as he is familiarly called, that he is one of nature's noblemen. Mr. Green was first elected as Controller of this State in 1871. To say his regime was a success is to say too little. Everybody who had business relations with him was always welcome. And in his private life, he was the acme of geniality and pleasantness. After his term had expired, Mr. Green came to San Francisco; he became interested in several mines, one of which, the Trojan, at a meeting of the Board of Directors, he was elected its President. He fulfilled the position with fidelity, attending personally to all the details of the office, and never, during his whole term was he absent from the office during business hours, except when afflicted with that dreadful complaint, which he contracted in Sacramento, rheumatism. To those who know him, it is needless to speak to, and to those who do not know him we can only say that to meet J. J. Green is to meet a gentleman in each and every sense of the word.

THOMAS H. LAWLER.

Judge Lawler is the business manager of the *Daily and Weekly Exchange*—journals deservedly popular in stock and mining circles. He entered upon the arduous duties of his position in June, 1877, and has acquitted himself to the perfect satisfaction of the Exchange Publishing Company. Born and reared in the city of New York, early manhood found him amid the babel of Wall street, charmed by the noise and tumult of stock business, and afloat on the ocean of speculation. There he remained, except during several years of military service, until he was thirty-one years of age; when, in 1868, the golden sands and glorious climate of the Pacific Coast tempted him hitherward. Two years later, in 1870, we find him comfortably settled in the city of Vallejo, holding the position of Police Judge, an office which he filled for four years to the satisfaction of the better class of citizens, but to the terror of the hoodlum element. Judge Lawler has a good education, although limited to the courses of instruction of the common schools of New York; and wields a pen with fair ability. The charm of his society, however, consists particularly in his gentlemanly deportment, his jovial disposition, and his genial good-fellowship.

Judge Lawler has just cause to be proud of his ancestry, his grandsires having fought during the war of 1812, and his great grandsires having fought and bled in the Revolution which made this country a free Republic. The same blood which nerved his noble and honored sires to go forth and battle for right and liberty, in the creation of our country and the protection of its people, invoked their son to fight for the country's preservation. At the first rude blast of war Mr. Lawler entered the army of the Union as a private in the 56th New York Infantry. He retired as a Captain, having earned his commission on many a well-fought field. Peace having spread her wings over our land, the soldiers' occupation was gone, and Captain Lawler accepted a position as Sergeant in the metropolitan police, which office he held until he determined on coming to California. In this position, as in the army, he was respected by all who knew him, as a brave and honorable man and officer.

The remarkable success of the *Exchange* is a tribute to his shrewd and energetic business qualifications. He is one of the first on the street in the morning, and he never misses a point. He is a walking encyclopædia of mines—knows every company, its president, secretary, directors and chief manipulators, together with the extent of its works, the location of its office, and the amount of money in the hands of its treasurer. He knows the date of every annual meeting, and the hour and business of every special one. He scents an assessment levy with an incomprehensible intuition, and goes for the notice and delinquent list with the zeal and persistency of a Spartan veteran. He will smooth the back of a wild-cat with a touch as soft

and gentle as that of a woman; but it must pay its bills to the *Exchange*, no matter what else it may not do, otherwise the Judge shows a pair of claws that would frighten the most vicious wild-cat out of existence. He is possessed of a wonderful vitality, and in his daily round to the fifty principal mining offices, can be likened to nothing short of a human locomotive. Even while taking his noon-day lunch, he will contract with you for an advertisement, and write it up between the claret and the clove.

Judge Lawler is the head of a very pleasant and very happy family, consisting of his wife and six children, four boys and two young ladies, one of whom is married to a very worthy San Francisco lawyer. When the noise and battle of the day is over, the din and commotion of stock-wrangling hushed, and the evening edition of the *Exchange* issued and delivered to the carriers, the Judge quietly locks his desk and slips away, never pausing until he is within the charmed circle of home. Then forgotten are stocks, forgotten mines, assessments, dividends, meetings, margins—and the evening is taken up with music, readings, reviews of school studies, and pleasant social family conversation.

The world would be better if there were more men in it like Judge Lawler. He is cheerful, and that is a good quality; honest, and that is still better; generous and unselfish, priceless virtues in this uncharitable world; a true friend, and that, too, is a virtue beyond price.

Judge Lawler is forty-one years of age, above medium size, of fine physical proportions, straight as an arrow, and just in the prime of life. He walks with a quick, nervous step, speaks directly to the point, and shakes hands with twenty men in every block. Everybody likes him and he seems to like everybody.

C. P. SYKES.

The subject of this brief sketch was born of English and German parents, in the State of New York, September 16, 1824, and is now in the full prime and vigor of life. At the early age of five years, he lost his father. Two years after the death of his father, his mother married Mr. Asa Haven, a widower with a number of children, and the two families united harmoniously as one. One of Mr. Haven's sons became a member of the distinguished law firm of Fillmore, Hall & Haven, of Buffalo, N. Y., the head of which, Millard Fillmore, became President of the United States.

Young Sykes soon became a great favorite with his step-father, and was selected by him, over any of his own children, to take charge of the home-farm and family. On account of the respect and affection of his parents, and the evidence of great confidence and trust reposed in him, he was induced to forego his most cherished desire to finish his education, in order to fit himself for the ministry in connection with the Universalist denomination. The duties thus imposed upon the subject of our sketch so early in life, prevented the achieving of the benefits of a liberal education, and kept him from affairs of public concern until a comparatively late period of his life. However, by his admirable natural powers, energy, sagacity and indomitable perseverance, he forced his way to the front rank as a successful and popular business man.

In 1858 he established the *La Crosse Democrat*, and was soon in the successful tide of prosperity, winning a firm hold upon the confidence and esteem of his fellow-citizens, with a wide reputation through the Northwestern States as a wide-awake and honorable man of business and great executive ability. Being a bold and adventurous business man, having heard of the discoveries of valuable mines of precious metals in Colorado, in the Spring of 1860 he disposed of his interest in the *Democrat* to Mark M. (Brick) Pomeroy, and started for the wilds of Colorado. There he soon became known as a man of great business capacity and enterprise, securing the confidence of all, and becoming one of the leading miners in that region. He soon accumulated an ample fortune, owning large interests in some of the best gold mining property in Colorado. He was the first to perceive the necessity for placing the mining interests of Colorado before Eastern capitalists, going to New York himself, where he organized a number of first-class mining companies. This was in 1863.

At the close of the war, Western securities and business enterprises became much depressed, and with others, Colonel Sykes suffered heavily, losing most of his hard-earned fortune. This did not discourage him, however, but he immediately turned his attention to other business enterprises, in which he regained a portion of his lost fortune. In 1863 he again became interested with Mr. Pomeroy, becoming publisher and business manager of the *New York Democrat*. He also held several important public and private positions, becoming director in an important steamship company.

On account of his fondness and great predilection for mining enterprises, he could not rest quietly in New York, but determined once again to try his fortunes west of the Rocky Mountains. He came to California in 1875, where, learning of the rich, and comparatively unexplored regions of the great Territory of Arizona, he was very soon found there, looking up for himself such properties and locations as offered, in his good judgment, wide fields for his sagacity and enterprise. Soon he decided that the beautiful valley of the Santa Cruz presented to the settler and bold pioneer, the most attractive spot in the entire Territory, for purposes of agriculture, and he at once became possessor of the celebrated Calabasas, and other grants, including therein over 30,000 acres, one-half of which is arable, and without fertilizers will

produce abundant crops of grain, and all kinds of fruits and vegetables. He also secured titles to the several mines of the San Xavier Lode, and commenced at once their development. Drawing to his assistance capital, he has organized the San Xavier Mining and Smelting Company, and commenced work on their mines less than six months ago, with most encouraging results, having already on their dumps, ore of the value of at least \$20,000, at an expense for mining of not more than \$4,000, and the San Xavier Company will, at an early day, erect smelting and cupelling works, for the extraction of the precious metals. This mine, so far as developed, promises to be one of the richest and most important in the Territory.

The value of the lands and mines acquired by Col. Sykes, soon attracted the notice of some of our most prominent and enterprising capitalists—such men as Judge John Currey, Hon. Jno. P. Jones, Eugene L. Sullivan, and Geo. C. Perkins, of the well-known shipping firm of Goodall, Perkins & Co., and they have together organized and incorporated the Calabasas Land and Mining Company, to develop the wealth of their mines and lands, and to build up the town of Calabasas, which is situated in the midst of the best mining claims yet discovered in Southern Arizona, and destined to be the leading point for the trade of that part of the State, as well as Sonora, Mexico. Col. Sykes has been chosen as the manager of the enterprise, and is now most actively engaged in the prosecution of this grand scheme. With such backing, by his indomitable and untiring perseverance, energy, and superior qualifications as a manager, we predict for him the greatest success and realization of his most sanguine expectations; and the Territory of Arizona is most fortunate in having such a man interested in its development and future prosperity.

He has excellent perceptive faculties, and is ever on the *qui vive*, and nothing takes place of an unusual character within the range of his vision without his notice. Being decidedly original, he has his own way of performing whatever he undertakes, avoiding anything like routine, has his own views of things. His religion consists in strict integrity, in doing what he thinks right between man and man, and between God and himself. Being rather indifferent to the good opinion of others, he is brave enough to maintain his convictions, irrespective of what others may say or think. He is slow in deciding questions, taking an abundance of time to fully inform himself with reference to any new scheme or subject, but having a strong will, when once decided, he is steadfast. From early life he has made his way in the world on his own account, thereby strengthening his apprehensions of the useful and practical. He is especially adapted to the line of life which requires those elements of character which are found in the manager, the superintendent or the director. Socially he has genial and pleasant qualities, and is extremely popular with all who know him. Though quiet, almost to graveness, yet the sparkle of his eye when a little excited shows his keen appreciation of wit and humor, and that his mood, though thoughtful, is not morose. The vicissitudes of his early life and his familiarity with the many prases of suffering among the working classes, have opened his nature to broad and earnest sympathy, knowing how to give help at the right time, imparting through the magnetic influence of his words encouragement and strength to the distressed and discouraged. Mr. Sykes is now living with his second wife, an accomplished lady, by whom he has two promising children, and their home is the center of a delightful and happy circle.

THE "DAILY EXCHANGE."

The great importance of a mining journal on the Pacific Slope, is best shown by the influence, prosperity and popularity of the *Daily Exchange*. Three things are essential to the permanent success of any newspaper: ability, integrity, industry. All these in the most eminent degree are displayed in the management of the *Exchange*. To that journal belongs, exclusively, the credit of having been the first to fully explore the field which it now occupies. Prior to the establishment of the *Exchange*, a daily newspaper, perfect in all its departments, but paying paramount attention to the great mining interests of the Pacific Coast, was not even thought of as amongst the possibilities. Of mere advertising sheets, professing to furnish the records of the Stock Boards, and but half fulfilling that promise, there was an abundance. Some of that nondescript class of publications have survived and somewhat improved. The majority, however, have found the grateful obscurity to which their lack of merit entitled them, by passing to the limbo of unsuccessful papers. Even the *Exchange*, at the beginning of its fortunate career, was far from being the able exponent of great interests which it has since become. Those who launched it on the sea of speculation and shaped its course, had not the advantage of imitation. Experience has, however, taught many valuable lessons and furnished suggestions by which those responsible for the conduct of the paper have been quick to profit. Of the *Daily Exchange*, as now published, it would be but poor praise to say that it is not inferior to any paper of its class published in the world. An honest criticism would award it a place far in advance of its competitors, and too firmly fixed in the public estimation to suffer by rivalry.

Few people are aware of the great expense incurred by the maintenance of such a journal. Its publication necessitates the employment of a force of compositors, pressmen and carriers that would suffice for a newspaper much larger, but engaged merely in the discussion of the ordinary events of the hour. The existence of a financial journal, like the *Exchange*, is devoted to recording extraordinary events, by which millions change hands in hours, and colossal

fortunes are gathered up or swept away by the great tides of prosperity and adversity that float the stock market. To a mere newspaper, minutes are of slight importance. To a mining journal moments are golden. It is imperatively necessary that the paper shall be thrown on the street almost as soon as the great doors of the Stock Exchanges swing back to afford egress to the crowd of brokers and operators who have temporarily set a valuation on the mineral wealth of the coast. While the bulls and bears wage their fierce war on the floor of the Board room a deft telegraph operator sits attentive to the proceedings of the competent clerks evolving order from apparent chaos. Fast as the figures accumulate on the official list, they are flashed over the wires to the office of the *Daily Exchange*, and with equal expedition reproduced in the "forms" of that journal as the last record of sales is being translated in type, and while the telegraph still ticks the announcement of the Board's adjournment, the forms are transferred to an elevator, lowered to the ground floor, and placed on the great double cylinder press waiting to receive them. A turn of the crank, a strain of the ponderous machinery, and the next moment damp copies of the *Exchange* are in the hands of the crowd of eager newsboys and agile carriers. Long before the last of the large edition can be worked off, even by the powerful press with its great capacity, thousands of people have learned from the advance numbers the coveted information which could be obtained in no other way so pleasantly, correctly and expeditiously. The second edition of the *Exchange*, for it is necessary daily to issue two, is produced in the same manner as the first, and is the only journal devoted to mining interests that can afford such a second edition. The same scenes of activity are enacted, the same watchful care exercised until the carriers and newsboys have again been entrusted with the distribution.

Though the chief value of the *Exchange* lies in the fact that it publishes as complete a record of the stock sales as the official list contains, it does not rely altogether upon that distinction for its great popularity. Its strength as a complete newspaper rests in the ability of its editorial columns, the fulness of the reports from the mining districts, and the number of official letters which it supplies to its readers. In addition, it gives an interesting summary of local and foreign events of interest, which is read with satisfaction by the numbers who have neither the time nor the inclination to wade through the dreary columns of trash, sarcastically called "news" by the large dailies. The reports of the stock market and the comments on men and things therein contained, evince a knowledge of the true inwardness of affairs, and an ability to express that knowledge, of which no other paper in this our Western world can boast. The author of articles of this class should be neither a mad enthusiast nor a superficial observer. He should be thoughtful, discreet, well versed in the science of stock operating, careful in analyzing reports, keen in the detection of news; above and before all things, honest. That such is the author of the stock reports in the *Daily Exchange*, every line of these reports bears incontrovertible evidence. The same completeness and intelligence is displayed in all the departments of this most excellent paper. Sparkling with wit; bold in denunciation where censure is required; generous in laudation where praise is deserved, its editorials are models of vigor, purity, and elegance of diction, and are widely quoted by the Press of the State.

The increase in the business of the paper during the past year has necessitated the purchase of a second large press costing \$22,500, which the receipts of the paper have long since paid off, besides leaving a handsome series of dividends for the proprietors. An entire building is occupied by the composition, editorial and press rooms. The publication office is separate from the editorial rooms, being on Montgomery street, within convenient distance of the Stock Boards. The material, furniture, presses and other property required in the continuance of the business, is valued at \$120,000, a low estimate. Mr. D. F. Verdenal and Col. J. P. Jackson are the proprietors, gentlemen whose social and business standing is sufficient guarantee of the integrity of any enterprise in which they may engage. Col. Jackson's connection with the *Post* and the number of his business engagements prevent him from devoting much active attention to the *Exchange*. The responsibilities of managing director fall on Mr. Verdenal, who discharges them with a zeal and fidelity to the public which the thousands of readers of the *Exchange* can justly appreciate. Besides being a thorough business man, Mr. Verdenal is a brilliant writer and from his pen, ever ready and always industrious, fall the many gems of thought, and are winged the many flights of fancy which have given his journal its distinctive character. The business might be profitably increased by adding thereto the trade of preparing circulars, letter-heads, etc. Experience has, however, shown that first class journals are never issued from an office which devotes its surplus energy to the business of job printing. "Excelsior" is the motto of the Exchange Publishing Company, and the *Daily Exchange* newspaper is the banner whereon the world may need that evidence of high hopes and honorable aspirations.

The best features of the daily paper, and others that may not be introduced in a journal of ordinary size, are embodied in the *Weekly Exchange*, a magnificent eight-page paper, which circulates extensively in the Eastern States and Europe. Replete with the latest mining news, carefully edited, and enlivened by original articles on the questions of the hour, it is a welcome visitor to the mining camp and home circle. Although both the *Daily and Weekly Exchange* are now models of journalistic taste and ability, and business enterprise, it is the intention of the management to still further improve both journals, and enlarge their sphere of usefulness.

GEORGE SCHULTZ.

"And here comes General Schultz—the 'Old Man Schultz,' as they call him, the man who now controls Exchequer and Bullion—used to control Justice," remarked an operator to a friend who was around seeing the sights. In many respects George Schultz is a remarkable man. He is full of grit; as tenacious as a bull-dog; as confident of success as the most ambitious soldier. Although generally called old, Mr. Schultz is quite a young man—only forty-three, as the town records of Hanover would show, if examined. He has been a resident of this State since 1855, engaged in the wholesale liquor business, of the firm of Schultz & Van Bergen, who are well known all over the Pacific Coast. But while engaged in this business, Schultz turned his attention to mining, and was among the first to express his great confidence in the future of the Comstock. He is prominently identified with the management of several properties on the great lode. At one time he controlled the destinies of Ophir, and subsequently Justice fell into his hands. The control of the latter was wrested from him by a so-called reform combination, which was to astonish the stockholders by what they would do. Schultz concluded to let them try it on, and the stockholders have been very much surprised at the number of assessments levied under the reformers' management. But Mr. Schultz has retained and still manages Bullion and Exchequer. The Bullion mine has been worked by the Schultz management ever since the Comstock was opened. In the face of apparently insurmountable obstacles; when the Comstock was deemed played out; long before and after Fair and Flood and O'Brien waxed rich on the profits of their bonanza, Schultz kept sinking that Bullion shaft. People laughed at him and thought him crazy; but he kept on, determined to find a bonanza, if he sunk away down to the nether regions for it. At present writing, Bullion seems to have struck the fore-runners of an important ore body. It is to be hoped that Mr. Schultz's hopes will not be again disappointed. He deserves success in Bullion; he has worked it faithfully and economically for the best interests of the stockholders. Comparatively few assessments have been levied. Several times Mr. Schultz has stood upon the verge of ruin. Carrying large blocks of stocks, a sudden panic found him unprepared for the emergency. But he stood the pressure, and with the kind assistance of sympathetic friends, weathered the storm.

Mr. Schultz would attract attention anyway. Tall and erect, his Teutonic features are decided, although from the cut of his underchin whiskers, he has often been called the Horace Greeley of the market. He occupies a splendid mansion on Sutter Street, lives like a prince, and has a wife and family to enjoy life with him.

WILLIAM P. DEWEY.

The discovery of the Washoe silver mines, in 1859, greatly enlarged the field of mining enterprise on this coast, and created a demand for more cheap and efficient methods for the treatment of this class of ores than those previously in use. When the owners of the Ophir mine brought down their first lot of ore and found, after paying at the rate of \$400 per ton to have it worked, that a large percentage of the metal had been lost in process of reduction, great was their dismay and earnest their desire to find some more cheap and effectual plan for its treatment. In this emergency various parties were induced to commence a series of experiments looking to the discovery of some more economical style of treating these valuable ores. Among others who engaged themselves in this manner, were Mr. William P. Dewey and his associates, Messrs. Smith and Cunningham, who, after a long course of trial, conducted at the foundry of Goss & Lambard, in Sacramento, devised and introduced what is now known as the "Washoe Pan Method of Amalgamation," which, because of its admitted superiority to all others, has come into general use, not only here, but in Australia, and to some extent also in Mexico, South America, and in the leading mining countries of Europe. The first works constructed by these gentlemen were put up at South Beach, in this city, where for some time they treated the Ophir ores under contract with that company, never returning less than 90 per cent. of fire assays, a much closer working than is generally reached at the present day. When the Ophir Company put up their large reduction works in Washoe Valley, they purchased of Mr. Dewey and his partners not only the right to use their process, but also their pans and other apparatus, all of which was removed to the new establishment of the company and set up there, Mr. Dewey going over to Washoe, and for two years supervising there the metallurgical branch of the business, receiving as compensation for his services 2½ per cent. of the gross bullion production made. To Mr. Frank G. Cunningham, Mr. Dewey's partner, is due the credit of introducing false bottoms to amalgamating pans, and employing steam instead of fire for warming the latter, an improvement that, like the pans and chemicals, has also come into extensive use. These were the halcyon days of Ophir, when she paid dividends monthly at the rate of about \$60 per foot.

As the inventor in part of the Washoe pan-process, Mr. Dewey has connected his name in a creditable manner with the metallurgy of gold and silver on this coast, and we cannot just now call to mind a better type of the active, educated California miner than we find in this young man. Having supplemented a good medical education with a thorough chemical training, he was tolerably well fitted to follow the bent of his early inclinations, which lead him into the

field of metallurgical experiment and practical mining, in both of which he may be considered an adept. As an amalgamator and millman, he has not many superiors on the coast, his opinions having great weight, also as a mining expert. He is not merely an office man, but an out-door worker, spending much of his time in the California gold fields or in the silver mines of the more remote interior. He has large mining interests, and looks after them personally, a duty that occupies a good deal of his time. He prefers legitimate enterprises to speculative operations, and is not afraid to put his money into anything that has a square, practical look about it. While his mining investments have generally been fortunate, he has sometimes, through the guiles of "ye honest miner," found his profits on the wrong side of the ledger. In business circles Mr. Dewey, to adopt the phraseology of the underwriter, ranks "A No. 1," and what is equally to his credit, he is widely known as a person of kindly impulses—is as much a favorite with the lowly poor as with the scheming millionaire. He is benevolent in a broad and good sense. His frank and unaffected manners confirm the favorable impressions made by a goodly person, and even a stranger would be inclined to trust him with grave responsibilities. We have places and a need for more such men in this community.

CAPTAIN E. R. WARSAW.

Capt. E. R. Warsaw was born at Montgomery, Alabama. His life has been usually eventful. He began at the first round of the ladder, so to speak, and he has risen to the very top. We have had occasion to speak of very few men who can show such a brilliant and enduring record as his. At the age of fourteen, Captain Warsaw shipped on a vessel engaged in the China trade, and until 1845, he followed the sea in ocean vessels. At the outset of the Mexican war, Captain Warsaw, in common with other adventurous spirits, joined the Texas Rangers, a battalion that rendered signal service, under the command of Captain Walker. Captain Warsaw followed the fortunes of General Scott, from Vera Cruz to the city of Mexico, and was an active participant in the most notable fights. He retired from the service with honor, at the close of the war. In September, 1849, the Captain arrived in California, in quest of a fortune. The first four years, from '49 to '53, he devoted to mining in the mountains. This portion of his career was not specially eventful, neither was it satisfactory. He failed to strike a paying placer. Next he turned his attention to stock-raising. In this business he made and lost a fortune. In this respect his experience was like that of many others. In 1856, Captain Warsaw resumed the calling of a seaman. His first command was a ship running from New York to Valparaiso, and the Indies. He continued in command of sailing vessels until 1867, when he accepted the position of captain in the Pacific Mail Steamship Company's service. He commanded in the course of his term nearly all the celebrated steamers of the China line, terminating his connection with the company in 1874, soon after the burning of the "Japan." Since retiring from the sea, Captain Warsaw has been actively engaged in mining enterprises. His integrity and tenacity of purpose have given him an excellent reputation in mining circles, and, as is usual with the men of his stamp, he has raised himself to a prominent position. Captain Warsaw is now in the very prime of life, and in view of the fact that he is the leading owner in the Vermont Consolidated Mine, and other valuable properties, his prospects for a comfortable career ashore are of the most promising character. The Captain is a resident of San Francisco.

JOHN T. BRADLEY.

John T. Bradley was born near Mount Sterling, Kentucky. Like most men who have made deep ruts along the pathways of life, he pushed out from the parental fireside early in life. Before the dawn of adolescence had even gathered upon lip or chin, at the age of twelve, he turned his face westward along the path of empire, and with but five dollars in his pocket, and a bundle, he started in 1849 across the plains for California. He first pitched his tent in Grass Valley, and became a miner. Industry, temperance and economy brought to him a large measure of success. When Comstock and others sent abroad the facts of their wonderful discoveries at Virginia City, young Bradley again folded his tent and crossed the Sierras. Here, in this new field of broad ledges and bonanzas, he soon became one of the magnates of success. From that hour to this, his fortunes have fluctuated between two extremes—the zenith and the nadir of material prosperity. Not, however, until the Comstock was transferred to California Street, and represented there by numerals and letters upon incorporated paper, did his pocket begin to collapse and inflate. Up to this period, a steady inflow of success came to his coffers as the result of well-applied industry and economy. Keen and incisive as is his brain in analyzing the motives and plans of others, still he has stumbled and sometimes fallen over the hidden wires which unscrupulous manipulators have so often stretched across and along the avenues of speculation. Elastic and recuperative, however, he has as often recovered the perpendicular, and faced again the everlasting "tiger." Open, generous, loyal to those toward whom he turns in friendship, his hand and arm have ever been at the disposal of the unfortunate. Probably no man around the Exchanges has so often imposed obligations upon others without solicitation, as has our subject.

With the Ten Commandments and the Beatitudes written upon his heart by a good mother, he has made a way upward from the very moment he left her side, with five dollars, for a long journey across the plains.

John T. Bradley is as little indebted to the outside world for what he is as any man living. Instinctively self-reliant, and inspired with a lofty purpose and hope, he has always rested upon himself, and in the Providence which his mother taught him was the environment and constant help of the trustful. Still young, he steps with a firm foot, and hopes and plans with a vigorous heart and brain. For the good of the true and unfortunate, it will be a kind Providence that will lengthen out the years of John T. Bradley with redundant funds and a healthy nerve far into the realm of the sere and yellow leaf. But let what will come, many an ever-green and flower will fall where shall rest the ashes of the young pilgrim of Mount Sterling.

HON. ROMUALDO PACHECO.

The subject of this sketch may well be styled "California's favorite son." He was born in Santa Barbara, in the year 1831, and is consequently forty-seven years old. There is much of romance in his career, and he is an illustration of the theory that—no matter what the surroundings—"blood will tell"; or, in other words, a man of intellect and culture will inevitably reach his appropriate sphere, and exert his legitimate influence in society. Want of space prevents an allusion to many interesting details, but we give the salient points in the career of an honored citizen. He was educated by private tuition, and at a suitable age was trained for nautical pursuits. He was at sea from the age of ten until he was about seventeen. He then returned to his home in Southern California, and engaged in farming and stock-raising, which pursuit he followed for about five years. At early manhood, he took great interest in politics, and speedily acquired a prominence among the citizens of the southern portion of the State, both native and American. He has always been an ardent Republican, and in his political career, as well as in his social relations, his honorable dealing and fidelity to trusts imposed have won for him the confidence and esteem of all classes of our citizens. In 1853, he was elected to the Assembly, where he served one term; and in 1856, he was elected to the Senate, which position he filled for three consecutive terms. His career in these positions was characterized with such marked fidelity to his constituents and usefulness to the State, that, at the expiration of his last term, he was nominated and elected, in 1863, to the office of State Treasurer. In 1873, he received the nomination for Lieutenant-Governor by the Republicans, with Newton Booth at the head of the ticket, and shared in the victory of that campaign. In 1876, when Governor Booth was elected to the United States Senate, Mr. Pacheco succeeded to the gubernatorial chair, which position he retained until the close of the term. In the campaign following, he received the Republican nomination as a candidate for Representative to Congress from the Fourth Congressional District, and it was claimed that he received a majority of votes. The vote was close, and Hon. P. D. Wigginton, the Democratic candidate, contested the election before the House, and was declared entitled to the seat. After this decision, Mr. Pacheco returned to the State, and became associated with W. E. Hale, Esq., a well-known member of the San Francisco Stock Exchange, and entered into the business of stock brokerage, which, judging from a most propitious beginning, augurs a future prosperity. Mr. Pacheco brings to his new vocation a peculiarly varied and valuable experience, which of itself furnishes a desirable fund of capital for a vocation wherein a knowledge of human nature is a highly essential acquisition. He also takes with him to the membership of the fraternity such elements of excellence of character and agreeableness of manners that will render him ever welcome at the sittings of the Board, and insure an extended popularity to the firm of which he is a member. His fellow-citizens have ever been ready to honor him by the imposition of high trusts, and we hope that their benefactions in the future will prove more numerous, and abundantly substantial.

JOHN SEDGWICK.

John Sedgwick, one of the leading members of the Pacific Stock Exchange, first looked up from the cradle some fifty years ago, in the little rural town of Sharon, Litchfield County, Conn. His father, Charles F. Sedgwick, Attorney-General for thirty years, and his uncles—Albert Sedgwick, "High Sheriff" of Litchfield County for twenty-six years, and John Sedgwick, Brigadier-General of the United States Army, who fell on the field of battle at the Wilderness—together with other distinguished official and literary family connections, such as Miss Sedgwick, the poet, and Theo. Sedgwick, the writer upon jurisprudence, give him the birth-prestige of a kind of official and intellectual aristocracy. His boyhood was peculiarly blessed in its social relations, mainly developing within such personal atmospheres as that of the Beechers, who then were there beginning to rise into public importance; of the Ellsworths and the Smiths, from whom the State has called some of its best Governors; as well as in the reflex of the light of the then great Law School of Litchfield Hill, illuminated by such minds as John C. Calhoun, Truman Smith, Theo. Sedgwick, and others who in after life won public

distinction. Reared under a system of morality typified, in its severity, in the rugged superficies of his native mountains, the lines of his childhood were laid in justice and in honor; giving to his manhood, despite the attritions of more than twenty years of lax pioneer and mining life, a sense of the equitable and chivalric which crown him a worthy descendant of the historic Sedgwicks of New England. The subject of our sketch was himself at one time Sheriff of Tuolumne County, making a somewhat graphic history through official connection with the great "Tuolumne Ditch War," in which Erwin Davis figured so conspicuously in 1856. Next we find him serving with ability as Chief Clerk of the House of Representatives, at Sacramento, in 1861-2; then as United States Collector of Internal Revenue of the Third District, and afterwards of the First District, with San Francisco as headquarters — an official career which seems to have well sustained the public character of his lineal line, which we find running back with distinction into the old Colonial periods. No longer in the public service, Mr. Sedgwick is at present engaged as commission broker of mining stocks, a sphere in which he seems to revolve with as much aptitude and success as in any former orbit of business.

Just abreast of the fiftieth mile-stone, the dust of the journey is beginning to gather in white and thickening flecks upon beard and lock. Standing six feet three, at right angles with the pave, and erect as Cleopatra's Needle, he moves a prominent figure among the crowd; carrying the evidence in physical proportions, expression of eye, and general bearing, that, like most of his ancestors, he was made, at least in great emergencies, to lead and direct the masses. Although he imbibed with his mother's milk the spiritual essence of Calvinism, none but a crucial analysis would now betray the evidences of its early impregnations. And yet, like the good Catholic, the rites of his primal faith will, without doubt, be accepted in his last moments as his only spiritual consolation. The creed and liturgy of his mother were inwrought by her as if with her fingers into the structure of his soul, as the weaver weaves the vine and the flower into the delicate fabric; casting it there in lines that no chafing of the rough forces of life will be likely to ever entirely unravel and obliterate.

John Sedgwick is no fractured brick in the personal pyramid of the Pacific Stock Exchange, but is rather a member that gives symmetry, stability, and character to the fabric. The world, surely, is no poorer for his birth, but had in truth its wealth increased in the very hour of his mother's parturition, when the Angel of Life passed him across the threshold into the realm of the conscious.

"ARCHIE" BORLAND.

The subject of this sketch was projected upon the world forty-six years ago. His cradle, under the shadow of the Cross of St. George, was rocked by a Protestant mother to the rhythm of "God save the King," in the little town of Colerain, Antrim County, of the Isle of Emerald and of the Harp. At seventeen, restless and ambitious, with brawn palpitating with crossed pulses, and with an inspiring faith in a beneficent Providence, as his entire capital, he crossed the Atlantic to seek in the New World the life-ideal which, in the glowing visions of youth, floated, a gorgeous apparition, down the vista of the future. In 1852, he came to California, located in Grass Valley, and there devoted himself to mining. Here he laid the foundation of future success; acquiring that experience which subsequently was to prove the key with which he was finally to unlock the doors that opened upon the object of his ambition. From the deep shafts and drifts of the mines of Grass Valley, he has marched to the front rank in the realm of industry, enterprise, and pecuniary success. In 1862, he crossed the Sierras, and began a new chapter of life at Virginia City. From that time, this point has been his chief center of operation; although, like most miners, he has occasionally visited, during this period, other localities, either as a prospector or as superintendent of some mining enterprise. The great Comstock Lode, however, has been his grand base of action. Here he has built his reputation and won his greatest successes.

"Archie" Borland is no common man. Although he carries in his pocket no parchment from the hands of an Oxford Professor, still, he carries the mental evidences of a favorable recognition from a far abler Teacher. With a heavy and active brain, set upon a strong neck, rising like a veined monolith of throbbing granite from out of a broad and solid base, he appears, as he is, a marked embodiment of physical and mental energy. Brave, generous, and genial, a host gather at his side and move on lines of his suggesting. Loyalty to friends and to principle is a distinguishing element in his composition, and constitutes him a strong living magnet. He is a miner by intuition; comprehending the sum of mineral indications with a rapidity and correctness of conclusion which has sometimes cast the profoundest deductions of the theoretic scientist into comparative insignificance. By intuition, his eye penetrates the geological strata, analyzes its deposits, and often measures their worth in advance of pick or drill. By the power of this perception, he moves a master among mine and stock magnates upon Pine and California streets. No "pent-up Utica" controls his plans. His brain was cast in too large a mold for small enterprises. He must stand a captain among captains, or else, like Ulysses, he withdraws from the field. A fortune at a single stroke now, only reaches the measure of his ambition in the field of speculation. Opportunity,

time, and health are the only requisites now, for him to finally reach the plane of the substantial millionaire, and even to purchase, should he desire, on return to the fatherland, a seat beside Plimsol, in the English Parliament. In matters of religious faith, our subject is a profound believer in the personality and omnipotence of God. "Whatever the Infinite does," says he, "is done well and sublimely." His providences he sees interweaving through all the vast plexus of life, reaching even to the fall of a sparrow, as well as to the fall of a hair from the humblest head.

The blood of the Scotch-Irish has flowered, in "Archie" Borland, into a hardy and fragrant blossom, giving additional evidence of its moral strength, persistency of purpose, and sublime trust. A nation of such men would, in any age, uphold the vitality, enterprise and conscience of the race, with a capacity and force that would bring success out of even the hands of a resisting fate. The more of such human forces, the better for the world's advancement of manhood and material wealth. The American Republic needs such accessions to its grand army of unostentatious social builders, to check the growth and expanding influence of a generation of republican aristocrats, in whose political conceptions the Empire, with its titles, its class privileges, its indolence, and its crimes, as the superstructure, and a servile peasantry as its mud-sills, rises above the Republic. Such men are the land-marks, the light-houses and the signal-towers of the industrial, speculative, and moral realm. Let more like "Archie" Borland be sent us from the infinite womb of the "coming," and the conquests over nature, and the strides of the human upward will be more rapid, complete and grand.

ROBERT D. BOGART.

Robert D. Bogart, journalist, was born, reared and educated at Princeton, New Jersey. At sixteen years of age he entered the navy, and in his nineteenth year he was assigned to duty on the staff of brave old Admiral Farragut. He was with the Admiral in all his famous engagements, beginning at New Orleans, in 1862, and ending at Mobile, in 1864. At New Orleans, and in passing the rebel batteries at Vicksburg, Mr. Bogart was mentioned in the official dispatches for gallant and meritorious conduct; and at Mobile he gained a special letter of praise from Admiral Farragut to the Navy Department. He entered journalism in 1870, and for two and one-half years was on the staff of the *New York Sun*. He severed his connection with the *Sun* to accept a San Francisco engagement. He has been attached to the Pacific Coast press some six years, and the press is now attached to him. He takes rank as one of the leading newspaper writers west of the Rocky Mountains. He is keen, witty and refined; but, like most men who wield a virile pen, he is nothing if not caustic. But his ability commands respect and admiration, and in newspaper circles there is no man who is more deservedly popular. He would not miss a legitimate opportunity to smash the editorial idol of a brother quill, and once begun he would make the work of demolition complete. But no man in the profession has more *esprit du corps* than Mr. Bogart, and no man of our acquaintance responds more quickly to appeals from less fortunate writers for the press. Mr. Bogart is so well known in the profession that it seems a work of supererogation to allude to his capacity for brilliant and enduring work; but, for the benefit of the outside world, we may state that his versatility and industry are phenomenal. Mr. Bogart is at present the leading writer on the *San Francisco Daily Stock Report*, telegraphic stock correspondent for the *Virginia Chronicle*, and mining correspondent of the *Boston Commercial Bulletin*.

JOHN LANDERS.

One of the most popular and genial young men in Nevada Block, and one of the permanent fixtures of that institution, apparently, is Mr. John Landers, or, as he is more generally known about town, "Johnny Landers." Mr. Landers is senior member of the firm of Landers & Co., General Agents on this coast of the Manhattan Life Insurance Company of New York, one of the oldest and soundest of the great Eastern companies. He is one of the brightest and most wide-awake business men on the Pacific Coast, and though he has met with many misfortunes, has before now been up to his eyes in stocks that have not treated him kindly in the end, he has stuck manfully to his business, and the old Manhattan would no more attempt to get along on this coast without Mr. Landers, than it would without the Board of Directors itself. Mr. Landers was bred to the insurance business, having been trained in it from his fifteenth year. He was born in 1841, in New York City. In his fifteenth year he was placed in the office of Lorenzo M. Arnold, one of the pioneers of the life insurance business in New York, and for six years remained with that gentleman, receiving a thorough training, and being fitted for any position connected with insurance. But young Landers couldn't bear the thought of remaining in a subordinate capacity, and in 1862 we find him striking out for the Pacific Coast, with a "Godspeed" from his old employer, and with high hopes of his own success. For two years after his arrival in San Francisco he devoted his attention to mining, on a limited scale, but his chief employment was in the business to which he had been trained—insurance.

In 1864, the Washoe excitement, just then getting at its height, lured him to Virginia City. He

went there on horseback by way of Downieville, and he tells with great pride now of the horrors he suffered on that desolate ride. He got there just when Gould & Curry, Savage, Norcross and Chollar were beginning to roll out their big dividends, and having taken with him his savings, he invested them with such good judgment that before two months had elapsed he cleaned up with over \$100,000. He was thinking then of returning to New York, but he received an invitation about that time to act as the general agent of the Manhattan, for the Pacific Coast, and the offer was so flattering that he promptly accepted it. He was then but 23 years of age, and already found himself rich, and in possession of a fine business. But good fortune did not stick by him always. He lost the greater part of his gains in subsequent speculations, and from that day to this has never permanently recovered them. He has been a bold operator, and sometimes a most successful one, but oftener has lost all in a week that he had accumulated by months of constant successes. He made a vast sum of money in the bonanza excitement of 1874-75, but the larger part of it slipped away from him. He was one of the organizers of the Andes Mining Company, and is to-day its chief manager, but the mine has not yet turned out profitable.

In person, Mr. Landers is dapper, with a jaunty business air that speaks volumes for his energy. He is as popular in insurance circles as he is among his mining acquaintances, and though sometimes greatly absorbed in his speculations, he keeps his insurance affairs at his fingers' ends, and gives them his personal attention every hour in the day. He rarely talks stocks to his insurance acquaintances, and never yet has been known to talk insurance to his stock acquaintances. This latter trait is so remarkable among insurance men, that it is worthy of special and grateful comment. Mr. Landers is a member of the Bohemian Club, and one of the financial pillars of the institution.

RICHARD WHEELER.

The subject of this sketch was born in Buffalo, N. Y., July 12th, 1844; arrived on this coast September, 1857. During the Salmon River excitement, in 1862, Mr. Wheeler was one of the first to go, and, like the majority of the pioneers of Idaho—which was then an almost unknown wilderness, and a part of Washington Territory—packed his blankets upon his back for hundreds of miles, and endured all the hardships of the trip, with the endurance of an old veteran in the business, although then only eighteen years of age. He mined for a while at Oro Fino, and then went to Lewiston. Shortly after his arrival, Mr. A. S. Gould, now Superintendent of the North Carson mine, brought up from Portland, Oregon, the material for a printing office, and started the *Golden Age*, a weekly newspaper. Mr. Wheeler, feeling the effects of the want of a trade, enlisted as “devil,” and apprenticed himself to the “art preservative of all arts.” He is the first individual that graduated at any trade in Idaho—finishing his time under Frank Kenyon, subsequently proprietor of the *Lyon County Times*, and founder of the *Bodie Standard*.

† In 1864-5, Mr. Wheeler was interested in the *Portland Evening Bulletin* with an association of printers. The enterprise proving a failure, Mr. Wheeler came back to California in May, 1865, and took charge of his brother's hotel, at Folsom, and which was then doing a large business for so young a man to handle. He then showed his business qualities so well, that one of his brothers, who was located at Austin, Nevada, sent for him to take charge of one of his branches of business. Here the climate did not agree with him, and he left Austin for Virginia City, where he tarried for a while, “subbing” on the *Enterprise*. A call came to him from Genoa to take charge of the paper published there; and, although the office was in rather a bad plight, both financially and mechanically, he brought order out of chaos, and had succeeded in saving sufficient money to pay off the mortgage upon the institution, but which money, unfortunately, was in the hands of an agent in San Francisco, who just at that particular juncture failed. Mr. Wheeler, unwilling to pass through months more of such labor as he had passed through, stopped the *Douglas County Banner*, and accepted an invitation from Mr. Crawford, of Carson City, the mortgagor, to enter into partnership with him the following Spring (of 1866) in starting a paper at Meadow Lake City, a place then assuming considerable importance from discoveries of silver and gold mines. The mines proving a failure in that district, the project was abandoned.

On the 22d of July, 1867, Mr. Wheeler, in conjunction with M. D. Carr, started the *Stock Report*. At that time the San Francisco Board of Brokers had but recently moved to a room, especially fitted for them in the New Merchants' Exchange, California street. A room was given the young firm, by Mr. Sneath, then President of the Merchants' Exchange, and permission to put in a printing office. An old Degener half-medium press, a small marble stone, and two or three small fonts of type, constituted the outfit. The size of the first issue was 18x12, printed upon one side, on heavy book-paper. At the first, Mr. Wheeler occupied the quadruple position of carrier, solicitor, compositor, and editor, and for several years it used to be remarked by people observant of his movements, that he did the work of four, and did it well, as the establishing of the *Stock Report* shows, as up to the time of his retirement from it, April, 1875, not one single dollar capital had been invested in it; all the material, etc., was purchased from its profits, including considerable sums of money drawn out by both Mr. Wheeler and Mr. Lawton.

In 1869, Mr. Wheeler compiled the statistics, showing the dividends and assessments of the Nevada mines. Prior to the compilation of the work, the opinion was universal, that the assessments had exceeded the dividends, but instead, this work showed the reverse was the case, and that the excess of dividends over assessments was equal to the total of the latter. The work was largely quoted from by all the leading papers, in England, France, Germany, as well as the United States. The San Francisco Stock and Exchange Board, in recognition of the work, passed a vote of thanks to Mr. Wheeler, for his compilation singly of such valuable interesting statistics.

In 1872, the business of the *Stock Report* was enlarged, and book-binding and lithographing added to the news and job printing departments.

In 1874, the *Stock Report* was enlarged to a four-page daily, and a bid made for the advertising of mining assessments, and so successful was the new project, although started with doubts of its success, both from his partner, employes and friends; but evidently Wheeler does not know what "fail" means, as in less than three months the paper had been enlarged twice, to accommodate the advertising patronage flowing in, and placed upon a sound basis. So successful was the new enterprise, that efforts were made to cripple it by having laws passed by the Legislature to compel the advertising of mining assessments in papers of a general character instead of special. A bill of this character was passed, but vetoed by Governor Booth, and although by some hook or crook an amendment to the code crept in of about the same character as the special law. Mr. Wheeler then went to work to defeat these movements, and enlisted a staff of well known and talented journalists in this city.

At the time of the great fire in Virginia City, in October, 1875, Mr. Wheeler was appointed Secretary of the Relief Committee, enlisting funds for the relief of the sufferers by that disastrous fire. Here, again, his indomitable energy came into action, and through his efforts principally were the afflicted ones of that city relieved, he attending personally to the shipping of the goods from this city, brooking no delay by the railroad, and seeing personally each morning that the relief car was attached to the express train. Mr. Wheeler's duties were so arduous that, at the completion of the work, he retired on the sick list for a time.

In April, 1875, Mr. Wheeler disposed of his interest in the *Stock Report* and accepted the situation as manager of the mining department of the *Alta*, which position he now holds, and in which he has won the confidence and esteem of his employers. But it is hardly probable that his active nature will allow him to remain long out of some enterprise.

ADOLPH SUTRO.

In another part of the present work, great space is assigned to a description of the wonderful tunnel which bears Mr. Sutro's name; and it seems, therefore, that a personal sketch of this great founder may not be amiss, though, really, a history of the Sutro Tunnel is a history of Mr. Sutro himself. The most energetic years of his life have been spent in conceiving and perfecting his great scheme of tapping the Comstock, eighteen hundred feet below the surface, with a tunnel four miles long—and right well has he spent those years. No other man, probably, on all the earth's surface, could have perfected that scheme and brought it to a successful issue in face of such difficulties as Adolph Sutro has encountered for over fourteen years. History will remember Sutro for centuries to come, not only as the projector of the greatest mining enterprise on the American continent, but as a man who, in carrying out his mighty task, met with obstructions of all kinds and conditions that would have appalled many as stout hearts as his perhaps at the very outset. There is something majestic in the way Mr. Sutro overrode all obstacles, raised his capital in the face of ridicule that would have driven other men out of the money marts of Europe, and finally won the American Congress, despite the most violent and powerful opposition, to recognize his project and grant it certain concessions, by which it was enabled to find a ceaseless flow of money for over ten years. No other man than Sutro could have done all this—no other would have dared attempt it even.

Mr. Sutro is about sixty years old. As his name implies, he is a Hebrew of French birth and parentage. Of his early career but little is known, though it is known that he was highly educated in France and Germany, had traveled extensively, and was recognized as a man of tremendous capacity, even before he ever saw America. His first occupation in California was humble, though respectable. Some of his enemies say he kept a cigar store, and others, that he peddled goods; but be this as it may, Mr. Sutro never made any but an honest living.

It was in 1864 that he conceived the plan of his tunnel, and shortly after that he sprang into prominence by means of the project, that, to this day, has never left him. During its construction, a work which he has always managed either in person or by trusted agents in his absence, he has made at least twenty trips to Europe; has spent Winter after Winter in Washington, and been here and there and everywhere—in, fact, as ubiquitous as a graveyard ghost.

Mr. Sutro has an excellent wife, who has shared all his hopes, his fears, and his triumphs, and it is to her in no small degree that he is indebted for the encouragement that enabled him to stem the current of abuse, ridicule, and effort to ruin him and his project, that so frequently swept down upon him. They have several children, all daughters, we believe; and the family now spend most of their time in a beautiful residence at the mouth of the celebrated tunnel.

AUGUST HEMME.

Hanover, Prussia, is the birth-place of August Hemme. Into this old and aristocratic capitol of Northern Germany, the home of Klaproth and Schlegel, he made his advent in 1833. At the age of eleven, he emigrated to the United States. The first five years of his residence among us was upon the Atlantic Slope. In 1849 he took up his line of march the second time for a new home, and finally pitched his tent upon the banks of Feather river, California. Here he plied the rocker and the sluice with flattering results until, yielding to the longings for broad acres and cultivated fields, we find him, for the first time, in the *role* of the honest farmer. But nature, it is evident, did not construct our subject on the model of the husbandman. Although he has great admiration for broad horns, blooded equines, huge squashes and mammoth beets, still the metropolis, with its feverish pulses, its sharp competitions, its ring of coin and its stock convulsions, has for him far greater attractions. It is here that his restless and ambitious spirit finds congenial excitement and adequate circumference of action. Benevolent, sociable, genial and enterprising, some great center of aspiring, struggling, antagonizing and sorrowing life is essential to his happiness. Although with an avoirdupoise which breaks the beam on two hundred pounds, and somewhat inclined apparently to the lymphatic, still there is not a single sluggish globule in vein or artery. The currents of life, both of blood and of the nervous, sweep through brain and heart with a vigorous and healthy bound. To think and to do on a kind of high pressure plan, is the natural scale of movement with Mr. Hemme. His chief vocation now for years has been that of an assayer. But while he analyzes ores and refines bullion, we find him with one eye at least shrewdly criticizing the stock market, a field in which few have been more successful than he. Quiet in his operations, he moves in the arena of stocks, unostentatiously, and usually with marked success, as his large acquisitions testify. It is not, however, in the sphere of industrial and speculative life that August Hemme has written history in the most enduring lines. Footprints from which flowers have sprung he has left along every path that he has trod. His hands instinctively reaches out towards the helpless and the tearful. His heart was cast in a broad mold with sympathies that embrace humanity. A direct offspring of the great Germanic Reformation, the sturdy faith of Martin Luther became with him the molding and guiding influence in early life. But few turn towards Christianity with a loftier trust. With him it is the transforming and transfiguring power under which the world is steadily being sculptured into the ideal. And, as a confirmation of this, his purse strings inevitably loosen whenever the needs of the church demand it. His beneficiaries here are princely. The ledger of no man in San Francisco will show so large a balance to his credit in the building up of the bulwarks of Christian civilization as will his. Thus far Mr. Hemme has fulfilled a grand mission—one that carries with it memories fragrant as morning flowers, and as enduring as the immortal. In the self-exile of the young boy of Hanover, the fatherland lost a promise. We, however, in it, won a fulfillment—a fulfillment whose paths of beauty run out without shadow and without end into the realm of the future.

THOMAS HILL.

Our subject is an exotic transplanted from Anglo-Saxon soil—a providence, fortunate both for him and the race, whom he lineally represents. Without this transplanting into the soil of a new continent of broad savannas, lofty mountains, and Amazonic rivers, the genius of his pencil might have still slept. England was lifted above the deep in a moment when the Angel of Sublimity rested from his work—when all the fields of majestic landscape—the nurseries of great painters—must have been finished; hence the providential gift to us of this master delineator of nature. The chalk cliffs, miniature mountains, heavy atmosphere and contracted empire of the Englishman, form no school for the growth of great teachers in the republic of the elegant arts. Geography, sunlight, and aerial temperature, are requisites in the inspiration and culture of great artists. None of these, with the proper qualities or features of constitution, belong to the British Isle; therefore, a true master was saved to art when Thomas Hill turned his back on the graves of his fathers for a home among the grandeurs and expanses of the New World.

The subject of this sketch was born in Binghampton, England, in 1829. When but ten years of age he emigrated to the United States. His experience has been checkered—a history of constant struggle under difficulties after a lofty end. Through all the vicissitudes of life, the one great thought—the desire to woo Nature, and to transcribe with faithful hand her everlasting manifestations has led and inspired him. Art, to-day, smiles no more approvingly upon any of her gifted ones than upon him. “Yosemite” and “Donner Lake” are creations in which Hill will live in all ages of the republic of scenic beauty. The transcript of mountains, woods and lakes, however, sometimes for a period, becomes with our subject a matter of less inspiration than the chances and excitements of the Stock Exchange. The profits of a few hundred shares of Sierra Nevada, down in the twenties, has the tendency to quench for the time the light of the pencil. In the presence of such sudden fortunes, the disciple of Polygnotus is apt to become no more than other men—a common creation, treading the lower planes of life with the vulgar, and indulging in the same genuflexions of material worship. The distance and

violence of oscillation between the divine delineations of the pencil and the writing out of a broker's order for mining stock is too broad and comical for description. It, however, illustrates the power of genius, and stamps our subject with the versatility of the infinite.

Modest, loyal to moral principle, and a faithful friend, Thomas Hill, in the grand scene of life, is more than the simple artist. In the aggregate, he reaches the full measure of a man. The creations of his pencil will live after him; but his ministrations at the altar of friendship and of love shall survive them. These shall run out forever and forever as lines of light, parallel with the immortal.

E. J. BALDWIN.

"Some men are born great, some achieve greatness, some have greatness thrust upon them."

To a certain extent the above quotation is true, but often that is attributed to chance, or good luck, that is in fact the result of shrewdness and foresight. The great secret of success in life, and particularly on this coast, lies in the possession of the faculty of embracing opportunities, and there is no community on earth so prolific of opportunities as is California. It is true that occasionally a case of downright stupid luck occurs in the acquisition of quite a sum of money, and particularly does this happen in stock dealing, but as a general rule, the man who happens to call the turn on faro or stock dealing, loses his gain on the succeeding call. Those who acquire permanent and substantial fortunes, either in the stock market, or other more regular branches of business, achieve their good fortune by close study and application to their vocation. They are generally possessed of that all-important faculty called tact; they intuitively know how to take advantage of an opportunity. There are thousands of men in San Francisco who have had the same chances that have been utilized by such men as Flood, Mackay, Fair, Sharon, and the subject of this sketch. Wm. M. Lent has been called foolish, and Jim Keene was at one time ridiculed. These men are called "lucky," while those who term them so, are now, after having the same chances, moving along in the throng of mediocrity, or absolute poverty. These thoughts are suggested as we enter upon a review of the life and experiences of the subject of this sketch.

Mr. Baldwin was born in Butler County, Ohio, about five miles from Hamilton, on the third day of April, 1828, and is now a little over fifty years old. When he was about seven years of age his father moved west into the State of Indiana, about seventy miles east of Chicago, near the home of Hon. Schuyler Colfax; indeed, his father's farm and that of the Colfax family were adjoining. Mr. Baldwin and his brother worked on the farm with their father until he was about twenty years of age. Here he learned what he knows about practical farming, and has found this information of inestimable value in his operations in Southern California. About the age of twenty-one he was married, and soon after left the farm and went to a place called Valparaiso, in Indiana, about forty miles from Chicago. Here he started a country store, and remained in this locality about a year and a half. The railroad had not yet reached this point, but the Michigan Southern was approaching. He built three canal boats which were the first to run on the Illinois Canal from Chicago to St. Louis from 1848 to 1850. From there he went to Racine, Wisconsin, where he remained two years, and was engaged in the grocery business with great success. In 1853 he came to California. He purchased a number of horses and wagons, and a full supply of merchandise, and with a number of passengers started across the plains. At Salt Lake he sold the most of his goods and wares, making a clean profit of between three and four thousand dollars. Arriving at Genoa, he sold his wagons and harness, and started over the mountains with a pack train, and first landed at Placerville, where he remained two or three weeks, and then came to San Francisco, where he recruited his teams, and sold them at excellent prices. This was the successful termination of his first venture in California. It may be mentioned as an episode, that in crossing from Genoa to California, Mr. Baldwin took the route that was then called "Johnson's Cut Off," and went up Gold Canon, directly by the present silver mines of Nevada, the scenes of his later triumphs.

The first venture that he made in San Francisco, which may really be termed the foundation of his present colossal fortune, was the purchase of the Pacific Temperance House, then a thriving hostelry on Pacific street. He kept this establishment for a while, until he had increased the business very materially, when he sold out to a good advantage. Then he opened a new house in Jackson street (in 1854), called the Clinton House. This establishment was located in Jackson, near Front street; and Mr. Baldwin retained the proprietorship about five or six months, when he sold out at a good profit to a Mr. Corbett. Soon after, the house was burned down. He then went into the brick business on Lombard street, with a party who crossed the plains with him. It was soon discovered that Mr. Baldwin was an excellent purchaser, and could make good bargains at selling, and speedily he had made more contracts than the yard could fill. He then concluded to go into the business by himself. It is quite remarkable to note the fact, which shows the tact of the operator, that all of this time he was totally unacquainted with the business, and could not make a brick to save his life. He obtained a treatise on brick-making, and studied the science of the business, and went to work on a large scale. He soon after sold the first bricks that went into the Fort Point fortifications, making remunerative contracts with the Government engineers. Having secured these contracts,

he removed his establishment to Fort Point, and made all of the bricks that were used there, as well as all that were required at Alcatraz. He continued studying the work on brick-making, and soon became an expert, which he had the credit of being long before he knew one kind of brick from another. He was much perplexed at first here, as at these fortifications various kinds of bricks were used; but he mastered the business, and gave perfect satisfaction. For two years he followed this business, supplying the Government with bricks. In addition, he boarded the workmen, and from these two sources realized a monthly income of from twelve to fifteen hundred dollars. Then he began to look at real estate, and at the Folsom sale in 1855, he purchased a large amount of property, also a lot on Commercial street, on which the stable was located. He then bought out the stable, and went into the livery business, which he carried on for about seven years—all of this time investing in real estate.

Immediately after disposing of his livery business he started among the first adventurers to the mining district of Virginia City. He took with him a number of teams and a large quantity of lumber, and immediately established a lumber yard. He has been, as is generally known, dealing in mines and real estate ever since. He left Virginia City after a brief stay, and came to San Francisco, where he has continued his speculations. Sometimes he was a heavy loser in his mining operations, and at one time was compelled to mortgage all of his property. Thus, it will be seen, he was not always lucky, and it will be observed that, although he has invariably been successful in the long run in most of his operations, Mr. Baldwin has acquired his great wealth by hard study, energy, patience and untiring labor. He is by no means the child of chance, and there are few men on the coast who have so worthily and honestly earned their millions as he. He has studied while others have been recreating, and toiled while others slept.

The first of Mr. Baldwin's operations of any magnitude in stocks was in Crown Point, then in Belcher, Consolidated Virginia, and California, and then in Ophir. He had the foresight to recognize the merit of these mines, and exerted himself to the utmost to induce Mackay, Fair, and John P. Jones to embark with him in the Belcher, but could not succeed. At that time, had he been possessed of sufficient means, he would have obtained the whole of that mine; but the time for his colossal operations was yet a few days off. Soon, however, by gradual advances, he had means sufficient to run mines for himself, and, to use his own words, when the stocks would not go themselves, he would make them move. He has long been independent, has no pools, no co-operators, works by himself, for himself and keeps his own councils. He is not now either the head, foot, or center of any ring.

At the great Ophir conflict, about four years ago, by shrewd management, Mr. Baldwin acquired the possession of over one-half of the entire stock, that is over fifty-five thousand shares, and was full master of the situation, without any outside assistance. Thus it will be seen, that with his other extensive interests in stocks, it was in his power to create a panic at any moment and cause ruin on every side. Such an acquisition of power is dangerous, when wielded by a single hand. He had at one fell swoop at least twenty millions in sight, but pursuing a more humane course, he was content with cleaning up about five millions of dollars. His latest achievement has been obtaining the control of the Justice mine.

These few incidents in a notable career demonstrate the fact that E. J. Baldwin has not sprung mushroom-like into an unnatural prominence among our galaxy of millionaires. He has not flashed into brilliancy, comet-like, to glitter but for an hour and pass away into an obscure oblivion. It has taken him thirty out of the fifty years of his existence to acquire his present position in the financial world. Beginning with almost nothing at the age of twenty, and having been engaged in the space of thirty years in nearly as many pursuits, in all of which he has made successes, he has earned the credit of being something more than "lucky." There have been times in his experience when the skies have lowered, but in every instance, by the exercise of an indomitable energy and will, accompanied by an intuitive shrewdness, he has turned a threatened misfortune into a positive success. Impending danger seems to have been but an incentive to a renewed courage that never counts on luck and never knows defeat. Now, at the age of fifty, it is natural for the possessor of great wealth as well as a critical public, to take an account of stock, and the thought is inevitable—to what end is all this accumulation of wealth. Some thus fortunate are of no service to their fellow men, but live within themselves, and like an oyster, are of no earthly service until the knife of death opens the shell and casts the substance abroad. Not so with the subject of this sketch. While he indulges in the enjoyment of rational comforts of life, as well as a legitimate use of those luxuries that wealth alone can purchase, he has made foot-prints upon the sands of time that no untoward event can obliterate.

First in the order of the benefactions bestowed by Mr. Baldwin upon the community wherein he has acquired so much wealth and so great prominence, are the hotel and theatre that bear his name. At the time when Mr. Baldwin secured the site whereon the building stands, few would have dared to enter upon such an enterprise. His foresight prompted the conviction that the purchase of the land alone was a profitable investment; that trade was tending in that direction, and that all of the social surroundings of the locality would in a short time be such as to contribute to the success of a first-class family hotel. In this subsequent events have demonstrated he was perfectly correct. Ground was broken for the building in April, 1875, and it was completed in about two years. In its construction there were employed about 500

hands, including master-workmen and artisans of all sorts and grades. The building presents a commanding appearance, at the corner of Market and Powell streets. The frontage is in the style of the French *renaissance*, mansard roof, corinthian columns and classic cornices, with modern combinations and ornaments. The Powell street front is 275 feet, and on Market, 210 feet. The structure is surmounted by a number of towers, the highest of which is 162 feet. It was the intention of Mr. Baldwin, at the outset, to make this the most *recherche* hotel in the country, and to this end no expense was spared, and in most respects the desired end was attained, and in addition to the comforts of home-life, here the most luxurious tastes can be gratified. The building is fully fire-proof, and the details in this regard are arranged with a mathematical nicety. The cost of the building and furnishing was over three millions of dollars.

The Academy of Music, or "Baldwin's," as it is called, forms the Eastern portion of the structure, and yet has a separate identity from the hotel. It is the finest theatrical edifice in the city. Its seating capacity is about 1700. Thus, it will be seen, it is not the largest theatre in the city; but in completeness of appointments, it has no superior on this continent or in Europe. The prevailing color of the auditorium is crimson, with upholstery to correspond, which furnishes a most cheerful and cosy air that renders every one at ease. The frescoing and other ornamentation are of the richest character, while in all of the details the stage and appliances are most complete in their arrangement. These are two of the local benefactions conferred upon the community by Mr. Baldwin which will render his name perpetual.

It may be suggested in this connection, that in the prosecution of the material improvements alluded to, the proprietor kept in mind the interests of the community, and yielding to a sense of duty, so arranged his plans that home industries were patronized in every instance where it was practicable. All the lumber for the furniture and many of the fixtures, including the mirrors of both the hotel and theatre, was purchased by the cargo at the East, the Pacific Islands and Mexico, and imported to be worked up by our own home labor. This work was entrusted to the West Coast Furniture Company, and reflects the highest credit upon the establishment, and our artisans in particular. In fact, in all his movements toward improvements, Mr. Baldwin has always patronized home industry.

Nor has the work of improvement ended here. It will be remembered that Mr. Baldwin has purchased the McCrellish property, on Market Street, near the Central Market. The lot contains a frontage on Market Street of one hundred and thirty-seven and a half feet, by one hundred and seventy feet, to a street in the rear, then eighty feet beyond; in all, with the rear street, two hundred and seventy-five feet. It is proposed, at no distant day, to erect a fine market house upon this site, which shall exceed in beauty and convenience of arrangement, every other establishment of the sort in the country. It will be embellished with fountains, and driveways so organized that at all times ladies can drive through the market, obtain refreshments or make their purchases in all weather, without exposure to the elements; and on Saturday evenings the scene will be enlivened with music. Thus is individual wealth utilized for the public good.

Yet this is not all. The versatility of genius and enterprising spirit of the possessor of well-earned millions, could not be circumscribed by the narrow limits of the Metropolis of the Coast. The charms of the garden-spot of California attracted the attention of Mr. Baldwin to Los Angeles County, and about three years ago he purchased sixty thousand acres of some of the best land in that county. Of this tract, there are thirteen thousand acres of as fine corn land as ever the sun shone upon, that needs no irrigation. It is intended soon to put a large portion of this tract into the market, to be sold for small farms. The home tract, which is best known as the Santa Anita Ranch, comprises sixteen thousand acres, about all of which is fenced in, and subdivided into fields of various dimensions. Upon this place is to be found some of the finest stock on the Pacific Coast, or even in the country. There are upon the premises seventeen thoroughbred fillies, three fine stallions—"Rutherford," "Grinstead," and a colt called "Lexington," the last of the famous "Lexington" colts. Two fine jacks and one hundred excellent mares for raising mules, about twenty thousand sheep, ten thousand Southdowns, brought from the place of Lord Walsingham, England, a number of rams that cost eight hundred dollars per head, fine merino sheep and lambs, all thoroughbred.

Among the cattle are Jerseys, Alderneys, Guernseys, Short-horns, Durhams, and beef Durhams. There are, also, about four thousand head of hogs on the place.

Last year about seven thousand acres were sown in grain, seven hundred acres in corn, four hundred acres in alfalfa, and about as much more to be put in the coming Winter. Upon this ranch nearly all of the vegetables, etc., for the hotel are raised.

During the last three years there have been employed on the place about two hundred men. Recently the force has been reduced about one-half. A great deal of land has been cleared up, and is now ready for tillage. The entire area is cut up with ditches for various purposes, some for irrigating, and others for drainage, others for running water. There are, also, about six miles of eight-inch pipe, so that all of the water facilities, which are abundant, are utilized. In addition to this, there are a number of artesian wells. The grounds are beautified by a number of artificial lakes, that are supplied by means of the pipes and ditches alluded to.

Upon the premises are about thirty fine buildings, built in rustic style, with many Swiss cottages intermingled. Rustic bridges add a romantic air to the scene. Interspersed are to

be found commodious stables, storehouses, and other outbuildings built in appropriate styles. A school district has been established, and a building supplied, where the children from thirty odd families are taught. These households furnish the labor of the place. It has always been the aim of the proprietor to hire people with families, for reasons that must be obvious. At first a few Chinamen were employed, but it has been demonstrated, that though they work for less wages, it was more profitable to hire white families in the long run. There is a country store on the ranch, which is kept constantly supplied with an ample stock of miscellaneous goods. There is, also, an extensive vegetable garden that supplies the wants of the community, consequently peddlers have no calling on the place, nor are they allowed to enter.

The orchard contains twelve hundred acres, upon which are eighteen thousand orange, lemon and lime trees, eighty acres of English walnut trees, two thousand almond trees, five hundred Italian chestnut trees, bearing; three hundred acres of vineyard, one hundred and seventy acres of foreign grapes, a multitude of peach, apple, pear, plum, white and black fig, and indeed every variety of fruit that can be found in the temperate and semi-tropical climates. There are specimens from Europe, Japan, China, South America and the West Indies. There are, also, about sixty thousand eucalyptus trees, embracing twenty-seven varieties. It is proposed to construct an avenue on the place three miles in length and one hundred and twenty feet in width, upon either side of which will be eucalyptus trees, with a row of the graceful pepper trees in the center, thus forming one of the most picturesque drives imaginable. There are on the premises about three thousand pepper trees in full growth.

The nurseries are very extensive, and contain thousands of trees, all raised on the place. They contain at least sixty thousand budded orange trees, and fully one hundred thousand eucalyptus trees, to be set out along the fences, and in groves of five or six acres each. The grounds are to be beautified also with about twenty fountains, in artificial groves of evergreens. There is near the centre of this romantic domain a hill about seventy-five feet in height, upon which it is proposed before long to erect a stone edifice in English gothic style overlooking the entire premises. It is the intention of the proprietor to make this the most complete and romantic spot in the country. Indeed it may be so regarded at the present moment. Nature, it would seem, had done quite enough to render this one of the most attractive spots on the coast, for she has been more than lavish with her bestowal of attractions; but the excellent taste of the proprietor, with an expenditure of at least four hundred thousand dollars, has drawn forth the latent excellencies of the surroundings, and is fast transforming the primitive elements of beauty into an earthly paradise.

Such is a brief sketch of one of the liberal benefactors of our State. Would there were many more such, possessed alike of wealth and the disposition, by such a liberal distribution of their means, and exhibition of public spirit as well as good taste, to not only develop the resources of their possessions for the gratification of their own fancy, but contribute so largely to the well-being of those by whom they are immediately surrounded, and of the community at large. Let E. J. Baldwin be no longer styled "The Lucky," but let all who learn the details of his peculiar career, accord to him the merited credit of being one of the most enterprising, liberal, and public-spirited of our citizens.

JOHN W. COLEMAN.

Prominent among the members of the San Francisco Stock Exchange, and a leading operator among the operators on the bourse of San Francisco, is John W. Coleman. A lady, sitting in the galleries of the Stock Exchange the other day, asked her broker escort: "Who is that pleasant, quiet-looking gentleman, who doesn't rush on like a wild bull every time the caller rings the bell, and yet is always making note with his pencil?" That was John W. Coleman, as pleasant a man as ever slaughtered a stock—when he wanted to; as cool and cucumber-like a bull as ever bought stock low down, when he wanted to sell 'em up high. Coleman, erstwhile, was a partner—or half a partner, or some kind of a partner—of the late James R. Keene—we mean late resident of San Francisco—and the firm represented a large amount of money, which were profitably employed on the incubating process "buyer thirty" principle, which Baron Wilke will assure you is the safest business in the market.

Mr. Coleman is not exactly a pioneer—that is to say, he didn't come to the Pacific slope in the Fall of '49 or the Spring of '50, and, therefore, wouldn't be eligible to membership in the Pioneer Society, and be entitled to a piece of the Lick Estate; but he came early in 1853, and is a pioneer of twenty-five years' standing, all the same. Mr. Coleman was born and raised in the Blue-grass District of Kentucky, and is a fair representative of that region which always produces men remarkable in many things. Mr. Coleman was born in 1833, and consequently is 45 years of age; but what is age to a man whose fortunes are made, who has a family of which he is proud; a residence at Oakland, which is princely in its dimensions and accommodations?

It was under the administration of Mr. Coleman, as President of the San Francisco Stock and Exchange Board, that the present gorgeous building in which the sessions of the Board are held, was planned and erected. Mr. Coleman devoted all his time to its supervision, and the result is a structure that will last as long as the youngest member shall live, and a great deal longer. It is a splendid monument to the executive ability of Mr. Coleman, and he justly feels

a pride as he daily walks through its halls and surveys its magnificent proportions. He has a right to be proud of the work which was accomplished during his administration as President, from the laying of the corner stone to the inauguration of the new hall.

Mr. Coleman retired from the Presidency of the Board on the completion of the new building, and in his quiet, unostentatious, gentlemanly way resumed his business as a broker—having no clients, however, except himself, unless occasionally importuned by some friend to buy or “carry” a few shares of this or that supposed to be “rising” stock. Mr. Coleman is too big-hearted to refuse an ordinarily reasonable demand of this kind, but as to comply with them all would break the wealthiest broker or operator in the Board; he generally exercises his judgment on the securities wanted.

Of all the genial operators and brokers, commend us to John W. Coleman. He is popular with the brokers; popular with his friends, and by his upright conduct and gentlemanly bearing has won the confidence and esteem of the community.

MARION JASPER McDONALD.

Better known as “Jasper.” This gentleman is one of the famous five McDonald brothers, the biographies of two of whom are published in this number of the MINING REVIEW. There is so much of interest in the career of the subject of this sketch—he has been so closely connected with so many of the memorable incidents in the history of the Pacific Coast—that it is almost impossible to condense even the most salient points of his eventful life within a few pages of our work. Born in Washington County, Kentucky, in 1831, of an old Scotch family, who were among the earliest settlers in that State, he left Macksville, his native town, called after his own family, when about twenty years of age, with but little to begin the world with except a good common school education; a handsome, manly form; an inflexible honesty; and a determination to succeed. He thought he could accomplish his object in Missouri, and tried it for a year. But the stories of the gold mines of California, which were current on the border in 1851, caused him to come here, overland, early in 1852. Not content to travel by the ordinary ox-team of those days, he and his party set out for the dreary and dangerous trip across the plains with mules, making the journey in seventy days—a wonderfully quick trip for those times; his party being the first emigrants to reach the State overland in 1852, arriving in Sacramento on the 7th of July. Like most of the early arrivals, he tried his fortune in the mines, and worked for some time at Wisconsin Hill and Iowa Hill, in Nevada County. A few months of camping out, and a diet of flapjacks, beans, and bacon, and not much luck, satisfied him that mining was not his forte. He joined his brother, R. H., in the drug business, at Sacramento, and compounded pills and potions for about a year. But getting disgusted with drugs, he started a hardware business on his own hook, at Sacramento, which he carried on from 1855 till 1861. The inactivity of retail trade was not congenial to his nature. He got tired of weighing nails and measuring ox-chains. So, leaving his store to his clerks, he embarked in many local enterprises, till the discovery of silver in Washoe, where he went in 1859, and was interested in many of the early locations on the Comstock. His far-seeing sagacity induced him to unite with others in the building of the old Kingsbury and Oglesby roads across the Sierra Nevada, to connect Carson Valley with California. In a very short time, he had splendid roads cut, over which a steady stream of teams and stages passed, till the completion of the Central Pacific Railroad rendered them useless. The tolls on these roads afforded a handsome profit on the investment of nearly \$200,000, expended in their construction.

About this time his health failing, he concluded that a trip in the mountains would do him good. As there were no railroads at that time, he rode on horseback to Salt Lake, and thence into Montana, just then coming into notice as a mining country. He rode on to Montana, and was impressed with the richness of the mines in that young territory. There being no machinery in it for milling or sawing, with the energy characteristic of his family, he sent to Denver, Colorado, and bought a quartz and a lumber mill, and had them hauled as quick as possible into Montana. He purchased an interest in the famous Dacotah Mine, near Bannock City, and expended large sums in developing that and other mines in which he became interested.

An incident that occurred about this time illustrates the character of the man too clearly to be omitted in his biography. Finding it impossible to obtain a quartz mill soon enough to work some of his mines, he set to work to extemporize one, which he made of wood and old wagon iron. He made the dies and shoes for the stamps out of the iron-work of old wagons that had been abandoned by the Lewis and Clark exploring party some thirty years previously. All the rest of the mill was made of wood, and with this crude apparatus he obtained thousands of dollars' worth of gold. After nearly two years spent in Montana, he returned to California in the Spring of 1863, and went back in 1864, but did not remain there long.

While in Montana he discovered the well-known Blue Wing mine, near Bannock City. He was one of the party of nineteen who located and laid out Virginia City, at one time the capital of the Territory, which he named in honor of Virginia City in Nevada. He was a witness of

many stirring scenes in that wild country, being present when Henry Plummer, Stinson and Ray were hanged together by the Vigilantes. He was one of the organizers of the city government of Bannock, and a member of its first Council; was vice-president of the convention that elected the first delegate from the Territory to Congress; and with Governor Doty gave the Territory its name, which was selected from nearly a dozen that were proposed. Its name signifies "a mountainous country." He constructed the first mining ditch in the Territory, at Bannock City, where he had a large merchandise store. He has extensive mining interests in Montana at the present time. At the invitation of his friend, Gen. P. E. Connor, he went to Salt Lake and became extensively interested in mining near Stockton, a town founded by the General.

Soon after this one of his sisters, who resided in California, became a confirmed invalid, and for the benefit of her health, in company with another sister, he went East, and traveled a year over the country, being nearly killed by the wrecking of a railroad train, near Rochester, New York. As soon as he was sufficiently recovered to travel, he returned to California, arriving here in December, 1865, and immediately embarked in the business of mining, and in 1867, purchased a seat in the San Francisco Stock and Exchange Board, and has been one of the most prominent and successful stock dealers ever since. He being one of the very few in the business who has never failed to pay a hundred cents to the dollar in all his business transactions. He has been among the largest and boldest operators, and invested heavily in the development of mines. He was a large owner and one of the original purchasers of the Raymond & Ely, Eureka Con., Golden Chariot and a number of other mines, that are now, or have been valuable. Nor has he confined his operations to gold or silver mines. He was one of the organizers of the Coos Bay, Oregon, Coal Mining Company, and owns a large interest in that valuable property now. At one time he owned a controlling interest in the now famous Sierra Nevada mine, and it was while under his management it paid its only dividends. He also controlled the Ophir and Overman; was the organizer and manager of the Belmont, which, with a number of other valuable mines, he controls at present.

To give even a list of all the enterprises in which he has been or is engaged, would fill several pages of our work. But there are several that are too interesting as historical data to be omitted. For instance: he was one of the original purchasers of the Argenta, Grand Prize and Independence mines, at Tuscarora, Elko County, Nevada. He is interested in the Homestead, Golden Terra, and other mines in the Black Hills, Dakota; and is always ready to provide capital to develop mines that promise to be productive. Nor is he backward in aiding other enterprises, as was illustrated when the Bank of California suspended; and the building of the Grand Opera House was stopped for want of funds. He furnished the money to complete it. We noted his name as a contributor to the Syndicate to restore that bank to the extent of \$50,000.

Among the many memorable incidents of his active life, it may be mentioned that he was paymaster and business agent of the first telegraph built between San Francisco and Salt Lake, and had the honor of connecting the wires between the Atlantic and Pacific, at Ruby Valley, Nevada, in October, 1861, and listening to the first message that passed across the continent.

In 1873, he was married in this city, and he is now one of the most substantial and respected citizens on the Pacific Coast.

In concluding our brief sketch of Jasper McDonald, we desire to state that when such men as he embark in the business of mining and stock speculating, it is safe to say that it is a legitimate and profitable business, such as encourages the development of the resources of the State; gives employment to labor, and is honorable as any other occupation or profession.

I. M. TAYLOR.

We are not going to eulogize this man. We never knew him to flatter any one else, and we are not going to flatter him. He has even some surface defects that we will not cover up—certain infirmities which, in fact, we are bound to expose. We will not say that he is an unamiable nor an ungracious person, only that he lacks the faculty of exhibiting these qualities in a strong light. He is taciturn at times, to the point of sulkiness; hence many persons on slight acquaintance consider him cold and grouty. Often he really seems so. Nevertheless, he knows a good deal about mines, mills, ores and kindred matters. There are those even who affect to believe that as a mine-viewer he has no superior on this coast; and it is probable enough that in forming a correct judgment of a property of this kind in an impromptu, off-hand sort of way, he is really without an equal. On this point all testimony is concurrent. We have often heard superintendents say that Taylor will pass through a mine and come out with a better appreciation of its value than any other man they ever saw. How he arrives at his conclusions we do not know, and suspect he can hardly tell himself, for he seldom pays much attention to exact measurements or carefully samples ores. He seems to have a native talent for the business, being governed by his innate perceptions or something of the kind, rather than by the opinions of others or any knowledge he may have derived from books. He appears, indeed, to have had not much to do with either mining books or schools, having never been to

Freiberg, or other technical institution. It is said that great poets are born, not made, and we almost think this is the case with great mining experts too. That certain men have natural aptitudes for this vocation is undeniably true, and to this class the subject of our remarks would seem to belong. Such confidence have some people in his ability as an examiner of mines, that if he were to make in the discharge of this duty a grave mistake, they would almost think it wilful.

It is related of the big-hearted Ralston that he had great faith in Taylor's judgment, and employed him often as a mining expert, it being his wont, after getting the reports of the great lights of the profession, to say to this gentleman in his familiar way, "Just take a run up and look at this thing and tell me what you think of it," and without more words the business was attended to. And marvels they were for their brevity, these reports of our expert to the great banker. On his return Ralston, as he saw him enter the bank, would look up with an inquiring "Well?" to which he would get for answer, "Reckon ye better drop it," or "It's a good gamble," or some expression of similar import, accordingly as the property inspected might have impressed him favorably, or otherwise. To the busy Ralston, who hated a tedious, garrulous person, this laconic way of dispatching the business was not unpalatable.

Taylor is notoriously a man of few words, almost too few, and his friends would be glad if he could make himself a little more communicative and affable, as it would help his popularity, at least with strangers. But if he talks but little he generally talks to the point, managing in his concise and monosyllabic way, to say a good deal. As he is brief in speech, so also is he brief in his written reports, which scarcely ever cover more than a few pages of manuscript. He has, however, prepared several lengthy papers of this kind, some of which are regarded as valuable contributions to the mining literature of the coast. His printed report on the Crown Point Mine, before it came fully into bonanza, attracted afterwards great attention for the accuracy with which the future of that property was therein forecast. In the light of subsequent events, this report reads like a prophecy. His article on the treatment of gold-bearing sulphurets, embodying the results of his experiments in this branch of metallurgy, published by Commissioner Raymond in his third volume of Congressional Statistics, is also a paper of much practical value.

Isaac M. Taylor was born in the State of Indiana about thirty-nine years ago, of Scotch Virginia ancestry. Having spent his boyhood on a farm, he was afterwards trained to the calling of an architect and builder. He came to this coast while yet quite young, and has here followed mining in its several departments most of the time since. He is well up in every branch of the business. He can open a mine and work it, put up a quartz mill and run it well, though we do not believe he could open a prayer-meeting, or run a Sunday-school with any success. We say this to justify the remark indulged in at the commencement of this writing, to the effect that he is not a man devoid of failings. He has another weak point, he is an impulsive giver, not of advice, but of money. With all his reticence and seeming stolidity—with all his hate of display and absence of "gush," he is addicted to the bad practice of indiscriminate charity—gives without question, and is generous to a fault.

PARKE & LACY.

Among the most effective and useful implements employed in deep mining are the Burleigh drills, introduced on this coast by Parke & Lacy, the well-known engineers and mining machinery makers of Market Street, San Francisco. These great labor-saving machines are worked by compressed air, which was first used as a motive power for working on the lower levels in deep mines, by these gentlemen; the first experiments being made in the Yellow Jacket Mine, in Nevada, and the Mariposa Mine, in California. Though their introduction was opposed by mining superintendents, miners, and foundrymen, such has been their success, that more than two hundred of these compressed air-drilling machines are in use on this coast, and a number of them are in use in México, Arizona, and Japan. The firm of Parke & Lacy, though only established in this city in 1874, have introduced a number of valuable inventions in machinery. Both members of the firm are practical machinists and engineers. Mr. Parke, the senior member, built the old Gould & Curry Mill, one of the first erected on the Comstock. Such enterprising and skilful men of business are a benefit to the community that sustains them.

THE WEEKLY STOCK REPORT.

The *Weekly Stock Report* is published every Friday by the STOCK REPORT PUBLISHING COMPANY, being under the same ownership as the *Daily Stock Report*. The *Weekly Stock Report* is a handsome eight-page sheet, devoted almost exclusively to mining matters. It contains all the sales in the Stock Boards, compiled and arranged under the immediate direction of Mr. Bunker, and certainly is the best newspaper for reference that has ever been offered to bankers and brokers. In addition to the report of sales, the *Weekly Stock Report* contains the daily review of the market, as given in the *Daily Stock Report*, tables of assessments, dividends, etc., for ready reference, and editorial articles on all the prime topics of the day. The *Weekly Stock Report* is the newspaper for people who reside in the interior, at the East, or abroad.

BULLION AND MONEY.

Although the employment of bullion in the coinage of money is inseparably connected, still we feel called upon to give a reason for publishing the valuable works on "Money," written by Col. Henry S. Fitch, because there may be some persons who may consider the profound studies and admirable writings of that gentleman on the subject of Finance, are not germane to the pages of the *MINING REVIEW*. The articles and speeches of Col. Fitch, which we publish in the present edition, contain matters of the gravest importance to all engaged in mining for the precious metals, or as stockholders in such mines, because, as in the physiology of the human system, a trouble that affects the head—the seat of sensation—may spring from a disordered stomach, so the value of the products of the mines of gold and silver may be seriously affected by the financial system of the country. For instance, an abundant supply of the description of money the Colonel advocates, would increase the profits of mining by reducing the costs of extracting the metals, through less interest on the capital invested, and the lower prices of the materials and labor used, by making money cheaper.

We strongly recommend our readers to study the articles we publish, by permission of Col. Fitch. These articles include "The Money Question," "The Double Standard," "The Co-relation of the Precious Metals" (published from the manuscript). His letter to the *Evening Post*, reviewing the absurdity of President Hayes' position on the silver question, enunciated in his Message; his review of the Silver Bill, when first enacted, made in reply to a request from the Executive Committee of the National Party; his great speech before the Executive Committee of the National Party, in favor of remonetizing silver; and his "Communication to the U. S. Monetary Commission." We are confident that whoever shall read these very able and original articles on the Money Question, will find much in them to remove old and false impressions, and much to give direction to new thoughts on that most important question. These are the reasons why we publish them, and we rely on the intrinsic merits of these papers—their intimate connection with the mining interests of the Pacific Coast, as a full defense for publishing them in the *MINING REVIEW*.

UNITED STATES MONETARY COMMISSION.

NEW YORK, October 1, 1876.

DEAR SIR:—

1. To what causes do you attribute the recent changes in the relative value of silver and gold?
2. What percentage or portion of such change do you attribute to a fall in silver, and what portion to a rise in gold?
3. By what process of reasoning or deduction do you arrive at the conclusion given?
4. What is the present general condition throughout the country of the trade, commercial or financial calling, or productive industry in which you are engaged?
5. If possible, give some statistics, showing the condition of such industry compared with its condition at other periods?
6. If a depression exists, to what cause or causes do you attribute it?
7. Is such depression due in part to a similar depression in some other country or countries, or to a general depression throughout the commercial world? In other words, is it local or general?
8. If the latter, to what causes of world-wide or international application do you attribute such depression?
9. Please furnish the Commission with any other information, bearing on the above subjects, which you possess and desire to communicate.

I am, dear sir, yours very respectfully,

JOHN P. JONES,
Chairman of the Commission.

To Col. HENRY S. FITCH,
Montgomery and Pine Streets,
San Francisco.

SAN FRANCISCO, December, 1876.

DEAR SIR:—In response to your invitation to contribute my views upon the important questions referred to the "United States Monetary Commission" for consideration, I respectfully submit the following.

I am, dear sir, yours most respectfully,

HENRY S. FITCH.

To the Hon. JOHN P. JONES,
Chairman of the United States Monetary Commission,

Washington, D. C.

Question 1. To what causes do you attribute the recent changes in the relative value of gold and silver?

Answer. There is but *one cause*, to wit: The demonetization of silver coinage by the governments of England, Germany, and the United States.

(What has caused these nations to demonetize silver by a limitation of its coinage and a restriction of its legal tender capacity, and the consequent restraint put upon its use, is quite another question, which I will endeavor to make clear in these pages).

Question 2. What percentage or portion of such change do you attribute to a fall in silver, and what portion to a rise in gold?

Answer. The fall in silver must be measured by the percentage of difference at which it is now sold, compared with its mint value before silver was demonetized, and its standard, as well as its relative value to gold, undisturbed.

The loss falls upon silver alone.

There has not been any advance in gold, measured by gold coin. There cannot be any change in its value, except when more or less of this metal is put into the coin it is made to represent.

Question 3. By what process of reasoning or deduction do you arrive at the conclusions given?

Answer. Among all the productions of the earth two were selected of which coined money was made and universally recognized. "Gold" and "silver" have been regarded as the "royal" or "precious" metals. First, because, as metals, they were valuable in the arts. Second, because their production in quantity gave no promise of superabundance, and third, because the civilized nations of the earth united in making of gold and silver a dual monetary coinage, of a fixed standard, as well as representative value. There has been no perceptible variation in the value of an ounce of gold, measured by the coin employed to purchase it, since the period when governments determined upon its adoption as a monetary medium of value. The same may be said of silver, until quite recently, when England took steps to bring about a general demonetization of it, and was blindly followed and aided in her design by Germany and the United States.

The law, therefore, which has governed the value of gold and silver in the past has been neither the difficulty of attainment, nor the cost of its production, as "Adam Smith," "John Stuart Mill," and other eminent writers on finance assert; but was the demand and use of these metals for coinage into money.

A simple solution of the question, "What determines the value of gold and silver?" is arrived at by the computation of the sum in coin which a given amount is capable of being converted into. This is the law which gives to gold and silver a fixed, immutable, and intrinsic value—so long as these metals enter, without limit, into coined money.

It should be remembered that the metals of which money is made are placed beyond the contingencies of a commodity—above the power to fluctuate in value, by the very acts which authorize its coinage into money.

The law prescribes that a given quantity of gold, of a stated fineness, shall enter each of the several gold coin denominations, and so also with silver coin. Were not gold and silver the metals adopted for conversion into money, thereby creating greater demand for these metals for *money purposes* than for any other uses, the price and value would fluctuate upon as wide a range of extremes as other metals in commercial demand.

To escape an *advance* of the value of these metals, *above* the intrinsic value intended to be put into each coin, it was doubtless determined from the first, to rate their value at a point not likely to be increased by any exigencies of demand for commercial uses; in other words, to make the demand for conversion into money transcend all other demands for it for other purposes.

To suffer gold and silver to fluctuate in value as commodities, would take from the coin of which it is made the intrinsic value given to it, provided the value of gold or silver were to recede; and, if it were to advance beyond its normal value, its functions of a measure would be disturbed.

The creation of money presupposes its endowment with certain functions.

1st. It must be a *legal tender*, that contracts may be adjusted and debts discharged.

2d. It must be an immutable *measure*, by which the computation of sums and payments may be determined.

3d. It must possess unchangeable value, that it may be a proper and fixed representative of wealth.

4th. It must be interchangeable without loss, for the accommodation of the public use.

5th. It must be made, by the highest authority, an absolute equivalent, to merit public confidence.

These functions and properties of money should be understood, or otherwise we may find difficulty in "regulating it."

The "purchasing power of money" should not be allowed to enter into any consideration affecting the law of its creation. It has nothing to do with it. It has misled the very best writers upon monetary finance.

Money cannot possess one value to-day, and another value to-morrow; and the metals of which coined money is made must possess an equal stability of value. It is only when the

coinage of one or the other metal is discontinued, or limited in quantity by law, or shorn of its legal-tender functions, that the metal so withdrawn from demand is lessened in value. The cost of its production cannot enter into the estimation of gold or silver, for the simple and conclusive reason that the cost of production is so variable that no practical estimation can be made, and no sane person will ever attempt the calculation of it. Neither the cost of commodities, nor the service of man, nor the debts of the nations, nor the constructed properties of the world, have any part in the adjustment or determination of the value of gold and silver. Gold and silver are simply the productions of the earth, utilized and chiefly employed for monetary uses, and thereby wrested from the contingencies of trade and barter.

The Mints of the Government coining money under authority determine the value of gold and silver, so long as these metals are employed as a monetary, circulating medium.

While I do not hold that it is one of the functions of money to determine the value of gold and silver, yet I do believe that the value of these metals must necessarily be determined by the sum of coin which can be made of it.

The introduction of alloy into coinage is for a purpose far beyond the covering of the cost of coining, or the speculation of the government, or the hardening of the coin to prevent abrasion and waste. It is chiefly to prevent the conversion of our coin into the coinage of other nations, and every civilized government has adopted the same means for its protection.

There can be no change in the value of gold and silver so long as the governments hold to the use of coin made of these metals for a circulating medium, unless there be a change in the quantity of gold and silver introduced into the coinage, without change of the standard value of the coin.

Were the silver coins dispensed with by legal demonetization, and the demand for silver for coinage to cease, the price of that metal must necessarily be determined by the same law of demand and supply as govern all other commodities.

No longer a metal of which money is made, it must find a price and depreciated value, more discouraging to the producer than marks the values of productions of common and extensive consumption, since silver would only be in demand for unimportant uses. It is certain that under such a condition—being no farther employed as a monetary medium—the incentive to its production would be lost.

If gold and silver, therefore, shall be retained, as the metals for monetary coinage, without limit, the value thereof cannot be changed, except by an increase or diminution of the amount put into each coin.

The continuance of the Government to employ these metals in the coinage of money presupposes that the coins made therefrom are a *legal tender in any sum*, and any law at variance with, or impairing its functions of a legal tender in any sum, must necessarily result in demonetization of the coin lacking this property.

The Government is now called upon to decide this matter. Money is a conventional unit—a transmissible token of value—a synonym of law, and without a legal tender property cannot be money, and without a fixed status it ceases to be a measure of value.

Laws which sustain and enforce contracts are necessary in all civilized governments. Of what use is such a law in the absence of a legal denominator by which debts, damages, service, and commodities may be measured and paid?

The measure of value, which Congress is only authorized to prescribe for its several monetary creations, should be as absolute and indisputable as the measures of length, weight, and quantity. The coinage of the nation, having upon its face the stamped and fixed value established by Congress, is money.

It is made so by *fiat* of the Government. Governmental legislation everywhere prescribes of what money shall consist, and the authority of a government in this cannot be disputed. Money is the fiat of sovereign power, which to deny is the denial of the powers of Congress to do that which it is especially chartered to perform by the Constitution.

The Government has wisely established for our understanding measures of weight, length and quantity that none dispute, and any repudiation of the legislative authority of the Government, to say what shall be money, is as reprehensible as an effort to make a yard less or more in length, or a bushel of less or more quantity, or a pound of less or more weight—all of which are legal measures and stand undisturbed.

What is the use of a measure for money without a representative of it in form?

If these premises be true, there can be nothing more reasonable than the conclusion arrived at below, viz :

1st. That gold bullion of standard fineness must bear a value co-equal with the coin it is capable of being made into, less the costs of conversion and the per cent. of seigniorage claimed by the Government.

2d. That gold coin of any nation cannot advance above, or fall below, its nominal or standard value, in the countries in which it is coined.

3d. That silver demonetized becomes a commodity, and whether coin or bullion, the value must depend upon *supply* and *demand*, as with other articles of commerce.

4th. That the loss must fall upon the metal, unsupported by the demand for coinage.

5th. That the decline in the value of silver is wholly attributable to its demonetization, in whole or in part, as the case may be. For instance, if fully remonetized, it would stand on a

par with gold, as 16 to 1, if that should become the quantitative relation. If limited in extent as coinage the coin, as well as the bullion, would fall below the standard. If carried further, and shorn of its legal-tender capacity, the fall would still be greater, and, if its coinage were discontinued by the nations, it would sink to the level of other commodities, being unsupported by any demand for monetary use.

From these reflections, it appears that the action of this Government in relation to silver coinage is of the utmost importance—a partial remonetizing of it, by any restrictive or limiting propositions, virtually leaves silver at the “mercy of the market,” and subject to continual fluctuations in value, and consequently reduces the coin, which may only in part be made of that metal, to all the vicissitudes of unreal and debased money. Indeed, it would not be money at all—simple bits of silver bullion. While, if fully remonetized, not only the bullion but the coinage, would become as permanently established in value as gold.

In what I shall submit to the consideration of your “Honorable Commission,” in these after pages, as my *answer* to the self-imposed questions of “What is money?” and “What is *honest money*?” your Honorable Commission will observe the grounds upon which the foregoing assumptions rest.

Question 4. What is the present general condition throughout the country of the trade, commercial, or financial calling or productive industry in which you are engaged?

Answer. My occupation has been that of mining for gold and silver during the last sixteen years. I do not consider that class of industry as generally remunerative. My own condition may be considered the general condition, success being exceptional. Among the causes which operate against a greater average of success, may be attributed the scarcity of money and the consequent high rate of interest demanded for its use.

The Pacific States, according to my observations, present very rare instances of prosperity, save and except the occupations of trading in, and of *loaning money*. Fifteen to sixty per cent. per annum for money implies a stringency of the money supply so absolute, that general prosperity will not (very naturally) be inferred.

Question 5. If possible, give some statistics showing the condition of such industry, compared with its condition at other periods.

Answer. Statistics are not conveniently attainable. The rate of interest for the use of money during the last twenty-seven years, has ranged from fifteen to eighty-four per cent. per annum, when employed in mining and manufacturing enterprises outside of San Francisco. There has been no period during my residence on this coast (twenty-seven years) sufficiently marked by continued prosperity to justify a special mention in these papers. Statistics, therefore, showing the condition of our people, financially, would not be of very great value from this section of the country; our exceptional cases of success are heralded with so much *eclat* that the world may readily infer how rarely they occur.

Question 6. If a depression exists, to what cause or causes do you attribute it?

Answer. The cause of the depression which now, and for so long a time has existed in these Pacific Coast States, is the insufficient supply of money, recently very considerably aggravated by the demonetization of silver.

Question 7. Is such depression due, in part, to a similar depression in some other country or countries, or to a general depression throughout the commercial world?

Answer. Like causes produce like results. Wherever money commands a higher rate of interest than the average per cent. of increase in production, the people have just cause to complain, and depression will be evident. Doubtless there are many sections of the United States suffering from the same causes of depression which afflict the Pacific Coast States. The inadequate supply of money is the *cause*; the lack of enterprise and employment of the laboring arms of the country is incident to it. So far as I am informed upon the subject, I believe the depression to be *general* in the United States.

Question 8. If to the latter, to which cause of world-wide or international application do you attribute such depression?

Answer. There is nothing which will so thoroughly shock Christendom as to touch the money of Christendom.

For centuries the money of the world has consisted of gold and silver. An effort to destroy one half of the world's money may not only alarm those who have money of the kind menaced, but drive into despair those who have it not, and who depend upon their labor for support. The effect of demonetizing silver is greater than the destruction of one half of the money of the civilized world. It reaches out, with a withering touch, to the commodities of the world, and while gold coin is worth no more than its standard value, commodities, and the service of man, and all properties, are made to shrink into accommodation with this new and unhappy condition of retrogression.

Still more: The disposition to hoard; to let lie idle in banks; to concentrate in a few hands, and to withdraw from circulation, is as natural as that fear stimulates caution, and pinching parsimony grows into avarice.

Were this scheme of demonetization of silver to succeed, the rate of interest that would be told for the use of money would sweep every debtor into bankruptcy, and subject all productions, even that of gold, to the avaricious behests of capital. Whoever hath done this thing has earned the world's anathema.

It is possible that England and Germany may have commenced to feel the effect of demonetizing silver, and, if there exists a depressed condition in those countries, it may in part be attributable to this cause.

The United States, not having silver in general circulation, have been affected by its fall, indirectly, and not sufficiently to afford an understanding of the enormity of the proposition.

WHAT ARE MEASURES OF VALUE?

All mathematical designations of a sum are measures of value.

In the United States the *dollar* (100 cents) is the cardinal measure of value, susceptible of a division into fractional parts, as the "half," "quarter," "twenty-cent," "dime," etc., and of advancing its multiple into designations of a larger sum.

The "dollar" and its multiple is, then, the radical measure of a value, as absolutely as a *yard* is the measure of *length*, the *pound* the measure of weight, or the *bushel* the measure of quantity.

By this measure do we calculate the value of commodities, properties, services, debts, etc.

By this measure do we estimate wealth, individual, corporate, and national.

By this measure do we compute all profits, all losses, and all damages.

Hence a *fixed measure of value* is requisite, and has been instituted for the convenient service of the people—varying from the measure of value adopted by other nations, in unimportant particulars.

This measure assists us to determine a sum as by a mathematical denominator, and would be valuable to us only for that service if we were left without a device or devices which actually represent values in themselves, equivalent to this monetary measure. For this purpose money has been instituted—endowed with functions which, in the nature of its varied uses, keep it constantly and reliably up to the measure it represents.

WHAT IS MONEY?

Money is an inflexible denominator, a symbol of a legal value, an expression of sovereignty, a conventional unit, a legal tender, a nominal equivalent, an immutable *quid pro quo*, a device of the governments, intended to fill with exactitude the measures of value legally instituted; and to fulfill, by virtue of its functions, the requirements of interchangeability, exchangeability and the payment of debts.

None but the supreme powers of the Government are capable of endowing money with the functions requisite to answer these demands.

Money must be an inflexible denominator, that contracts may be entered into, and stipulations may be made between parties, without the apprehension of a possible diminution or increase in the monetary consideration.

It is a symbol of legal value, because it is a lawful representative, which carries the statute upon its face.

It is an expression of sovereignty, because it is created by the highest power of the realm, and stamped with the seal of authority.

It must be a legal tender, that its acceptance for debt shall be compulsory, and not optional.

It must be a nominal equivalent, that it may be interchangeable without loss to any.

It must be an immutable *quid pro quo*, that commodities and all purchasable things may be readily exchanged for it, and as a vehicle of use, unlimited in its service.

It must be a conventional unit, that all may accept it without murmur or complaint, as by common favor, being just to all, and injurious to none.

Money must be *lawful, secure, and a legal tender*.

Money must be free from the tortures which attend commodities. It must be exempt from all the vicissitudes of barter.

Its standard must be unquestioned, its value and power undisputed, and its acceptance and usefulness unbridged by any limitations or restrictions whatever.

If more than one kind of money is created by the Government, the one must be the full equivalent of the other. Silver coin is not money if it be made subordinate to gold coin. Silver must be equal with gold.

Its standard of relation to gold must be determined, and made unalterable. The coinage of one must be made by law to fill the measure of value represented by the other, and each must be held the absolute equivalent of the other in monetary use.

Any legal discrimination between the two kinds of coinage, any function or property granted to the one and denied to the other, destroys the unity and infracts the law of its creation as money.

Coin or money, so shorn of any function or property possessed by the other, becomes absolutely demonetized, and reduced to all the contingencies of a commodity.

The law creating money makes money superior to commodities, in that it is made to fill an unalterable measure, and its value cannot fall below nor rise above the standard it is made to represent.

The issues of private or corporate banks have been sometimes called money, because voluntarily accepted and received in the discharge of debts and the common transactions of business, but such issues are not, and never were, money in the sense and quality which belong to the term. It is only in the consideration of its acceptance as a *substitute* that such issues found any

favor whatever; and the term "money" so widely misapplied. That is not money which is not a legal tender—made so by the highest authority.

Money must possess the statutory force to compel its acceptance for debt and the liquidation of damages. Considering that there is no power authorized to make or coin money of a legal-tender quality, save Congress, it is quite certain that attempts by corporations, or by States lacking this power, can only result in the production of a *quasi* convertible commodity, mischievous in its tendencies as it is illegal and clearly a usurpation of the functions of the Government.

The value of money must be fixed and immutable. It must not exceed, nor fall below the measure, or power, given to it.

The value or price of commodities may change continually, and thereby the purchasing power of money may be subject to very great alternations, but money *per se* remains at its fixed standard, and there is nothing in the price of commodities that can advance or reduce the value of a dollar above or below the standard given to it by law. The fiction, therefore, "that money changes in value according to its purchasing power," is no less delusive than that *other fiction* which declares that "the money supply of a country is the just measure of the property valuation of a country," both of which propositions seem to be a favorite thesis with some writers on finance. The unsoundness of the last proposition needs only a computation of the sum of taxes that it would be practicable to collect upon such an assessment, to discover itself.

Money, as an agency of trade, a servant of labor and property, an admitted medium of exchange, must be actual as well as apparent. This cannot be if its property of an equivalent or function of a tender is impaired in the least. Money is something more than *tokens*, the value of which are determined by weight, as bullion.

One government may take by weight the coinage of another. There are good reasons for so doing; but it were indeed a bad condition of the people if they were obliged to resort to the same measures for their protection.

Every government may, for the use of its own, make money superior to bullion, and regulate the value thereof, so that it shall be entirely acceptable to the people, for whose use it is made, and yet be very unprofitable to export.

Section 14, Revised Laws, relative to Mints and Assay Offices, says, "that the *gold coin* of the United States shall be a *one-dollar piece*, which at the standard weight of $25\frac{8}{10}$ grains shall be a unit of value; a *quarter-eagle*, or two-and-a-half-dollar piece; a *three-dollar piece*; a *half-eagle*, or five-dollar piece; an *eagle*, or ten-dollar piece; and a *double-eagle*, or twenty-dollar piece, which coins shall be a legal tender in all payments at their nominal value."

Section 15 says, "that silver coins of the United States shall be a *trade dollar*; a *half-dollar*, or fifty-cent piece; a *quarter-dollar*, or twenty-five-cent piece; and a *dime*, or ten-cent piece. And the weight of the trade dollar shall be 420 grains troy; the weight of the half-dollar shall be 12 grammes and one-half of a gramme; the quarter-dollar and the dime shall be, respectively, one-half and one-fifth of the weight of said half-dollar; and said coins shall be a legal tender at their nominal value, for any amount not exceeding five dollars in any one payment."

Here we have a law of the United States which establishes the standard of its coins, making the one a legal tender in any sum, and the other a legal tender "in any sum" *not exceeding five dollars*.

Here is the establishment of a standard without a status.

After determining the standard of the two kinds of coin, which it intended to make of equivalent value, Congress debases the value of silver coin, by limiting its legal tender capacity, thereby abridging its uses as money.

There seems to have been a misapprehension of what constituted money.

The legal tender property of money must be equal with the measure of value which is given to it. Its face must denote the standard of its equivalence.

Money must be a sensible representative of value. The inscription "one dollar" (for instance) stamped upon a coin, signifies—informs of—represents its value, as absolutely in an aggregated sum as in a single piece.

Any after qualification of the functions of its use is without the warrant of justice or good policy.

The *legal tender* is the special quality given to money to make it supreme, and to make its acceptance unquestionable. It cannot otherwise be made to fulfill the requirements of commercial and interchangeable uses.

All limitations and restrictions upon its powers must, therefore, be removed. Money is a measure of value, as a yard is the measure of length, but it is endowed with other properties and functions quite as important as its function of a measure. It is a nominal measure: it is a legal equivalent of the measure given; it is a legal and fixed representative of wealth; it is property raised above the contingencies of barter; it is the legal mandate of the Government and must pass in the exchange of property and for debts at the measure of its face; it must possess the function of a tender, that it may serve equally the Government and the people, the debtor and the creditor, the purchaser and the seller, the laborer and the employer, the taxpayer and the collector, etc. It cannot be capable of this service if its equivalence of value is unequal to its face or its nominal measure.

It is not money if one dollar and its multiple in any and all payments can be legally refused.

As a general proposition, money, made of both gold and silver, should carry in the coin of either the proportion of metal which shall make them equivalents, according to the quantitative standard agreed upon.

If contingencies arise which justify a departure from this rule, such as a desire on the part of Government to enforce a retention (for instance) of gold coin within its sovereign limits, or to obviate a too free export of it, the Government may discriminate in favor of its domestic policy, and make gold coin of less weight of gold than its face and quantitative relation to silver would imply.

This action, at the present time, seems more likely to occur in relation to gold, because the cost of its handling, transportation, and common request affords to it temporary preference; but when the standard of relation of the two metals shall be established, money of gold would be only preferable to silver for its carrying convenience, and that can be neutralized by the creation of a Governmental paper money, of equal purchasing power, still more convenient to carry than gold.

There may be an ample justification for reducing the weight of gold in our gold coin to meet the foregoing or any other important emergency.

The equivalent properties of money consist in part (when coined) of the intrinsic value of the metal it contains, and in part of its power of service as a tender.

Legal tender is the appurtenance which attaches to money, by the law of its creation; and it must be absolute and unquestionable. It is not necessary to be published upon the face of money. It is understood as the indisputable quality of an equivalent, to be paid and to be received equally, without question, and respected as the multipotent utterance of sovereign will.

The limitation of the legal tender power of the greenback seems to have been the cause which produced the difference of value between gold and the greenback currency. The demand for gold was the natural result of this limitation. It was a demand to meet an *exigency created by the very act of limitation* which caused the premium on gold for the last fourteen years. It was the cause of speculation in gold, and all its attending evils. It was the cause which led many of our citizens to draw deeds and contracts payable in gold. It was the primary cause of discrimination and preference for one kind of money over another.

The difference in the value of gold and silver coins, to-day, is the consequence of one coin being a legal tender for any sum, and the other a tender only to the sum of five dollars.

With this view of the question, is it not conclusive that any limitation, restriction, or legal discrimination in any monetary issue of the Government, should be regarded as unwise, impolitic, and unconstitutional?

The tender power of money is precisely what raises money above the level of commodities; shorn of this power, its inflexible measure is lost, its use as a commercial unit abridged, and as a denominator of constant value it is shamefully misnamed.

WHAT IS HONEST MONEY?

All money is honest money. Money, so called, which is not a legal tender in any and all sums, and acceptable for all commodities, dues, properties, and services, *is not money*, and it is a fraud upon the people to put it into circulation.

Gold coin is honest money, having the full functions of legal tender. Silver coin, reinstated as money, being a legal tender in any and all sums, would be honest money. Greenbacks, an issue of the Government, legal tender for all debts and dues at its face, would be honest money.

These classes of money would be honest:

1st. Because of a national decree which makes their acceptances compulsory for all debts and dues.

2d. Because the two first-named possess an intrinsic value, equal to the value of the bullion in each—legal tenders, and exchangeable at the Mints of the Government, at par, for its new coinage after abrasion and waste, without loss to the holder.

3d. The greenback (were it endowed with full legal tender power), because it would be the mandatory expression of the Government; the sovereign will, supported and upheld by all the properties of the nation, and being an instrument of convenient use, raised above distrust by its interchangeability for gold and silver, and convertibility into the interest-bearing bonds of the nation, or other securities.

4th. Because these three kinds of money are one, in the sense of its acceptability and use, within the limits of the nation, unattended with any demands which it is not made to answer, and a fit representative of the wealth of the nation, being exchangeable for its highest securities, and having a perfect money value.

5th. Because this honest money is made by the Government (and not farmed out to the jobbing corporations, less responsible), possessing an adequate intrinsic value in its coinage, and an indestructible security for its paper representations in the properties of the whole nation.

It is time that the people came to understand the difference between the money created by the Government and the *irresponsible issues* of banking incorporations. The only money we have ever had came to the people from the Government; none other is permitted to make money; hence, there has been very little *money, per se*, in circulation since the foundation of our Government. Congress failing in its duty to the people, of providing money, the capitalists

of the country were permitted to organize banks of issue, and emitted large sums upon a supposititious substratum of coin. Their notes so issued, were printed, "*payable on demand.*" The term "redemption" came into use, not from a redemption of their bills, but because of a *failure to redeem them*, and these bank issues and frequent failures have resulted in so much profit to these institutions that they have attempted to monopolize the monetary supply of the country.

The Act of Congress issuing the greenbacks alarmed these money powers greatly, and judging from the number of National Banks in existence, and the consequent raid upon the greenback, the attacks upon the Government credit, the demonetizing of silver, and various other measures, destructive alike of the credit of the Government and growing interests of the people, it may be inferred that the ambition of these bank *powers* are in a fair way of being gratified.

It is, therefore, very proper that the people should learn to distinguish between what is the real money of the Government—"honest money"—and that questionable contrivance of banking corporations which is so pertinaciously pushed forward as a substitute.

All of the loss by the failure of these private corporation banks has fallen upon the people—hence, the distrust of the people; and this very distrust and doubt, born of these private bank failures, is unwittingly turned against the Governmental issue of paper, as if it were irresponsible and unauthorized to say what shall constitute the money of the realm.

"Honest money" can only come from the Government, and even then the issue must be a legal tender in any and all sums, for any and all purposes of payment. Without this important property in money—though issued by the Government—it is neither honest money, nor money of account. Were the Government to issue paper money after the form of the usual bank notes, "*payable in coin on demand,*" it would not be "*honest money,*" because, like the banks, it would be making a promise which it were impossible to perform, and, therefore, false to the people, who do not require such pledge.

"Money of the United States," of different denominations, is all that is required upon its face. This, resting upon the law authorizing its creation, and providing for its use and interchangeability, would be *honest money* and *acceptable*. Banks would thus be forced to use only the legal tender—the honest money—of the Government, and the word "redemption" would cease to be used in connection with money affairs. Banks would become institutions for deposit and loan, and the Government will have severed its connection with them, and the cause of failures and of panics would no longer necessarily exist in the nation.

THE QUANTITATIVE RELATION OF GOLD AND SILVER.

The coining of money of gold and silver pre-supposes the establishment of a fixed quantitative relation of these metals. The Government may declare that sixteen pounds of silver shall be the equivalent of one pound of gold; but the Government, even, *cannot perpetuate that relation by any device whatever, except by the full, unrestricted, and unlimited monetization of the two metals.*

These metals, employed for monetary purposes, must be raised above the contingencies of a commodity, and the relation which each bears to the other can only be maintained, and the coinage of each kept up to its full monetary measure by a law which establishes their perfect equality.

The full and free monetization of silver, that is, the making of it into money—possessing all the functions of use given to gold coin, *will* establish the value of silver upon as permanent a basal foundation as gold.

Were the nations of the earth to adopt this method of settling this question, there would be none to complain of a redundancy of silver during the next hundred years, for the reason that silver money would become as absolutely the measure of value, and of wealth, as gold money.

To establish this desired equality and unity there must not be any governmental limitations of the quantity which may be coined, because that would result in leaving a remainder, surplus or balance, to be disposed of for other uses than money, and this balance, left unsupported by demand for monetary use, would necessarily fall upon the market, subject to the conditions of demand and supply, and alternate in value, as do other commodities.

The price of silver, made by dependence upon a market unsupported by demand for monetary use, would speedily show itself upon the estimation in which that coin would be held.

There must not be two markets for silver. It must have one unchanging value, and that must be estimated by the amount of coin it can be converted into *by coinage.*

The value of silver, established upon this principle, *determines* the price of it for uses in the arts, and is not more subject to mutation than coined money.

There must not be any restrictions placed upon the monetary functions of coined silver, because that would effect an abridgement of its use, and create an exigency of demand for gold, to supply the place that silver money, so debased, could not fill.

There being no legal discrimination between the coinage of gold and silver, their relative and interchangeable use would become permanently established, and the bullion of each would be rated at a valuation as inflexible as money.

We perceive that gold is not subject to mutations of value, simply because the price and value of that metal is raised above the price it would command for uses in the arts alone, by the

demand for it as a monetary medium, the value always understood to be the sum of coin it is capable of being converted into, less the cost of conversion, and the seigniorage of the Government.

The coinage of gold constitutes a money, unrestricted in its functions, and therefore unchanging in value; and the value is equally as constant for the bullion of gold.

It is, then, the monetization of the metals of gold and silver which raises them above the sphere of fluctuating demand or value, and *holds them constantly* to a fixed monetary standard, making the maintenance of a quantitative relation of these metals practicable.

IF THE GOVERNMENT CONTINUES THE DEMONETIZATION OF SILVER, WHAT WILL BE THE EFFECT UPON THE GOVERNED?

The demonetization of silver reduces the volume of money in a sum equal to the possibilities of its coinage if remonetized, and as the sum may be equal to our production, it follows that the country would be deprived of the use of thirty or forty millions of dollars per annum—say one half of the metallic, annual, monetary supply of the country. If the metallic money was all we had to depend upon, and the reduction of one half of it shall take place, it will be observed that the sum remaining in circulation would be so reduced that it could be easily cornered and controlled by any combination of moneyed men for that purpose. This done, the rate of interest would be greatly advanced—the values of all commodities, properties, and the price of labor would be greatly reduced. Those who possessed money would be greatly benefited, while the mass of the people—debtors, property-holders and laborers—would be greatly injured. The money powers would find their means increased by the *doubling of the purchasing power of their money*, while those possessed of property would suffer loss in equal ratio.

Legislation which shall produce these effects upon the people is unjust as well as impolitic, since it would favor those who were above the need of favor, and distress the greater number, who rely upon the Government to protect them from oppression.

Money counts as money, what its face implies; if it count less it is because of its being debased by a limitation of its functions, or by abrasion and waste. Of our present silver coinage we have to say, that as a dollar its measure is accurate, but in the sum of one hundred dollars it is neither a measure of one hundred dollars, nor an admitted equivalent in that sum. To call this coinage money is misusing the term to mislead the people.

Silver coin so limited in its functions, is deprived of the uses for which money is instituted. Let us observe its operation on the Pacific Coast. The newspaper publishers are obliged to receive the coin at par, for the printed papers, while they are debarred from paying in the same coin for the blank paper in quantity. Laborers are paid in silver coin at par, while they are legally estopped from paying the same coin for the rent of their houses or rooms, or any other necessity, where the cost is above five dollars. For all small-priced articles the merchant is obliged to receive this silver coin at par, while he is made to pay the debt he contracted in the purchase of the articles sold in gold coin.

We are permitted to purchase and pay for a pair of shoes in silver coin, but we cannot so pay for a pair of boots. A cheap vest may be paid for in silver, but a coat or a suit of clothes must be paid for in gold. We pay for a meal (if not too hungry) with silver, while, for a week's board, gold coin is demanded. We may pay for a slouched hat in silver, but, if having occasion to purchase two of them, or one of a better quality, we are obliged to change our silver, at a discount, for gold coin.

Five dollars in silver will purchase a ticket for passage to a certain distance upon the railroad; but, if we desire to go only to the next station beyond, we are required to pay in gold coin—although not more than twenty-five cents be added to the sum, as measured by "dollars" and "cents."

Five dollars seems to be *good money*, but five dollars and fifty cents, or any greater sum, because offered in one payment, is *bad money*, and not worth what our beneficent Government has stamped upon its face as the *true value*.

To "regulate the value" of money is quite opposite to the late act of the Government in debasing its silver coin. It seems to be a misapplication of the powers of Congress, to debase its monetary creations. It may withdraw it from circulation, or discontinue its use, but not debase it. If silver coin is good and valid money in the sum of five dollars, what shall depreciate its value when payment is offered in the sums of ten, twenty, forty, or one hundred dollars, or any larger sum? And if there is no difference in the intrinsic value of each one-dollar piece, to the number of one hundred or one hundred thousand dollars, what shall justify a refusal to receive it in that or any larger sum? The only justification which people assume to have is not the distrust of the true value of the coin, but the *inability to use*, because of the limitation of the sum in which it may be paid. This is the objection. A law unnecessary, and absolutely more annoying and mischievous in its tendencies than any other law of Congress made during our national existence.

The inconveniences of a silver coin, of limited legal tender, may have been sufficiently stated. Let us now proceed to show the impolicy of such an act:

First. If gold is made the only standard, we unnecessarily confine the operations of the country to the use of a very limited supply of money, absolutely inadequate to the demands of trade.

Second. The interest and principal of our national indebtedness must be paid in gold coin, (not to mention other indebtedness) which is more than three times the sum of our annual production and coinage.

Third. The rate of interest for the use of money must, of necessity, become greatly advanced.

Fourth. Properties of every description must incidentally suffer a great reduction in value; and, much of it being mortgaged, the mortgagees would find themselves insufficiently secured; while the debtor class would be placed under such a burden as would make it impossible for them to discharge their indebtedness.

Fifth. While money would in no sense advance in value, the decline in the value of commodities, properties, and labor would be so great that the purchasing power of money would be more than double. The masses of the people would become absolutely subject to and dependent upon the money powers of the country—a sorry dependence—a condition, certainly quite opposite to what the people desire, and certainly have not anticipated as the result of legislation.

Sixth. It would involve the employment of an army of men, in the occupation of shaving and discounting the debased coin and currency, indifferently circulating at whatever it would bring as a commodity, and who, by the very nature of their occupation, breed distrust and excite denunciation of the Government.

Seventh. It would result in an effort to compel the Government to redeem, not only the greenbacks in gold coin, but also the National Bank notes for which the Government stands pledged; and, to redeem these, the interest-bearing debt of the nation would be increased considerably more than the sum of these two kinds of paper money in circulation. In other words, it would have a tendency to enforce the Government to attempt the performance of an utter impossibility, for it is clearly impossible to obtain from any or all of the nations of the earth a sum in gold coin equal to a demand so enormous.

The establishment of a single gold standard would lessen very considerably the production of gold, in that silver being demonetized by this Government, other governments would be induced to take the same action in relation to it, and a *general demonetization* of silver would reduce that metal to all the contingencies of a commodity, and its depreciation, when demanded only for use in the arts, would be so great, that search or mining for silver would cease to be profitable or remunerative. Hence, the gold with which it is found associated (although generally estimated at about one-half) would not furnish a sufficient inducement to encourage a continuance of its production, except in very rare instances.

WHAT IS INFLATION?

The term inflation, as applied to money affairs, means a *redundancy of money*; certainly a condition which has never existed in the United States for one moment during its national life, and never can exist while the rate of interest for the use of money is held above two and a half per cent per annum.

The rate of interest charged for the use of money is the *inferential measure of the supply of it*.

England, France and Germany—countries possessing the largest accumulations—have supplied money for the use and support of their several industries at $2\frac{1}{2}$ and 3 per cent. per annum interest, for more than a century, and have been able to loan in large sums to other nations, without it ever having occurred to any of them that a condition of inflation of money existed.

Inflation, or a plethora of money, is claimed by some of our people to be hurtful to the interests of the country, because of the advance in the value of commodities, the increased cost of living, and the advanced price of labor.

May not these effects be questioned?

How is it with the people of the countries named? Are not commodities, living, and labor to be had at less cost in those countries where money is unquestionably abundant than in the United States, where we possess a meagre supply?

Are there any existing causes operating which make an abundant supply of money to foreign nations a blessing and so supplied to us a curse?

Can we not utilize and find employment for money at 3 per cent. per annum as advantageously as any other people?

If having money in this country as abundant as 3 per cent. per annum would imply, is there necessarily a condition of inflation?

Are we not, in productive and industrial pursuits, competing with England, France and Germany? and with all of our natural resources and industrial energy can we compete successfully with these powers without an equal supply of money and as low a rate of interest?

Is not the insufficient supply of money and the high rate of interest the distinct and underlying cause which prevents the people of this nation from occupying the front and foremost rank in productive, manufacturing and commercial prosperity?

The rate of interest being the measure of the supply of money, may we not ask if there can be a redundancy of it, where money commands from ten to sixty per cent. per annum?

Yet we hear it frequently declared, by those whose interests are promoted by the mainten-

ance of a *high rate of interest*, that "money is abundant!" "That the proposition to remonetize silver is a 'scheme of inflation!'"

Inflation, in the sense commonly used, refers to quantity of money, and not to description of money. We cannot justly declare that England is in a state of inflation—that she is cursed with a redundancy of money, and that her power and importance as a nation is abridged thereby.

On the other hand, were it not well for us if we could truthfully declare that the people of the United States were possessed of an equal monetary accumulation—that we were out of debt, and held as great a part of the world under obligations to pay us tribute and perpetually add to an already rotund exchequer?

There cannot be redundancy, nor inflation, nor plethora of money in a country like our own. Ours is so broad an empire, stored with such illimitable resources, occupied by a people possessing the most tremendous energy and enterprise, that we need feel no alarm at the possibilities of our achievements, under a wise and liberal monetary supply.

There may have been, in certain periods of the past, an inflation of individual and corporate credit, and a too great strain upon that credit may have resulted in disaster, but that has nothing whatever to do with the proper monetary provision of the Government.

A little reflection upon this subject will convince us that inflation is not a condition from which we are likely to suffer in the near future, and that none now use the term with proper understanding of it, save those whose selfishness obscures all comprehension of the public welfare.

THE CAUSES WHICH INDUCED ENGLAND TO EFFECT A GENERAL DEMONETIZATION OF SILVER.

English policy means *to lead* and to *mislead*. Whatever shall confound, distress, or overthrow any other government, England views with a satisfaction unspeakable. Whatever shall help to bind other nations to pay tribute to England is her crowning joy.

Whatever the conditions of other nations, English diplomacy and financial strategy is ever set to make them, soon or late, subject to England's imperious will, for in this lies the promise and hope of supremacy. To these ends the highest efforts of her statesmen are consecrated. Every book upon finance, every financial article of her press, every report of her Minister of the Exchequer, are framed to mislead the mind and apprehension of other peoples.

Her offspring and agents of her policy inhabit every land, quick to waken strife, side with treason, and sow distrust of every government (save their own) under which they may live; opposed to every proposition or measure which fails to conserve English interests.

In our own country these agents of English policy are multiplied by thousands. They stand upon every avenue of trade.

They teach the delusive doctrine that English finance is an established science, and that it, like an English watch, can be run in all countries alike.

They take no cognizance of the existing difference between a nation *out of debt* and possessing large accumulations of money, and a nation largely *in debt*, with no adequate means of payment.

They conveniently ignore the unequal financial status of the boy who starts out in life with a capital of *ten dollars*, and that of the mature man, already established, with his millions in bank. In short, the delusive thesis of English financial science, artfully presented, and not very often analyzed, misleads the American people beyond measure, and not unfrequently to oppose their own best interests. England is largely a creditor nation. She sometimes lends a helping hand to other nations, and lifts them temporarily out of financial strait, and with sweet patience waits her own time, and studies her opportunity when, for her own ends, she may let them drop heavily.

The demonetizing of silver, and the efforts which England put forth to carry the scheme through the Congress of the United States, may be considered the heaviest financial *drop* she has administered to her debtor nations during the period of her national existence.

It was a scheme, intended not only to affect the value of national securities, but also to deprive each debtor nation of one-half of its monetary resources for payment.

One thousand millions of United States bonds held by England, was something for England, if she could insure their payment, principal and interest, in gold. It would place this Government, financially, at the mercy of the merciless. England could propose to us, as she did once to Spain, that she would modify the terms of her monetary exactions on condition that we opened our ports to her manufactured productions, which, once done, would bind this nation in the payment of tribute to her forever. The control of the silver production of the United States, to be wholly manipulated by England, became a tempting financial item.

Our gold production being inadequate to the demand on us for interest alone—all mortgaged to England—and although doubled in the power of its purchase, would pay no more of our debts than before the demonetizing of silver, the situation would become distressing to us and profitable to them. Our silver bullion, our grain, our cotton, our wool, our wine, and all other things necessary to English life, production, and trade, must naturally find a market and a price such as our crippled condition would enforce and English rapacity reluctantly see fit to give.

This much as a financial achievement, but *not all* of the programme.

This nation, shorn of one-half of its monetary supply, its credit impaired, and its natural

life and activities paralyzed, would leave England master of the situation, and make English supremacy secure for another century.

If it were possible for this nation to exist after being drawn into the continuance of a scheme so calamitous to our peace and prosperity, the maintenance of it would scarcely repay the effort.

Certainly, other debtor nations, whose resources and productions are less than ours, have great need to look about them, lest they find existence a difficult condition to maintain.

Is it necessary to go into details of all the minor causes which induced England and Germany to demonetize silver? If so, it can be done; but the thought that these essays should be condensed, and that it is not always good policy to exhaust a subject, leaves me to conclude with the suggestions that the policy of England is especially calculated to advance the interests of England, regardless of consequences to other nations; that a financial contest has been waged against the United States ever since the establishment of this Government; that England has drained this people of their money as fast as it has been accumulated, and still holds them, as well as this Government, largely in its debt; that this condition would have been avoided had this nation been guided by a wise and true policy of its own; and that it is quite time for us to inaugurate a political system which shall be distinctive in its features of protection of American interests, open a wider field for industrial employment, and thoroughly fortify this Government against the machinations of all foreign powers.

CONGRESSIONAL REGARD FOR ENGLISH INTERESTS.

We would like the good opinion of the world, if it be not too expensive.

We do not believe that a *good opinion of us*, purchased at a cost of three hundred millions of dollars, is available to us for any sum whatever. It is generally understood that a nation employing a policy which serves its own with the highest benefit is enabled to command the respectful consideration of other nations, and that a nation that truckles to any other loses caste abroad and forfeits the confidence of its subjects at home.

The Government of England originates and adopts such policy internally and externally as serves with best effect to advance the interests of its own, and this without consulting the wishes or pecuniary interests of any other nation. The same may be said of France and Germany and other continental nations. But, the United States, ever without a true national policy, defers to other powers when a policy is proposed for it, and her statesmen ask: "What effect will it have upon England," etc., as though we were still subject to her imperious guidance, and as though they were lost in the troublesome mazes of doubt as to whether we were a nation striking for national life and existence, or a simple dependence of that voracious and far-reaching power.

Legislation on our part which contemplates the least surrender of what rightfully belongs to us is unworthy of us as a nation.

Instance the discussion in Congress upon the dual standard at its last session. When there arose men of acknowledged ability who opposed the measure simply because England held a large part of our bonded indebtedness, upon which it was expressly stipulated that the interest should be paid in coin—not gold coin alone, nor silver coin alone, but coin of the United States, and thereat urged that silver coin, which was a part of our money at the time of issue and contraction of the debt or the bond, and known to be so by the whole world, should be effectually demonetized; and who carried their argument so far from home, and so near to English interest as to declare that the whole bonded debt should of right be paid in "gold coin," and this, too, in the face of the saddest condition in our monetary affairs. The known fact that of gold and silver, combined, annually produced in the country there would not be found a sufficiency to pay the interest alone, and that if *their will* were to become the law, our entire annual production of gold would only pay about one-fourth of the interest annually falling due, and that the burden of our national indebtedness alone would be more than the nation could bear.

It would appear that foreign bondholders have most willing allies in the Congress of the United States, far more ready to serve a foreign interest than the interest of the nation and constituency they were sent there to represent.

The honor of the nation will stand unswayed if it pays in the moneys it promised, and this proposition, to pay our debts in gold and silver coin (whichever may be most convenient) may be maintained with far more honor and dignity than to yield to the demand for gold, and thereby largely increase her bonded debt, by the sale of bonds for gold, to meet the annually accruing interest.

It is significant of the character of our representatives, when we observe of some of them how strenuously they contend for a *decrease of our non-interest-paying debt*, and advocate an *increase of our interest-paying debt*.

If our people are apprehensive that we would be flooded with silver from England and Germany, in case we remonetize silver, we may find some comfort in the purchase of what we need beyond our production, at a discount upon its value, to coin into dollars, and pay it back to them as coin of the "United States," for any debts we may be called upon to discharge to the people of those countries. With forty million people, we can absorb four hundred millions or this silver money, and not feel it a heavy burden; and we can say to other nations that we like it well, and propose to pay our debts with it like christian people, and the sum of our debt is so considerable that the silver production of the world will not furnish us the needed sum.

We are mistaken if this policy, followed vigorously by us for a time, did not find England and Germany pressed into a remonetization of it, by their own people.

MISAPPREHENSIONS.

A misapprehension may be mentioned, and it is widespread—from Alaska to Florida: "That the supply of money doubled, would double the prices of commodities." The late rebellion occasioned a great advance in the price of commodities and properties, and these prices were attained before the increased issue of the national greenback currency. The issue of greenbacks had nothing to do with the advance in prices. On the contrary, the increase in the supply of money stimulated production, and reduced prices by competition. England, France, and Germany, denser populations than the United States, with more money, *per capita*, and larger accumulations, find employment for their laboring arms at less per day than we, and deliver to us their productions at less cost than we can produce the same articles, while the cost of living in those countries is less than in the United States.

Are there any who can cry out against inflation in England, Germany, and France?

Are there any who can deny that these nations have much more money, *per capita*, than we have?

Are there any who deny that the rate of interest in these countries is less than in the United States?

Does not this alone prove a more liberal supply of money?

They who declare that to double our money would double our property values, forget themselves, and lose sight of one important consideration, to wit: That a generous supply of money to a people stimulates them into activity, and activity means increased enterprises, and increased enterprises means competition, and competition means production at the lowest living rate, and production at the lowest living rate means a fair fight to supply the world, just as England has been doing by furnishing to her producing classes, money at three per cent. per annum for more than a hundred years, and grown to be the greatest manufacturing nation on the globe.

The money of a nation is the symbol of its power, the measure of its wealth, the vitalizing, circulating medium which, like the blood in human organisms, builds upon the bone and strengthens the tissues.

Is it wise for a nation to put a limit upon its power, or to retard its possible achievements? Can a people have too much strength, too much prosperity, too much honorable and happy employment? Shall not the nation be constant to itself?

STOP THE MONEY DRAIN.

The general productiveness of the domestic industry of a country, depending, as it does, upon the general efficiency of its laboring arms, is a matter which concerns the State; inasmuch that, if industry be not encouraged, upheld, and stimulated, it will not become generally efficient; or, if efficient, and unsupported by friendly legislation, will cease to remain so.

The labor of England is kept in a higher degree of efficiency than in any other country, because of the wise policy of England, first, in the provision of money at a low rate of interest, and second, the masterly activity of the Government to provide markets for her productions.

What England lacks in natural resources and supply is more than compensated by the activity of her people, the wisdom of her legislature, and the diplomacy of her statesmen. A condition of superior natural productiveness should be esteemed the most important adjunct to national success.

This the United States possess in an eminent degree. The condition which enables a people to purchase the raw material and turn it into superior manufactures, is attained by consummate study and the most rigorous appliances of art. This is the status of which England proudly boasts.

The latter condition is the result of the operations of mind over matter. The first is the condition incident to prolific natural productions, depending more upon the employment of muscle than mind.

What we import from other countries is not inspired by any tactics of mutuality in the exchange of commodities, and never should be, since the true science of government disallows it. In England it may be so, because English imports are of a character which only a more favored country can produce.

Such is not the case with our own country. We, for instance, sell our wool and cotton, and largely import the cloth and fabrics into which it is made, virtually admitting that England is the more favored country for manufacture, while we are the more favored in producing the raw material. It is for men of reflection in our country to determine if it be a necessary, prudent, or wise policy for us to circumscribe or limit our industrial energies to a simple production of the raw materials, instead of diversifying our employments, and accomplishing for ourselves what we have too long paid other nations to do for us.

England has set us an example which we have been too slow to follow. As early as 1749 England had reduced the rate of interest on loans to three (3) per cent. per annum. At that early period the Government had ascertained that the profits upon her manufactured productions enriched the nation much more rapidly than the loan of money at a higher rate of interest, and it is only necessary to read the statistics showing the increase of her manufactured productions to come to an understanding of the means by which she arrived at her present commercial

supremacy. I refer to the policy of England, as often as I have done, that my countrymen may be enabled to observe the utter insufficiency of the policy of our own Government, and to furnish an intimation of the course which we will be called upon to adopt, or admit our incapacity for self-government.

It may be charged, by the inconsiderate, that I lay too much stress upon the evils of importations, and perhaps some may oppose the measures recommended, because they would have too absolute a tendency to check them.

Men may point to the difference in our international exchanges, and say the sum is not marvelously large—not more than one hundred millions per annum! To which a sufficient reply may be given in stating that one hundred million dollars per annum—which, under our present system of doing business, is much more likely to increase than to diminish—is a sum of itself sufficient to sink the nation, if continued, in twenty (20) years. The prospect would be quite dark enough if we were confined to this difference of exchange; but that is not the most alarming part of the account. If we take into consideration the fact that the sum named is about double the sum of our production of the precious metals, we may readily perceive that, with that drain alone, the nation would be impoverished rapidly.

When we add sixty (60) millions interest, annually, to be discharged on our bonds in foreign hands, one hundred (100) millions interest and principal of our railroad securities, and another one hundred (100) millions, spent by our itinerant pilgrims to the *Holy Land*, and other interesting etceteras, the reflection is not amiss, if we strike for a reduction at the first-named sum, and continue our vigorous blows until we have routed the whole line.

That the English nation has been able to achieve so much of what makes a nation strong, thrifty, and dominant, under circumstances widely varying from us in natural productions, presents to us a lesson of incalculable importance, if there be spirit enough left in the people to profit by it.

Descendants of the same race—intelligent, inventive, energetic, and naturally ambitious—we may well question the causes which have so potently opposed our progress, and undermined the financial status of the nation.

To briefly summarize these causes, I may state that England's advantage is wrought from cheap labor, low rate of interest on money extensively employed in manufactures, cheap transportation, large monetary accommodation, and an internal and external policy consecrated to the service of English aggrandizement; whilst our own nation may be charged with entertaining a high appreciation of credit, an ambition to surpass the world in railroad construction, the maintenance of a high rate of interest, and consequent difficulty of engaging capital in manufactures; inadequate transportation; extravagant fondness for foreign toys; a policy which contemplates the elevation to place and position of individuals, rather than the advancement of the common interest; an indifferent monetary provision, unsupported by any principle or system of control; and a Congressional legislation seemingly uninspired by those lofty purposes which distinguish true statesmanship.

BRIEF SYNOPSIS OF A MONETARY SYSTEM.

When silver shall be fully remonetized by Congress, I will submit, through some Representative in that body, a carefully prepared monetary system, comprising the following essential provisions:

1st. The requirement that the entire gold and silver production of the country shall be coined into money of the United States, and that no part of our bullion product shall be permitted to leave the country.

2d. That the quantitative relation of gold and silver be determined by a standard adjusted with especial reference to the support of these two metals for monetary uses, as well as to make gold coin less desirable for export.

3d. That gold shall not be coined in pieces of less denominations of value than five dollars.

4th. That silver be coined principally into *dollars* of 412½ grains, the same as before demonetized, with fractions of "halves," "twenty cent," and "ten cent" pieces, and that a composite of nickel and other metals shall be used for lesser coins.

5th. That the nation shall issue, and be the source of, a *one only paper money*, in bills not less than five dollars legal tender, and possessed of all the functions of use which attach to the coined money of the nation, and to be an absolute equivalent of coined money.

6th. That the Government take upon itself the issue, regulation, and entire control of all of its monetary creations, and sever its connection with all banking institutions, and all private corporations.

7th. That the Treasury and Sub-Treasuries of the United States shall become the depositories of the gold and silver bullion product of the country, and the dispensing and issuing agencies of the money of the Government.

SAN FRANCISCO, December, 1876.

SILVER REMONETIZATION.

Speech of Col. H. S. Fitch before the National Labor Party.

An Eloquent and Convincing Argument—Need for more Money—Reasons Why Remonetization is Asked for—Unrestricted Coinage a Necessity—List of Resolutions Adopted.

At a meeting of the State Executive Committee of the National Labor party, held Thursday evening, the following resolutions were offered by Colonel Henry S. Fitch:

1st. *Resolved*, That the National Labor party of California, through its State Executive Committee, declares its approval of the efforts of Hon. J. P. Jones and other members in the Congress of the United States to effect a full remonetization of silver.

2d. *Resolved*, That all coinage of silver should be made by law a full and unlimited legal tender, and that there should be no lawful limitation or restriction of the sum that may be coined.

3d. *Resolved*, That the silver dollar shall contain 412½ grains of silver, of the American standard of fineness, and that silver coins of less value and denomination shall contain proportionate bullion value.

4th. *Resolved*, That the coinage capacity of the Mints of the United States should be increased to an extent that shall enable the Government to coin the entire annual production of the precious metals.

5th. *Resolved*, That every citizen of the United States should enjoy an equal advantage and facility in the conversion of bullion of silver and gold into coin through the national mints, and that the seigniorage and costs of such coinage should be restored to the government by law and fixed at a rate which shall cover the annual expenditure of the several mints of the nation.

COLONEL FITCH'S REMARKS.

Colonel Fitch addressed the committee in support of the foregoing resolutions as follows:

Mr. Chairman and Members of the State Executive Committee: I will not attempt at this time to present an exhaustive argument upon the subject of remonetizing silver, although I deem it one of the most important that can come before the American people for their consideration. The measure has some powerful and noble advocates in the Congress of the United States, and I deem it only necessary to present a concise and condensed statement of the views upon that great question entertained by men in this body who are prepared to sink all personal or local considerations in a discussion of a measure so important to the whole nation. Senator Jones has stood by this silver question and presented it in its various aspects with marked ability. He has discussed this question from a national standpoint, and not as a producer of the silver metal; and he, with those who stand upon the side of silver, do wisely for their country. In the contest soon to be had in Congress upon this subject it seems meet and proper that, while Eastern cities are giving expression of their support and favor to the bill for remonetization, the Pacific slope, and especially

SAN FRANCISCO, SHOULD NOT REMAIN SILENT.

Mr. Chairman: I need not state to you that, for eighty years preceding 1873, silver and gold had occupied in our national monetary provision a standard relation to each other, fixed upon a basis of 1 to 16. There never was shown during that period the least antagonism or conscious preference for one over the other. And it is somewhat of a revelation to us to arrive at an understanding of the cause or causes which underlie the demonetization of silver, and the consequent elevation of gold as a single standard for the money of the country. We have had in circulation gold and silver money, and, since 1861, a very excellent substitute known as Treasury notes. The interests of the country seemed prosperous until contraction of the greenback began under the remarkable statesmanship of Mr. McCulloch. No man among the enterprising or the toilers of the land asked the Government to contract its money volume, yet it has been fearfully contracted. When greenbacks and other paper substitutes for money had been reduced to about one-third of their volume, and the country had pleaded with President Grant and his merciless Secretary of the Treasury to stop any further withdrawal of the currency from circulation, it would seem that the Government must have understood that the people

DESIRED MORE MONEY, AND NOT LESS.

But the Government did not heed the demands nor the distresses of the people, and we feel like asking for a reason why the people's petitions were not heard. Governments of the people are supposed to respond to the wishes and interests of the people. How is it that this Republican Government ignored all claim of the toiling masses, and would not listen to the wail of distress that for years and years has been heard all over the country? Had the people not put down the rebellion with their treasure and their blood? Were not these, who sacrificed so much to maintain the Government, true to it? Why, then, was not the Government true to them? Why was it that measures of contraction were enforced unasked by the people? Why was it that the country awoke in 1874 to the discovery that Congress had demonetized the silver dollar in 1873, and enforced the future dependence of the country on gold as the only legal

money of the nation? Was it so abundant that a single standard of gold appeared practicable? Was it an act which the people desired? Did the country urge upon Congress this measure? I answer, no! emphatically. Then how was so mischievous a scheme carried through the Congress of the United States? I will tell you my opinion about it, and if my opinion does not suit you, because insufficiently explained, read what shall hereafter be said upon the question, if President Hayes dares to veto the bill to remonetize silver. We have, unfortunately, a power in the country greater than the Government! This power was always and is now inimical to the Government, and desires the subjugation of the people. It was begotten by the folly of the Government. It is

THE VICIOUS CHILD OF AVARICE

And governmental franchises and subsidies and large scheming, with little or no honesty to show it up. It was the Anglo-American gold and bond ring—a power that will overthrow all governments that do not overthrow it. It is an established power that never waits for the people to ask for the passage of a law. It seeks only to know that a law is necessary to the success of its schemes, and the means are furnished to make its passage secure. This is the power that has changed our non-interest bearing currency into interest-bearing bonds, this is the power that demands resumption, and this is the power that sought to paralyze the Government in that effort by the demonetization of silver.

If these powers have become so potent in the legislation of the country as to control it in their own interest, as they have done for the last sixteen years, what are we to expect of it now? With the President of the United States, and his Secretary of the Treasury, and his other Cabinet officers standing boldly against the public welfare and the will of the people, it would seem that the money powers "had made their election sure." Were it not for the appearance of a clear majority in both Houses of Congress in favor of remonetization of silver, we might well despair of securing any legislation in the interests of a patient and suffering people. In some degree encouraged by observing that this question of money is becoming better understood, and in the hope of adding something upon this great question which shall lighten the labor of its friends, I will state some of the reasons

WHY REMONETIZATION IS ASKED FOR.

The neglect to sustain silver in demand for monetary use must necessarily paralyze this nationally important industry, and close to the labor and enterprise of the country a broad and most valuable field of employment. To keep this field open forever to the laboring arms of our country is a question reaching beyond the measure of metal that may be obtained. It is a matter which the philanthropist and the statesman are called upon to consider, and unprincipled greed must go down before it. The national credit abroad does not demand that it shall be ignored. The national credit at home is nearly related to it, and I feel like declaring that a government which is strong at home is far more likely to command respect abroad, and that is all that a nation with any dignity left to it should seek under any circumstances. The mistake which this government has made seems to be that it craves a credit abroad and not respect, and the sooner a reverse of purpose takes place the better it will be for the country. The remonetization of silver is

NO SCHEME TO OVERREACH ANY ONE.

It is a demand of the people to have restored to them that of which they were fraudulently deprived by legislation instigated by an Anglo-American conspiracy. It means the reconstruction of one of the two great arms of national protection and defense, which had been surreptitiously stricken from the body politic. It means the utilization of American resources in response to American needs.

The people demand the remonetization of silver because it is one of the natural resources of the nation—one of the productions of American skill and labor, and as a resource of the nation should be utilized in its highest form of service.

They demand remonetization of silver because the support of this metal for monetary use forms, in general measure, the inducement for search after gold—with which it is generally found associated.

They demand remonetization of silver because it will double our metallic money supply, and supplement the volume as far as the production of this metal shall admit of.

They demand the remonetization of silver because we are largely a debtor nation, and it is our duty to utilize silver in all coin payments contracted for by the people and by the government.

Remonetization of silver is demanded because it is an important and essential step in the direction of the establishment of a monetary system, by this government, which shall put an end to further monetary vicissitudes, and which will secure to the United States the control of not only the silver; but the gold of the civilized world.

Remonetization of silver is demanded because, to the extent of its coinage, it will operate to

PREVENT THE EXPORT OF GOLD.

Remonetization is urged because the United States can distribute \$500,000,000 of it at home, without inconvenience to its citizens.

Remonetization of silver is asked for, because it is the natural money of the laboring

classes, and it should be distributed to them, of a quality for use and payment equal to the best that can be coined.

It is asked for, because it belongs to the United States to meet a blow intended to cripple its resources, and to make this country henceforth dependent upon the British Government for its money supply; and it is high time that our Government asserted some of the powers which belong to it.

Remonetization is asked as the simplest amendment of the fraud of demonetization, stealthily carried through Congress without the least justification or notice to the people.

Remonetization is asked, because it is a scandalous waste of good material for money, further permitted to be manipulated by England as bullion.

Remonetization of silver is asked, because it adds to the possibility of resumption within the ensuing decade.

Remonetization is urged, because the payment of interest was contracted to be made in "coin"—payment in gold alone is inequitable, extortionate, and impossible.

Remonetization of silver is necessary, that the value of the two metals—gold and silver—shall continue a co-relation which has rested for centuries, and with which the people are satisfied.

REMONETIZATION OF SILVER IS NECESSARY,

because all debts that have been contracted in our country were measured by the aggregate of gold and silver coin, and not by the sum of gold coin alone.

These debts were created under the double standard, and not the single standard. We ask the remonetization of silver, because we desire to discover who were in the plot to demonetize it, and who, by treason and by shameful purchase, opposed the

BILL TO REMONETIZE IT.

Remonetization of silver by the United States will neutralize the effect of German demonetization, and with two more acts of our Government, to be considered hereafter, will bring all Europe to beseech a convention and yield to any terms of general monetization of silver we may ask.

What these acts shall be enters not as a part of the question of remonetization. They follow it, and will develop their potential powers as soon as they shall be named. We ask that the law of silver coinage shall be so changed that no more quarters shall be coined, and that the fractional coins shall be of denominations of a multiple of ten, in accordance with our decimal system, to wit: 10, 20, and 50-cent and dollar pieces, and that these coins shall be money—a legal tender in any sum of payment. It is reasonable that, if twenty men are allowed to make payment of these fractional coins to one man in sums of \$5 each, he who receives them shall be permitted to pay them out again, without loss or hindrance of law. Indeed, a governmental limitation of the sum of coin which may be made in any one payment may be regarded as a lively and most vexatious fraud upon the people, and a disgraceful act on the part of the government.

THESE ARE SOME OF THE REASONS

why remonetization of silver is asked. I now propose to add to the reflections already given to this body my views upon the laws under which money must be coined to make it money. The creation of money presupposes its endowment with certain functions:

First. Money must be a legal tender, that contracts may be adjusted and debts discharged.

Second. It must possess unchanging value, that it may be a proper and fixed representative of wealth.

Third. It must be an immutable measure by which the computation of sums and payments may be determined.

Fourth. It must be interchangeable without loss for the accommodation of the public use.

Fifth. It must be made, by the highest authority, an absolute equivalent, to merit public confidence.

These functions and properties of money must be understood, or otherwise the Government will find difficulty in regulating it.

THE "PURCHASING POWER OF MONEY"

Cannot properly enter into any consideration touching the law of its creation. It has nothing to do with it. Yet it has misled the most famous writers upon monetary finance. Money must not possess one value to-day and another value to-morrow, and the metals of which coined money is made must possess an equal stability of value. This stability of value of metals can only be obtained by full and unrestricted monetization of them.

It is only when the coinage of the one or the other is discontinued or restricted by law, or shorn of its legal tender power, that the metal so withdrawn from demand is lessened in value. Neither the cost of commodities, nor the voice of man, nor the debts of the nations, nor the constructed properties of the world have any part in the adjustment or determination of the value of gold and silver. Gold and silver are simply the productions of the earth, by long and general consent utilized and chiefly employed for monetary uses, and thereby wrested from the contingencies of trade and barter, while in demand for monetary use. There cannot be any change in the value of gold and silver, so long as governments hold to the unrestricted use of

coin made of these metals for a circulating medium, save and except when less or more metal is put into the coinage of a country without change of the nominal or representative value of the coin. Were silver to be remonetized, and gold and silver to continue to be metals for coinage without limit or restriction, the value thereof cannot be changed except as I have stated, by an increase or diminution of the amount of metal put into each coin.

COIN NOT POSSESSING FULL LEGAL-TENDER POWER

Cannot be money; and without the fixed status which the legal tender, and unrestricted coinage, presupposes, it ceases to be a measure of value.

Monetization of silver is understood to be the legal conversion of silver into money. That cannot be money which can be legally refused in payment of a debt. It follows, therefore, that money must be lawful, secure, and a legal tender without limit, otherwise it cannot be money. Silver coin cannot be money if it be made subordinate to gold coin. Silver money must be the equivalent in law, and in all the powers of its use, with gold money; and if this quality cannot be given to silver money, remonetization of silver becomes a misnomer and a cheat. With a few words, explanatory of the necessity of coining silver without any restriction whatever touching the quantity that may be coined, and I have done. I have intimated that the standard of money must be unquestioned, its value and power undisputed, and its acceptance and usefulness unbridged by any limitations or restrictions whatever. It will not do for this Government to establish a standard for silver money, without proper provision for the maintenance of its status. Suppose, for instance, that the Government monetizes silver by a law that shall permit of the coinage of only \$5,000,000 per annum; it would fix by law the standard of silver—that is to say, 412½ grains to the dollar—900 fine, with the Government stamp of “one dollar.” This would be the standard of the silver dollar. But this action alone would not suitably support the standard; on the contrary, such a law for the remonetization of silver

WOULD BE FOLLOWED BY A DISASTROUS DECLINE

In the bullion value of silver, which would soon infract the coin value. But if the Government enact a law for the remonetization of silver which shall permit of the coinage of *all that metal which shall be presented for coinage*, the value of the bullion of silver would become fixed and stated by the sum of dollars it was capable of being coined into, less the cost of conversion and the seigniorage of the Government. This done, and silver, whether bullion or coin, would become established in a one unvarying value, and hold to it as inflexibly as gold.

A further explanation may be given, in supposing that, with \$5,000,000 a year demand for silver for coinage, the price of silver would be enhanced above the price it would command without this requisition; but with this only demand for coinage, there would fall upon the market for sale for other uses, say \$30,000,000 per annum. Partial remonetization would not support the value of the \$30,000,000 uncalled for, therefore, silver would be left to the mercy of the market, and never being worth as much for uses in the arts (except when there exists a demand for all of it for coinage), it

WOULD CONTINUALLY FLUCTUATE,

And become subject to all the vicissitudes of property. But with a demand for silver for coinage which shall embrace the *entire production* of that metal, its value would become fixed as the metal of gold, and occupy a status of intrinsic stability which metals can only attain to by a law for unlimited and unrestricted use for coinage. This demand for all that could be produced for coinage, would make money of this metal as sensible a representative of value as can be conceived of, and would put an end at once to British scheming for the control of our gold and silver bullion.

With this explanation of the necessity for unrestricted coinage of silver, it leaves me to conclude with the expression of the hope that silver shall be remonetized without any limitation of its power of use, or restriction of the quantity that may be coined; for surely it will not be money if one dollar and its multiple in any and all payments can be legally refused.

LET THERE BE NO COMPROMISES

Upon this silver question. Silver coin cannot be money if it be made subordinate to gold coin; and the friends of silver remonetization in Congress must not yield to any trick of the gold and bond ring of a limiting or restricting character.

THE SILVER DOLLAR.

The Absurdity of Limiting its Legal Tender Power.

President Hayes' Position on the Silver Question—We should Legislate for Our Own Country, and not for Foreign Nations.

Letter of Col. H. S. Fitch, taken from the San Francisco Chronicle.

The President recommends the addition of the silver dollar to the coins authorized by law, with a “limited legal tender power” and a “proper restriction” of the sum which shall be coined.

This may be regarded as a two-edged proposition to prevent the remonetization of silver. Seemingly, the President is in favor of restoring the silver dollar; but, upon examination of his recommendation, it will be plain enough to thinking minds that he stands with Sherman, McCulloch, and the bond ring, and don't mean remonetization at all. Let us tear this thin veil from before the eyes of those who mistake the Presidential utterings for wise and prudent suggestions.

First. The President should know that there was no limitation of the legal tender power of the dollar of our fathers.

Second. He should know that there was no law restricting the sum of silver coinage.

Third. His Excellency should know that any limitations of power or restriction whatever put upon silver coin, which is not put upon gold coin, infracts the law making it equivalent for gold, and that such coinage would not be like the coin demonetized—the old dollar—which was a full legal tender.

Fourth. That any law authorizing the coinage of silver into money, which changes the value of the silver dollar from what it was before it was demonetized, renders such coin of no avail in the payment of contracts made previous to the time of demonetizing the old dollar.

Fifth. The President of the United States is doubtless a debtor, for these singular propositions, to John Sherman, Secretary of the Treasury, who ignores all law upon this great question.

Permit me, Mr. Editor, to present what seems to me

A COMMON SENSE VIEW OF THIS SUBJECT.

First. It is proposed to coin silver—into what, if not into money? Does remonetization mean anything else? If it does, we had better coin a new word which shall be better understood.

Second. When two metals of different value are monetized by coinage, what is required to be done? Adjust the quantitative relation of the two metals, of course, and then make each into money. Money is the measure of a value fixed by law—not depending upon the materials of which it is made. It must be lawful, secure, and a legal tender. The legal tender power of money, of different materials, makes it coequal in service, and consequently equivalent, one kind for the other. Not having this power, it cannot be money, and any issue so made is but a substitute and a fraud in its very nature. Does the President propose to continue these fraudulent transactions?

Again, if the President will take the trouble to examine further he will find that the Government may declare sixteen pounds of silver shall be the equivalent of one pound of gold; but that the Government even cannot perpetuate that relation by any device whatever, except by full, unrestricted and

UNLIMITED MONETIZATION

Of the two metals. These metals employed for monetary purposes *must* be raised above the contingencies of a commodity; and the relation which each bears to the other can only be maintained and the coinage of each kept up to its full monetary measure, by a law which establishes their perfect equality in the field of use. Is it possible that the President does not know the effect of limiting the powers of a tender? Is he not aware that any limitation or restriction in the law creating a monetary medium, deprives the issue of its fixed money value? Does he not comprehend the fact that any impediment to its use is practically a demonetization of it? Why then this recommendation of the President?

WHY NOT COME OUT SQUARELY

Against the coinage of silver for use as money? Does he suppose the people so ignorant and desperately stupid that they cannot see through the sham—the trick—which his recommendation involves?

Again, I would ask, for whom does he propose this limited tender silver coin? He intimates that it would facilitate resumption. What! The government to coin simple bits of silver into small tokens—valuable and marketable only by weight—a scourged commodity, the price of which would be daily quoted from the London Stock Board? This commodity to be utilized in the work of resumption of specie payments? Who does the President suppose so stupid as to admit such an issue to the claim of specie? What kind of a redemption of the government notes would that kind of coin imply? Would not repudiation of these government notes be vastly more honorable? There is supposed to be about \$350,000,000 in greenbacks in circulation and about the same sum in national bank notes.

IF RESUMPTION MEANS ANYTHING,

It means the cancellation of these vast sums. What, then, does the President mean by "proper restriction of the coinage of silver?"

Surely, the holders of these notes must be hard pressed indeed to give up the greenback substitutes for money (as they are because of their limited legal tender), which passes in *any sum* for nearly all payments, and receive a coin in exchange therefor, which, because of *more* detrimental limitations, could not answer to their use as well, and which, because of a restriction in sum that might be coined, should answer to no support of its bullion value.

Are not the citizens of the United States ready to declare against legislation of such a

character, and against a Machiavellian administration so pernicious. There is but one course to pursue properly: That is to coin all the silver bullion that can be obtained into money.

LEGISLATE FOR OUR OWN COUNTRY,

And not for England. Permit no more commodity money or questionable substitute for money to be issued either through the Government or through banks. Make all monetary creations good for what their face implies. Have in circulation only the money of the Government of the United States. Endow the various kinds with equal power of purchase and of payment, and exchangeability will follow as a consequence that cannot be questioned. Is it proper to attempt to restrict the sum of a monetary supply for a nation? Shall we say that the United States shall be restricted to the accumulation of a given sum, and that the people must stop further accumulations? How ridiculous the question. Yet restriction of the sum is advocated by the President and his sapient Secretary of the Treasury (if it be made of silver) with the seriousness of men who really believed that a people could become too prosperous and accumulate too much of wealth in money.

Has the President to be instructed upon these questions? Has he not considered the potentiality of the words "legal tender" as applied to money?

Does he not know, that in all the history of legislation upon the globe, no instance is shown of a limitation of the legal tender power of money (coin or paper) which did not destroy it for monetary use? The substance, then, of the President's recommendation, is to

MONETIZE THE SILVER COIN AND THEN DEMONETIZE IT

By tacking upon the law limitations and restrictions which shall make it useless to the people. Is it not significant of the President's allegiance with money powers, and his complicity in the nefarious schemes to contract the money volume of the nation, whereby, not only the money, but also a vast proportion of the property of the country may become concentrated in the hands of an arrogant, oppressive, oligarchic few? The proposition of the President relating either to "silver" or "resumption," cannot possibly be sustained by any common-sense logic from whatever source.

Permit me to call the attention of thinking men to the position I have herein taken concerning this question of monetizing silver, and to challenge Secretary Sherman or any other man in England or America to a refutation of the simple propositions I have made.

Respectfully,

HENRY S. FITCH.

San Francisco, December 6, 1877.

THE SILVER BILL.

Correspondence in relation to the Silver Bill, which lately became a law:

SAN FRANCISCO, February 16th, 1878.

Col. Henry S. Fitch—Dear Sir: Enclosed find Silver Bill, as it has just passed the United States Senate. If not too much occupied, would be glad to have your views of it, to be presented and read before the State Executive Committee of the National Labor Party of California.

Very Respectfully,

A. B. PAUL,

Chairman State Ex. Committee.

FULL TEXT OF THE SILVER BILL.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

Section 1. That there shall be coined at the several mints of the United States, silver dollars of the weight of 412½ grains Troy, of standard silver, as provided in the Act of January 18, 1837, on which shall be the devices and superscriptions provided by said Act, which coin, together with all silver dollars heretofore coined by the United States, of like weight and fineness, shall be a legal tender at their nominal value for all debts and dues, public and private, except where otherwise expressed and stipulated in the contract; and the Secretary of the Treasury is authorized and directed to purchase from time to time silver bullion, at the market price thereof, not less than \$2,000,000 worth per month, nor more than \$4,000,000 per month, and cause the same to be coined monthly, as fast as so purchased, into dollars; and a sum sufficient to carry out the foregoing provisions of this Act is hereby appropriated out of any money in the Treasury not otherwise appropriated; and any gain or seignorage arising from this coinage shall be accounted for, and paid into the Treasury as provided under existing laws relative to the subsidiary coinage; provided that the amount of money at any one time invested in such silver bullion, exclusive of such resulting coin, shall not exceed \$5,000,000; and provided further, that nothing in this Act shall be construed to authorize the payment in silver of certificates of deposit issued under the provisions of section 254 of the Revised Statutes.

Sec. 2. All Acts and parts of Acts inconsistent with the provisions of this Act are hereby repealed.

Sec. 3. That, immediately after the passage of this Act, the President shall invite the governments of the countries composing the Latin Union, so called, and such other European

nations as he may deem advisable, to join the United States in a conference, to adopt a common ratio between gold and silver, for the purpose of establishing internationally the use of bi-metallic money, and securing a fixity of relative value between these metals. Such conference to be held at such place in Europe or in the United States, at some time within six months, as may be mutually agreed upon by the Executives of the governments so invited, or when any three of them shall have signified their willingness to unite in the same. The President shall, by and with the advice and consent of the Senate, appoint three Commissioners, who shall attend such conference on behalf of the United States, and shall report the doings thereof to the President, who shall transmit the same to Congress. The said Commissioners shall receive the sum of \$2,500, and their reasonable expenses, to be approved by the Secretary of State. The amount necessary to pay such compensation and expenses, is hereby appropriated out of any money in the Treasury not otherwise appropriated.

SEC. 4. That any holder of coin authorized by this Act may deposit the same with the Treasurer or any Assistant Treasurer of the United States, in sums not less than \$10, and receive therefor certificates of not less than \$10 each, corresponding with the denominations of United States notes. The coin deposited for or representing the certificates, shall be retained in the Treasury for the payment of the same on demand. The said certificates shall be receivable for customs, taxes, and all public dues, and when so received, may be re-issued.

CHAIRMAN STATE EXECUTIVE COMMITTEE, }
NATIONAL LABOR PARTY. }

Dear Sir:—Your note, inclosing text of Silver Bill is received. I have to answer, that it is *one short step*, but not a bold and far-reaching stride in the direction of what is required to be done to make silver coin the equivalent of gold coin.

1st. The words, "except where otherwise expressed and stipulated in the contract," in Section 1, were better out of the bill, because they invite the opponents of silver to specify gold payments in contracts of agreement whenever possible. Silver coin, a full legal tender money, made to occupy a correlation to gold coin, becomes thereby barred from use in a wide field where contracts may be resorted to.

2nd. The clause in the same section, "authorizing the Secretary of the Treasury to purchase from time to time silver bullion, at the market price," could have been improved, by permission of free coinage, and by permission to deposit bullion in the mints and sub-treasuries of the Government and to draw in exchange for it the value, less the cost of coinage, in full legal tender greenback money.

The words "not otherwise appropriated," may be found to occupy an unfortunate place in the bill, if Mr. Sherman's indifference shall fail to find an unappropriated balance in the treasury.

The proviso, concluding the section, "that nothing in this Act shall be construed to authorize the payment in silver, of certificates of deposit issued under the provisions of section 254 of the Revised Statutes," means something that restricts the use of silver. Not having the statute referred to at hand, I cannot show to what extent that restriction may reach.

Section 3 of the bill before me says: "that immediately after the passage of this Act, the President shall invite the governments of other countries, composing the Latin Union, and such other European nations as he may deem advisable, to join a conference, to adopt a common ratio between gold and silver, for the purpose of establishing internationally the use of a bi-metallic money, and securing a fixity of relative value between these metals."

I believe it exceedingly unwise to ask for such a conference, in the very bill which moneztizes silver.

It is as much as to declare that we are ready, if foreign powers recommend it, to "take down our flag," and to follow their suggestions. It discloses a truckling subserviency to foreign ideas, and a weak resolution to stand by the interests of our own country.

4th. Of section 4 I have to say—the permission to deposit silver coin and draw Treasury certificates therefor, will doubtless result in much convenience to those who deal in large amounts of silver, and for that service is to be commended. But these certificates are a "promise to pay," or *redeemable* in silver coin, and while they are made a legal tender, they *are not money*. This device continues the method and practice of making a distinction in money, and until the people shall better understand this question, will prevent the creation and issue of an absolute paper money. Had Congress enacted a law making a paper money, not dependent upon redemption in one, or any kind of money, it would have the place of the certificates, for either gold or silver, and nothing could arise to make one kind of money preferred to another, except in the matter of convenience of handling, and this improved paper money would at all times answer such a call.

I regard any law for the creation of money, that leaves a loophole for preference, discrimination or distinction to creep in, as defective and susceptible of profitable amendment.

The restriction of the sum of silver dollars that may be coined per month is not wise, because it may possibly leave a balance uncalled for, for coinage purposes. This balance finding no demand for monetary use, must be disposed of at reduced rates, to the injury of the bullion value of the silver dollars.

It is right that the coinage department of the Government be made self-sustaining, by suit-

able and proper charges for the coinage of the gold and silver bullion into money. But it is not right, nor just to the producers of these metals, to set a price upon them, quoted by sales in the English market, under a law of that nation which has demonetized one of these metals.

Under the bill before me, the Government is authorized to *purchase silver*, and coin a limited sum, monthly. This proposition savors too much of the character of a manufacturing speculation on the part of the Government, to meet with approval. It does not comport with the dignity of the Government. *Gold*, one of the metals of which coined money is made, is admitted to coinage without cost or charge to the holder.

Silver, one of the metals of which coined money is made, is by law made the *subject of barter*, and speculative effort—the Government unwisely discriminating between the two metals, and abrogating the clearly established usages of the past—denying to the producers and holders of silver the right and privilege accorded to the producers and holders of gold.

If the Government introduces and maintains this inequality of the metals, it cannot expect the people to do otherwise. The Senate of the United States have done a partial work in the law remonetizing silver—illustrative of a *very strong prejudice* against silver for monetary uses—or a very *limited* understanding of the laws necessary to make silver coin acceptable money.

My objection to Senator Booth's amendment to the bill lies in its making the silver certificates a legal tender for customs and public dues only.

Silver coined and exchanged for these certificates under this limit of tender, results in confining the silver coin, as well as these certificates, within the control of the Treasury Department, when silver coin and the certificates that represent it should be of equal tender power, and subject to as wide a range of use as gold coin. If Senator Booth's amendment has been correctly reported, his certificates are barred for all uses as money, in trade between man and man. This is clearly a fault on the part of Senator Booth's amendment, to omit to make these silver certificates a legal tender for all private debts as well as for public dues. In degree, these certificates bear the relation to silver coin that legal tender National Bank notes bear to greenbacks—in greater degree objectionable, because shorn of a power of use in a wider range of demand. This looks very much like an act to remonetize silver, and open a way to enable the Secretary of the Treasury or the banks to keep it out of circulation among the people, by converting it into these certificates.

The bill, with all its shortcomings and defects, was probably the best that could be done by Congress at the present time, and furnishes to the people the promise of more and better legislation in their behalf in the future. Had the bill provided for mint coinage capacity to the full extent of the production of the precious metals, and ordered coinage as fast as the metals should be offered, the contingency of having money in the Treasury to buy silver to coin would have been avoided.

THE CO-RELATION OF GOLD AND SILVER.

How to Restrain the Exportation of Gold.—Protection of American Interests the True American Policy.—Advance in the Value of Gold; the True Method of Sustaining the Double Standard.—Dollars of Silver, 412½ Grains; Dollars of Gold, 24 Grains.—A Scheme of Illimitable Advantage to the Nation.

By Col. Henry S. Fitch.

"There is nothing so successful as success." To *break the center* of an enemy's column proves more disastrous than to *turn its flank*. The Government of the United States has been engaged in a financial contest continually, since the Declaration of Independence; and the struggle has been attended by many disasters, with never a victory to record. It has been *outgenerated* in every financial manœuvre, and forced to retreat, with great loss, from every attack made upon it.

Is it not time to adopt a different method of procedure? May it not be wise to exhibit a spirit of less forbearance, and, for once in a century, become aggressive? May it not be good policy to resort to such strategic devices as our *enemies practice*, and end the contest at once and forever? Is it not advisable that the Government put some of its financial leaders upon the retired list, and officer the State with men of courage, resource, and invention—men of mental strategy and craft, to cope with and overthrow the common enemy—men who can forge, like Jove, a lightning-bolt, and send it to the marrow of a plot against the common welfare, whenever such service shall be required for the protection of American interests—men whose hate of foreign intrigue in our affairs is built upon their very bones, and whose souls abhor all reliance or dependence upon foreign powers? May it not be practicable, and is it not vastly desirable, that the people of the United States announce a new Bill of Rights—a new Declaration of Independence—a new charter for liberty—which, among other things, shall commit this Government to a most vigorous and hostile opposition to the creation of all foreign credits, and unmistakably ally itself to the policy of reconstructing our credit *at home* upon a broader, more liberal, and far more comprehensive basis?

Measures of importance to the national welfare may be stated by a citizen (however humble) in a Republic, without the charge of and impertinence; I will proceed to suggest to

the Government that an attack be made upon the *center* of the foreign financial column, and that it be broken at whatever cost, and that its forces be routed utterly. Let those who fear earnest work keep themselves conveniently distant from the battle-field. To drop metaphor, and to explain clearly the methods of advantage open to this nation, and by which it can secure a financial victory over those foreign mercenaries who have so persistently harrowed it, I will say:

That it is the monetization of the precious metals, under the coinage laws of each Government, which determines their value to each Government. That demonetization of either metal infracts the value of the metal, so cast from monetary use, in the States only where its use as money is discontinued. That Governments may make money of whatsoever metal they please, and that the *legal tender* given to its coinage or paper money is the power which renders it sovereign in use.

Holding these views to be true, and believing them impregnable, may not this nation, or the Government of any other nation, *advance* the value of either monetized metal, by putting less weight, or degree of fineness, into each coin, *without loss* to the Government, and sometimes with very considerable advantage to its exchequer? Consulting well-established precedents, and urged by exigencies of uncommon importance to the United States, I propose that Congress, by law, *advance the value of gold bullion, say five per cent.*, in the form of gold coinage which shall require, say *24 grains of gold, 900 fine, to be put into our gold coin dollars.* At present, our laws require 25 8-10 grains of gold, 900 fine, to be put into a gold dollar. The device presented is simple, and has many advantages to recommend it. Indeed, it may be confidently asserted that no law passed by Congress, within the last century, can be compared with this measure, in legitimate effects to benefit the nation.

The proposition is, to monetize silver by a Congressional enactment, which shall admit of the coinage of our entire production of that metal, at the option of the holders or producers, into money, at the rate of 412½ grains, 900 fine, to a dollar. Thus we will reinstate silver coin, and consequently silver bullion, to the status of value and use which existed before demonetization in 1873, and which was in force at and during the period of contracting the present bonded indebtedness of the United States.

By such an act, the Government will return to the policy of guarding and properly protecting its interests—forgotten and scandalously ignored in 1873 under the material blandishments of Mr. Ernest Seyd, the English emissary sent to this country to capture the American Congress, and whose efforts were attended with a success not less remarkably to his credit than it was disastrous, shameful, and degrading to the nation.

Lest Congress shall forget what really constitutes money, it may be well to remind it of the necessity of making silver coin not only a full and unlimited legal tender, and entirely *unrestricted* in the sum that may be coined; for it is by this equality of function with gold coin that it becomes of use, and it is by unrestricted sums that may be made of it, that its standard of equivalence with gold can be maintained, or the fixed quantitative relation of the two metals made practicable.

This Government may yield, if necessary, to a demand for readjustment of the quantitative relation between the two metals, and the possible necessity for a wider separation of their coinage values has not escaped the attention of the writer of these pages. Nor has he neglected to provide a practicable method of accomplishing this end without injury to these metals for monetary uses or the interests of the Government and people.

If England and Germany (creditor nations) become fractious, and insist that the ratio shall stand at 17 or 18 of silver to 1 of gold, this essay is intended to show in what manner such a status may be attained and their wishes accommodated, without any injury whatever to this nation.

This will develop a plan, for, acceding to these foreign demands, possibly new and somewhat startling, but nevertheless worthy the attention of thinking minds. It will accede to the change of the present ratio—*not by depreciating silver*, as these powers so earnestly desire—but *by appreciating gold*.

If it be necessary, quotations can be made of their own logic in support of the method. There are several sides to a triangle.

By the monetization of silver, as recommended, we will utilize our silver production in the highest form of its service to us, *without loss*, and we may, if we please (adopting the propositions herein set forth), *let gold dance for awhile*, or mount to the top of the obelisk, if a demand for it shall carry it there. As this proposition touching a reduction of the quantity of gold required for each gold dollar, and a re-coinage of coin of that metal is new, so far as the writer is aware, it may be well to name some of the considerations which are thought to recommend it:

1st. Gold, so advanced in value by this nation, would, to the extent of its accumulation at this time in the United States, be worth just as much more than it is now held to be worth, as the lessened number of grains would be worth convertible into the new gold coinage, and, to which extent and per cent. the nation would become enriched. If five per cent. were fixed upon as the rate of nominal advance, then the gold in our country would be correspondingly increased in value to us.

2d. All after-production of gold would be worth in *gold dollars*, say, five per cent. more than if the present status of quantity in our gold coin were continued.

3d. This advance in the value of gold, coupled with the remonetization of silver, on the basis of $412\frac{1}{2}$ grains to the dollar, would be very likely to settle permanently the value of the two metals, and greatly stimulate the industry and enterprise employed in their production, and establish and keep perpetually open a *field for labor* of the greatest importance to the country.

4th. Silver, fully remonetized as proposed, would furnish to the nation a volume of "coin" very desirable to provide, whereby the nation may fulfil the *letter of its "promise,"* of which it has been pertinaciously reminded during some years past, and place the Government upon a plane of monetary stability very gratifying, considering the limited supply of gold and the considerable sum of coin it is called upon semi-annually to provide. Foreign holders of our bonds and other securities need not complain of our employment of silver coin in the cancellation of our indebtedness containing the same number of grains of silver which it contained when "coin" payments were promised, especially after we have adjusted the standard of relation of the two metals, as proposed.

The Governments of England and Germany put up a very considerable conspiracy to "bear" silver. The Government of the United States should check their nefarious work by "bulling" gold. This is the compensating process, too long neglected by this nation.

Our own citizens can have no cause of complaint against this form of adjustment, because dollars of silver or dollars of gold would be *full dollars* to them.

Persons having occasion to make remittances of coin to foreign countries cannot be greatly injured, for the reason that the relation between gold and silver would be measured by the ratio of value and distance of equivalence which the London market demand for it—five per cent. advance of the one, or five per cent. discount on the other, *are equivalents in adjustment.*

5th. Were the Government to authorize the coinage of gold dollars containing 2.4 grains, or 1 8/10 grains less of gold than exists in its coinage at the present time, the new coin must become as popular and useful to us as that now existing; because it would properly represent under our laws the unit of a value, and all the functions of use which attaches to other coinage. The intrinsic or bullion value of gold would of necessity be equal (as it is now) with the gold coin it was capable of being converted into by coinage; and, if it was worth such value at the mints of the United States in any lawful money of the Government, it could not reasonably be objected to by its citizens.

6th. That gold coin containing but 24 grains, 900 fine to the dollar, would *not be as valuable for export,* I take great delight in admitting; and it is possible that the people, when they arrive at an understanding of this fact, and how happily its retention is made to serve the common welfare, will stand by the method and enforce its adoption.

There is one point that the public should understand in connection with this proposition, viz., If the Government pays, under its coinage laws, one dollar in gold coin, or other lawful money, for 24 grains of gold, 900 fine, this metal becomes the representative of money in the sum a given quantity of gold is capable of being coined into; and 24 grains of gold becomes intrinsically worth one dollar.

7th. Before proceeding to explain the further benefit which this system promises upon domestic and foreign trade, I will refer briefly to the suggestions of the Gold Ring, which urges that silver dollars shall contain 420 or 430 grains, 900 fine, of silver. Before silver was demonetized it stood firmly in quantitative relation to gold as 16 to 1, as before stated.

When silver became demonetized—that is, when its use by this nation as *money was discontinued*—the bullion value of silver declined, as was natural, and only then were the people brought to suspect it of unreliability as a standard of money. Now, if silver be again remonetized by this Government at the original allowance of $412\frac{1}{2}$ grains to the dollar, certainly silver bullion, in our country at least, must again advance to a value corresponding very nearly to the sum of silver coin it is capable of making at the legal rate of allowance. At this rate of $412\frac{1}{2}$ grains, the country would have the advantage of no after disturbance. But if, as the Gold Ring desire, 420 or 430 grains were made to constitute a silver dollar, silver bullion would become permanently decreased in value, so long as this rate was continued under our coinage laws, in no sense serving the nation with advantage, and leaving to the manipulators, still, the possibility of effecting a further decline, if desirable to them, which they would be more likely to do, finding this nation ready to yield to them now. It is for Congress to consider whether, if the concessions asked for by this gold ring be acceded to, it would not aid the combination in an effort to make a still further and more disastrous reduction in the value of silver, and possibly drive it from monetary use altogether. It is the gold standard these mercenarys want, for objects which our Government should have realized long ago.

Let us suppose, however, that this Government were to coin silver at say 430 grains for dollars, and that other nations, more wise, were to refuse to depreciate their silver coinage and hold to their present status, the position the United States would occupy would be not at all enviable, since it would have fixed a money rate for silver dollars which on account of an increased demand and added value must demonetize its silver coinage and revert it back to the field of barter and speculation. It could no longer be money, because its bullion value (430 grains) would be more than the face of its coinage implies for export, and leave us again stranded upon the barren shore of a one only gold standard. There is a peril in this scheme of the Anglo-American Gold and Bond Ring which it were well for Congress to comprehend. It does not seem to occur to many of our statesmen that gold or silver coin

exported ceases to be treated as *money* on leaving our ports. Our coin, however beautiful to the eye or valuable to us as money, is valued only for the bullion it contains when it leaves our shores, and it becomes as much the subject of barter as wine, wool, or wheat, in all foreign countries. Worse still, when it leaves our shores its destiny is *cremation*. The fair form of the Goddess of Liberty, and our feathered emblem of Freedom, are incontinently smothered in the melting-pots of some Magian Prince, and our imaged messengers of gold and silver return to us no more forever.

I have thus touched upon the question of silver remonetization, now under consideration in the Congress of the United States, because of the relation it bears to gold coinage, and the laws which affect the bullion value of the money metals. Both being fully monetized, both would become subject to the same law regulating their intrinsic or bullion value. And now to the main proposition.

8th. The effect upon our foreign trade, by advancing the value of gold, or by decreasing the number of grains of gold in our gold coinage, is of very great importance to consider. Our productions and manufactures, sold in foreign countries for gold, would have their values enhanced at least five per cent., by reason of the ability to convert foreign gold coins into our own coinage, at a profit to the importer thereof. While it would require some time to bring about a condition of exchange in favor of this country, its ultimate accomplishment would be certain, and more speedily attained than by any other known method. Our people would be more careful in contracting foreign debts, where gold was demanded in payment, necessarily operating to check undue importations. Foreigners visiting our country, and others providing balances in this country, would cease the purchase of exchange, and deal in gold, for the profit afforded them by conversion into our coinage. Foreign purchasers of our great staples, and other commodities, would at once perceive the advantage to them of providing foreign gold, and the conversion of it into our national money, with which to make payments. Many methods of profit to foreigners, by the per cent. of advance offered by this plan, would help to swell the grand aggregate of our gold accumulation.

This a threefold advantage would ensue to this Government and people. It would tend to a rapid and vast accumulation of gold, create a greater demand for our productions, and effect a decided diminution in the sum of our importations.

This may be considered a brief statement of the computable effects of the system; but the effects upon the nation, of becoming the absolute masters of the situation, holding the control of the precious metals of the world, and becoming at once the dictating power of the financial policy which shall obtain at home and abroad, and all the attending advantages of such a condition, are beyond calculation, and only necessary to hint at, in this essay. A Government which can accomplish so much for the best interests of the State, by the passage of *one act of legislation*, should give to this proposition its careful examination and study, and act with promptness, if adoption of the plan is deemed advisable. It is for the Government to consider its powers and its true policy in this matter. The Government must perceive that an act on its part which will make gold worth five per cent. more to its people than it is held to be worth to the people of other nations, would most speedily solve this money question and turn it in our favor.

The desire of the country is conceded to be the accumulation of money—gold money—although it may be substituted by paper money as a circulating medium, and left at rest in banks or in the Treasury of the United States. But till now the way has not been made plain for the accomplishment of so desirable a result. The desire of the country has been to bring about a balance of trade in our favor; but our enormous foreign debts, our extravagant imports, and our utter imbecility and impotency, as a Government, to parry the eternal side-thrusts of foreign mercenaries, have carried a solid column of disasters against us, and defeated and disappointed our reasonable demands.

To-day the masses are occupying the position of bond-slaves to foreign powers, and stand uneasily and unhappily on the verge of a revolt. There are some who will declare that foreign nations would protest against so patent an innovation upon the schemes and customs so long enforced by them, without demur from anyone. Well, suppose these foreign nations do protest? This nation can afford to listen to their murmurs with polite condescension (if it has any dignity left to it), and the reply may be suitable and proper, that the United States embraces a wide expanse of territory, that it possesses the most illimitable resources for production and manufacture, that our population already reaches 45,000,000, that it is understood that the Government was in duty bound to guard its own interests, and to protect its own people, and that if it has failed in the performance of its duty to its own in the past, it must not be construed as a surrender of its rights as one of the great nations of the earth; that its people had of late bestowed some attention to the subject of finance, and that it had determined to pay some heed to the demands of the people; further, that it had discovered that it owes to foreign influence, chiefly, the *demonetization of silver*, which effected not only distress, but pecuniary loss upon the people, and considerably jeopardised the financial provision and credit of the Government, and that after great and most careful deliberation, it had come to the conclusion that *it could afford* to advance the price of gold, *inasmuch as it cost the Government nothing to do so*, and that it had been ascertained that the advantages to it and to the people of the United States were absolutely incalculable.

Right here, I may be excused if I introduce to the readers of this little pamphlet, for the better illustration of my subject, two eminent dignitaries—Mr. "Johnny Bull" and "Brother Jonathan," and record some things of a supposed colloquy between them, in the event of a project of this Government to advance the price of gold :

Johnny Bull—"But your Government owes me vast sums in bonds, and your railroad and other corporations a still larger sum, on which, I have made the calculation to be paid in gold."

Jonathan—"Yes, Mr. Bull, I admit it with very great shame and mortification, I O U a very considerable sum which I propose to pay in dollars and cents, according to contract. I shall be provided with fifty millions a year of silver coin, which 'coin' I suppose you will not object to, since it is so 'stipulated in the bond.' My crops of cotton, wool, and wheat will be considerable, and the exchange which will be drawn against the export of these commodities will be payable in your own coinage, against which you are not likely to raise an objection. Possibly some of our gold coin may be paid to you, but if you don't consider it profitable to recoin into your 'sovereigns,' you may return them to my country, where they pass at par for everything. We will have an abundant supply of good, sound, national paper money, which will be made the equivalent of our gold and silver coin, and I *guess* we will be enabled, in course of time, to pay you off. My Government has never attempted to dictate to yours concerning the form, or kind of money you institute for the convenience of your people, and it is expected that your government will abstain from interference with mine, in such matters."

Mr. Bull—"But, Jonathan, our standard is gold, and we neither want your silver, except by weight, nor your national paper money, except at a discount."

Jonathan—"I am aware of your desire, Mr. Bull ; your habit has always been to take our gold and silver coin by weight, whenever it landed in Great Britain. It is neither our wish nor expectation to change your habit in that respect now. There is nothing in the purposes of my financial advisers intended to obstruct you in your peculiar mode of doing business. You are not asked to take either our gold, silver, or paper money—made especially to suit my own people—if it is not for your interest to do so. Your sharpest financiers have said that 'silver has only depreciated, as compared with gold'—that comparable with the world's commodities, the value of silver is unchanged.' If this be so, then gold must have advanced, or silver and the world's commodities have declined in value."

"If gold has advanced, then we are justified in our project of adaptation to its advanced status. If silver and commodities have only declined, then it can be no loss to you if we pay you in our commodities at a price regulated by the ratio of decline. I do not believe the logic of your financiers is true or at all reliable, but accept it as you would have us do, to suit the purposes and interests of my country. Your financiers, like 'Mark Twain's Jumping Frog of Calaveras,' are too heavily handicapped to manifest a lively apprehension of the question—they are evidently too well fed, to see clearly the mistake of their position, otherwise they would have discovered that the announcement of unchangeability of the value of silver with value of commodities amounts to a declaration that silver is more stable in value than gold, and should naturally and rationally constitute the standard, and that gold, the more *variable metal*, is the metal to be carved into a shape and condition conformable with the truer standard. You, Mr. Bull, want the United States to continue the depreciation of silver and property, and to help you hold gold steady. You will excuse me if I am led to act somewhat independently in this matter. Our young brood of financial chicks have pecked through the flimsy, sophistical shell of this gold standard business, and perceive that it is within the province and power of the Government to arrest 'the wreck of matter and the crash of worlds,' by entering boldly into competition with you for gold, and to *bid for it by the measure of a silver dollar of 412½ grains*. I believe that in that manner we shall be enabled to arrest the decline in silver and all other commodities, and profit as you have done, by speculating a little in gold. How like you the idea, Mr. Bull?"

Johnny Bull—"If you advance the price of gold, by putting less in your coinage, I shall have the same thing done for my 'sovereigns'—what then would become of the policy to be pursued by you?"

Jonathan (complacently)—"I do not propose to tell you all the secrets of my thoughts upon this subject, but this I will say—that if you make the advance, as you promise, it will gratify my people very much. They are considerable producers of that metal, and will be glad to observe your appreciation of it *frequently*. I will assure you, Mr. Bull, that you will find my people quite lively in all such speculations. They have calculated very accurately the disposition of your subjects, and will repeat the experiment on you, as often as you approach to our bid for it. We intend, having found that we can well afford it, to pay *five per cent. more for gold* than any nation on earth, and henceforth, to take a hand in this gold contest, and see what will come of it. For various reasons, we have quite too long neglected it."

Mr. Bull—"But, Jonathan, do you not perceive that this mad project of yours would tend to draw an undue proportion of the gold of the world to you, and that other nations would not stand it?"

Jonathan—"That is exactly the purpose of my second crop of financiers."

Mr. Bull (quite conciliatory)—"Jonathan, you are expected to remember that a very close relationship exists between us, I am regarded as your honored progenitor, and such injury as you contemplate the infliction upon me, at least, would be rank ingratitude and unnatural."

Jonathan (assuming a sternness and dignity unlike him for many years)—“Our memory, Mr. Bull, has many times seemed at fault, greatly to our damage. But, sir, I remember the traditional relationship, and that in our youthful dependence upon you we were made to earn all that we ever received at your hands. When we arrived at the age of ‘twenty-one’, we cast off our cables from the ‘island home,’ and started life on our own account. You, Mr. Bull, objected to our independent effort, and put us to great privation and hardship in the defence of our rights and our lives. We succeeded more by our own courage and powers of endurance than by your paternal clemency. By various arts and methods you have stricken our commerce, obstructed our peaceful enterprises, laid waste our properties and honest accumulations. You have made demands on us unnatural and unjust; you have made war upon us; you have conspired to stir our people to insurrection, and urged them and assisted them in armed revolution; you have tried to crush our manufactures by flooding us with your goods; you have continued a financial and most aggravating war upon our interests for 99 years; you have instigated crises and panics to crush our enterprises in every decade of our national life; you have actually invaded our legislative halls, and purchased a disloyal support of your schemes against our welfare.”

“We have a vivid recollection of your paternal regard, and propose to award to it every consideration of favor that it has earned. We have a lengthy account and record of what your paternal love has cost us. We intend to compel a return of that which can be computed by figures. We will carry through this scheme, not only for the monetizing of silver, but also for the recoinage of gold, and we will henceforth hold a strong hand in the control of the precious metals of the world.”

Mr. Bull—“Will you not meet us in an international convention and adjust these questions?”

Jonathan—“We will first remonetize silver. You and your German cousin will find your schemes opposed, and we expect, if a call be made for such a convention as you name, you and your cousin will find it convenient to be absent. You will find in time that we mean business. When we shall have profited by the adoption of a wise monetary system—when our monetary accumulations shall have satisfied us, and our losses have been in reasonable degree restored to us—when you shall be willing to receive a fair proposition from us, and act upon it with alacrity and in good faith, you will find the United States just and perhaps generous.”

Mr. Bull (excited)—“We will show you, sir, that the British Lion—”

Jonathan (interrupting)—“Mr. Bull, your British Lion has been so very long domiciled in Great Britain, and our experience of his prowess and ferocity so thoroughly tested, we feel but little apprehension of the further damage of this animal to us. We find *but one* animal on earth to which my subjects temporarily yield the right of domain when coming within the compass of his eye, and that is *our grizzly bear*.”

The controversy between these two high dignitaries closed with the usual ceremony, each seemingly entertaining for the other an equal affection. Brother Jonathan leaves the scene soliloquizing:

“Money of Gold—The King.

“Money of Silver—The Queen.

“Money of Paper—The Protector and Sovereign Representative of Property and Labor, constituting a triune measure of value, each independent of the other, harmonious in service and accordant in use.”

“The Positive, Negative and Passive—The Trinity of Condition.

“Phosphates, Nitrates and Carbonates—The Trinity which supports animal life.

“Motion, Life, Sensation—The Trinity of Nature.

“Love, Will, Wisdom—The Trinity of Man.” And Jonathan’s scientific lucubrations become no more audible.

I have declared in several speeches upon the remonetization of silver that two more acts of Congress were necessary to bring all Europe to beseech a convention for the adjustment of this metal-money question, and to dispose foreign powers to yield to any terms of general monetization of silver that we may ask. I have not before stated the nature of these potential acts, but propose to do so now.

It is well understood that “human sagacity, aggravated by human want or necessity, seizes first on the nearest natural assistant.” The nearest natural assistant to silver is *gold*. It is its natural ally and main dependence. When one shall be attacked, the other must be brought to its support.

Thus it follows, when silver is attacked, and made sick by divorcement from its natural counterpart and protector, it is right to urge that monetization shall restore silver to her queenly place and dignity—that gold, the metal for the time preferred, shall be advanced so far in value, or, otherwise, diminished in quantity to each gold dollar, that the relation between it and silver may be equitably adjusted, and harmony again restored to the imperial household. This is the principle which I would have obtain, in an act of Congress, tending to the permanent establishment of the *double standard*. The other proposition referred to as very desirable is the enactment of a law by Congress, requiring that all contracts and stipulations for payment of money consideration shall be drawn *payable in lawful money of the United States*—otherwise to be considered by law invalid and non-collectable. This proposition is especially significant and proper, in view of the course which some of the Pacific Coast States saw fit to pursue

during our struggle to maintain our national existence, some sixteen years ago, and is peculiarly appropriate at this time, to teach the bank ring in New York and elsewhere that their threats to vitiate a wise law of the Government by reducing their business to a *gold basis*, by contract, will not be permitted by a power duly authorized to regulate the value and functions of its monetary creations.

To those of my countrymen who desire the welfare and happiness of the people of the United States, and who believe that the Government should inaugurate a financial policy calculated to render this nation absolutely independent of all foreign aid, and thoroughly fortify it against the machinations of all foreign powers, I ask to read this essay, and especially to deliberate upon the following queries:

1. Is a dual metallic money desirable?
2. If desirable, what shall be its quantitative relation?
3. If relation be changed, shall silver be depreciated by increase of grains per dollar, or shall gold be appreciated by requiring less weight of gold per dollar?
4. Is it not better to *increase* than to *reduce* the metallic accumulations and capital of the country?
5. Will not monetization of silver at 412½ grains per dollar be equivalent to an increase in the value of silver bullion five per cent.?
6. Will not gold coinage of 24 grains per dollar increase the bullion value of gold five per cent.?
7. Will not adjustment of relation, consisting of grains of each as designated, constitute a gain of ten per cent. to our metallic money capacity?
8. Would such adjustment add to, or diminish the bullion value of each metal, whether or not required for exports?
9. What effect will such adjustment (as named) have on domestic money supply?
10. What effect on production of the precious metals?
11. What effect on our internal commerce?
12. What effect on importations?
13. What effect on exportations?
14. What effect on payment of foreign obligations?
15. What effect upon our credit at home and abroad?
16. Would other nations advance gold to correspond to our advance?
17. Would it be sound policy to continue competition for control of gold; if not, why?
18. Would it be desirable for this Government to refuse a conventional agreement in relation to the metals?
19. Will not the plan proposed secure to us absolute independence from foreign nations if persisted in?
20. Can we possibly attain to such favored condition by other known or better process?
21. Is it desirable to restrain the export of gold?
22. Can the drain of gold be stopped by other or better method?

There is far more of import in this measure than relates to the adjustment of the silver problems. It is a measure pregnant with beneficent results to government and people. Look to it without prejudice, and for once declare that the reign of British financial tyranny shall end its dominion over the American people. Light again the thoughtful fires of a second revolt against British avarice. Permit the rays of a brighter philosophy to beam upon our effort, and the true courage of an independent nation may again assert itself, and find un baffled sway in a land entirely free. Consider these propositions; ponder upon these questions. To reason well emphasises a good intent, and facilitates action in the right direction. The insolent demands of a mercenary oligarchy—the indefinite ideas of the unthinking mass—the iniquitous teachings of our so-called political economists; the increasing crimes, committed by men in exalted positions—the disturbances of social order—the invasions of *might against right*—the wrongs, the wretchedness, the wide-spread distress, all together forming an evil so widely prevalent, that life is put to shame, and solemnly appeals to the philanthropic sentiment of a higher and truer statesmanship than that which marks our late history. If there be virtue in a line of thought which vibrates on the side of American interests, let it appear with unmistakable purpose at the very door of our second century.

THE CENTRAL AND SOUTHERN PACIFIC RAILROADS, AND THEIR BENEFIT TO THE STATE.

BY THOMAS B. GARDNER.

So accustomed are we to great changes in our social and political experiences, that we fail fully to appreciate the magnitude of what may be termed revolutions, or more properly speaking, the fruition of full development into tangible realities of the ideas of former centuries. Three centuries ago, an Italian of comparative obscurity dreamed, as it were, of the adaptation of steam for propelling purposes upon the sea. A crude application opened the door and furnished an incentive to further experiment, and to-day his vision has assumed colossal propor-

tions, as the navies and merchant marine of the world demonstrate. The dream of Watt is realized in the operation of millions of looms in thousands of mills, and machinery the world over testifies to the grandeur of this materialized vision of a boy. Still again, in our day, we see a further adaptation of this agency to the use of mankind in the development of the resources of continents by means of railroads. Still another potent agency, a fitting companion that by its side, traversing the earth, co-operates in the work performed by steam in the progress of civilization. The vision of Franklin puts Puck at a discount, and instead of encircling the earth in forty minutes, we have done the work in as many seconds. These powerful instrumentalities have been developing into their present proportions for over three centuries, but to the nineteenth century the future historian and political economist will refer as emphatically the heroic epoch in the world's career.

TO THE RAILROAD

We are more indebted than to any other instrumentality for the enormous contributions to the material prosperity of nations that the present generation is witnessing. Yet strange and irreconcilable as it may appear to the thinking mind, the value of this element of prosperity is not yet appreciated as it should be. For the first introduction of rails, we look to Great Britain in 1672. These were constructed of wood, and were used for the development of the coal properties at Newcastle. In 1738 iron rails were substituted, and here was the initiatory step towards the present consummation of our railroad system; and it will be seen that wherever railroads have been constructed, it has been mainly for the purpose of developing the latent resources of a country. The first application of steam for locomotion in America was in 1782, which was merely experimental. In 1812, locomotives were introduced in England. In 1825, the first railroad was constructed in New England, and, in 1829, the first locomotive was imported from Great Britain, which served as a model for our manufacturers. In 1830, the construction of locomotives began in earnest in this country. Thus for years Great Britain took the lead in this branch of industry. To-day, in the United States, we have five times the length of railroad as has Great Britain. Such is our remarkable progress.

THE TRANS-CONTINENTAL

Series of America are among the wonders of the present age. When Mr. Benton, in 1849, suggested the idea of connecting the Atlantic and Pacific, he little dreamed of the magnitude of the proposition, nor did any of his compeers appreciate the rapidity with which the thought would be made practical. The preliminaries to the inauguration of the enterprise are familiar to us all. Simultaneously with the discovery of gold in California, came the thought of rapid communication with the Pacific Coast; but it was not until 1862 that the importance of this enterprise was appreciated by Congress. In that year the two lines began their work in earnest—and to-day we have as a result, a development of resources that astonishes even those who are most familiar with its existence. To the Central Pacific branch of the trans-continental thoroughfare is the commercial world indebted for the development of the Pacific slope. Gold was the primary incentive to immigration, but this after all has proved but an auxiliary to the development of the agricultural and mechanical interests of the coast, and California in particular. Twenty-eight years ago our now thriving commonwealth was a comparatively barren territory. Her resources were undeveloped, and her agricultural capabilities untried. The railroad is the touchstone that has raised this community, in this short time, to the prominence of being the greatest grain-producing community in the world, in proportion to its area and population. In but little over a quarter of a century we find unproductive tracts clothed with waving grain, our once barren hill-sides and slopes laden with rich, fruit-bearing vines and trees, our bay teeming with an active merchant marine, bearing the products of over three millions of cultivated acres to every port in the known world. Again, our sister State of Nevada, but a few years ago regarded as the verge of the Great American Desert, by the advent of the Central Pacific and its tributary roads, has become one of the greatest producers of silver in the world, and to-day through this agency she sends forth in twelve months her \$51,580,290 of products from precious metals. While her mountains pour forth their silver streams in the lap of commerce, California with her golden harvest raises the amount of treasure product \$18,174,716 more; and the total export of treasure for the year 1877 reaches the enormous figure of \$57,613,870, within four millions of the entire national debt in 1860.

THE MAGNITUDE OF THE RAILROAD

As a mechanical undertaking can be appreciated in a measure, when we consider that, in the short space of fifteen years, a road, with its branches, comprising two thousand three hundred and twenty-one and one-half miles, has been constructed, and put in as perfect running order as any other roads in the world. In addition to this, and tributary to the Central Pacific road, are two hundred and fourteen miles of rail, running through portions of the finest timber and agricultural lands in the State. The territory opened up and developed by the system of railroads, in this State, is a marvel in its productiveness; and, as a lasting monument to those whose foresight and energy prompted the inauguration of this enterprise, stands our city, with its three hundred and eight thousand population, our palatial residences, our warehouses filled with the fruits of the commerce of the world, and our harbor a picture of active commercial life. The more we regard the present result of the grand enterprise, the more fully do we

appreciate the power of energetic endeavor. As an evidence of this, our city shows for 1876-7 the total assessed valuation of \$260,262,343. The amount of exports from San Francisco, for the year 1876, reached the enormous figure of one hundred million dollars; while the amount of passengers by railroad during that year was sixty thousand five hundred and sixty-five; and statistics show that the average influx of immigration for the past ten years is thirty thousand. Without the railroad, this state of things could not exist. As a proof of the value of the railroad as a developing agency for the State, we find that, during the year 1877, the amount of wheat exported was 4,901,756 centals (and this was a dry year), valued at \$10,927,668; of flour, 435,736 barrels were exported, valued at \$2,681,636; of wool, there were exported 52,812,126 pounds, of which 44,961,919 pounds were by rail. The total value of the wool exported is \$9,499,381. For eleven months of the year 1877, the total amount of freight by rail to the East was of the value of \$85,765,820.

AID RECEIVED.

It might be well to note that the cost of the Central Pacific Railroad and its branches was about \$140,000,000. It was ascertained that so gigantic an enterprise could hardly be accomplished with private capital alone, hence Congress was appealed to for the loan of Government credit, and bonds were issued to the amount of \$27,855,680, the principal and interest of which are to be paid by the Company.

"The whole amount of the bonds issued in aid of all the Pacific railroads is \$64,618,832. The annual interest on the same is \$3,877,129.92. The earnings thus far have paid about thirty per cent. of the interest, which, deducted from the annual interest, leaves the net annual expenditure for interest \$2,713,991.

"The net result to the United States may be thus stated:

"The cost of the overland service for the whole period from the acquisition of our Pacific Coast possessions down to the completion of the Pacific Railroad was over \$8,000,000 per annum, and this cost was constantly increasing.

"The cost since the completion of the road is the annual interest—\$3,877,129—to which must be added one-half the charges for services performed by the Company, about \$1,163,138 per annum, making a total annual expenditure of about \$5,000,000, and showing a saving of at least \$3,000,000 per annum."

These were currency bonds, and most of the money realized from their sale was expended here. They were sold for very much less than par, and there can be no question that when taken up will be fully up to par. This difference the Company has to meet. The State pays interest on \$1,500,000 of the Company's bonds, and this is done under a special contract between the Company and the State, the railroad doing a large amount of work for the State without cost as an offset. In view of the benefits the road confers upon the State, and the herculean task of its construction the assistance rendered both by the State and the General Government was a beneficial investment in the highest degree.

THE BENEFITS

Conferred by the road are numerous, and as a recompense for the assistance given, are an ample equivalent—indeed, their value can hardly be appreciated. A bare mention of them will convince all of this fact, save those cavilers who can see no good in any exhibition of public spirit. In addition to the \$140,000,000 distributed in the construction of the road, the company pays about \$330,000 per annum in taxes to the State. The number of miles of road accompanied with land grants to the company, is eight hundred and one, which has furnished already about eight thousand farms now under tillage or in process of occupation, it being the policy of the railroad company to induce small farmers to settle upon their lands, and hence they are selling them on liberal terms, long time, and at low rates of interest. A large portion of the land originally held by the company has been sold and opened up. Prices have varied from \$2.50 per acre, and upwards, according to location and quality. This does not look like monopoly. The average amount of disbursements, monthly, among its ten thousand employes reaches about \$320,000. This vast amount is mainly circulated at home, and the benefits reach all branches of trade. In addition, it may be remarked, that this amount is really distributed among at least forty thousand souls to whose support it contributes—for it is safe to assume that the ten thousand employes, on an average, will represent at least four individuals. Another benefit that the road confers, and one that is not taken into consideration by those who see no good in corporations, is the constant reduction of freights and a corresponding increase of local commerce. This increase, though in a degree in proportion to the influx of population, which of itself is induced by speed and cheapness of travel, is no small item in the material advancement of our community. Before the road was completed, the freight from Sacramento to Virginia City was five cents per pound, or \$100 per ton, and then communication was very uncertain, and could not be maintained at all during four months in the year. Under the present railroad system, we have daily transportation, and the low average rate of \$26 per ton, and this, too, over one of the most difficult roads of construction and operation in the United States. To the railroad we can safely attribute the influx of population in the State of Nevada, and the prodigious development of her mineral resources.

THE SOUTHERN PACIFIC.

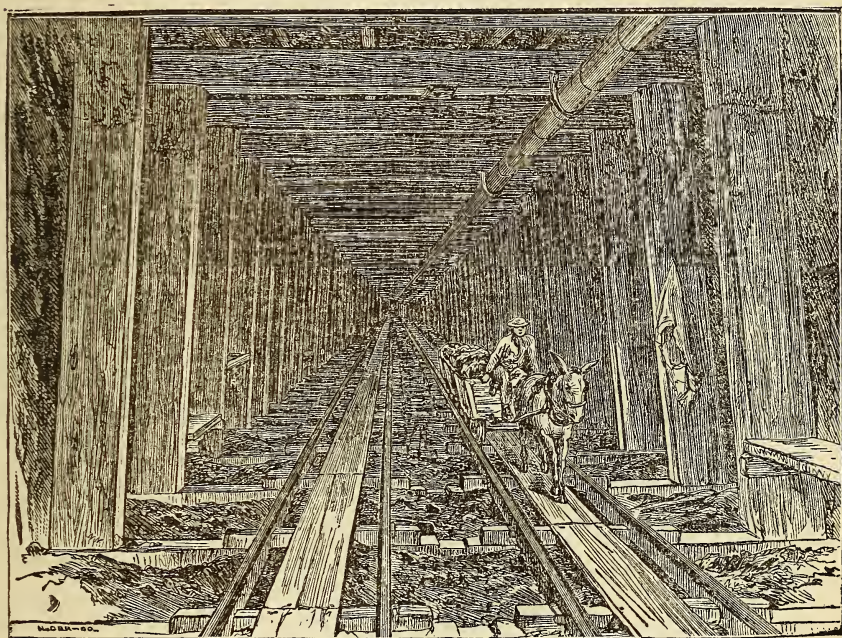
This Railroad, one of the most important and lengthy on the American Continent, is fast assuming proportions of importance to the commercial world. Should the plans of the Directory be carried out, the day is not far distant when it will assume an exalted position among the leading railroads of the country. As it at present stands it is a prodigy, and its surroundings are such that its rapid development and extension still further cannot be long delayed. The present organization of the Company was effected in October, 1870, by the consolidation of the San Francisco and San Jose Railroad Company, The Southern Pacific Railroad Company, The Santa Clara and Pajaro Valley Railroad Company and the California Southern Railroad Company. Having obtained by this consolidation all of the franchises belonging to these roads, the work of thorough equipment and extension was begun. In the improvement of its property on Mission Bay, in this city, the Company has expended, with the Central Pacific Company (both owning that property jointly for depot purposes) \$352,224. In September, 1876, the road was completed to Los Angeles, and immediately thereafter work was resumed at this terminus, and rapidly pushed forward until the Colorado River was reached a few months since, crossing to Yuana, in Arizona—giving a total length of seven hundred and twenty miles. The purpose of the Directors is to push on until it reaches the banks of the Mississippi. To accomplish this end the Company has simply asked the Government for a land grant, intending to construct the road from its present terminus to the proposed eastern end at its own expense. This, of course, brings it in competition with Tom Scott's Texas Pacific Road, and the question of difference between these two organizations will probably be settled by the present Congress. Since the completion of the road to Los Angeles, the Company has acquired the property and stock of the Los Angeles and Independence Railroad, thus securing a valuable landing at Santa Monica, and are also pushing on towards the thriving city of San Diego, having already reached Santa Ana. The construction of the Southern Pacific Railroad thus far has given employment to at least six thousand souls. The actual cost of construction reaches the sum of \$65,000,000—and it pays to the State, taxes to the amount of \$183,000. Its importance may be seen when we consider that, as at present constructed it has contributed largely to the development of the agricultural lands, coal, oil and other mineral deposits of the counties of Santa Clara, Fresno, Tulare, Kern, Los Angeles and will, ultimately, San Diego, as well as the entire San Joaquin Valley. Indeed, we may say that the whole district of Southern California will, ere long, fully recognize the potency of this instrumentality in its substantial development. In addition to this, "the extension into Arizona will develop an extensive business with that rich mining territory and command the entire business of Northern Mexico and adjacent country, securing to this State its valuable trade, and when the eastern connections are made will give direct communication with all of the southern and southwestern portions of the United States." The value of the enterprise may be appreciated when we perceive that for the year ending June, 1876, the amount received for passengers was \$949,945.42; and for freight \$1,186,673.30. The road expenses were \$1,140,329. As the developments of the mineral resources of Arizona progress, it will be perceived that an additional impetus will be given to every branch of industry along the line, the cost of mining in Arizona and Northern Mexico will be materially reduced, and the prosperity of that entire district which the road traverses will be greatly enhanced.

These are the two great corporations whose united influence has contributed so largely toward the advancement of our State to its present proud position, and the Directory are the men upon whom the insane wrath of irresponsible demagogues is heaped without stint. The reward for such evidences of enterprise from the hands of a mob of uneducated and besotted fanatics would be the total paralysis of commerce, and the stoppage of all internal improvements. It is fortunate this class of ingrates have not the destinies of communities in charge, and that we live in the faith and belief that the railroad work of improvement will still go on, in accordance with the requirements of commerce and the advancement of the State's best interests.

These are but a few of the details that can be furnished from the brief history of our great thoroughfares; and we can but give credit to those who have dared to attempt to overcome even Nature herself, and make her tributary to the happiness of generations to come. Little did the Italian, with his crude experimental effort, dream in his fondest fancy that before three centuries had elapsed the site of his lowly cot would be in instantaneous communication with the remotest verge of another continent, then unknown in its full extent. Little did Watt dream that through the instrumentality of steam the dizzy altitude of seven thousand feet above the sea would be overcome, and travel as easy as over the smoothest plains of Great Britain, and through this means empires be founded, peopled, and developed into their present state of prosperity. And yet all of these fancies are realized in our day and generation, and the culmination of the theories of three centuries exists in our own State of California.

Thus it will be perceived that our State is exceptional in its rapid progress. It is indeed a prodigy—sprung from an embryotic condition into a full-fledged maturity, ranking in her vigor among the foremost commonwealths of the world; and while we recognize this fact, and indulge in an honest degree of pride, we can but appreciate that the magic wand that has contributed the most to this remarkable condition is the railroad, which in all countries and under all social systems is the great leveller and equalizer of the apparent inconsistencies of interstate and international intercourse. It is quite remarkable that in California at this late day,

with all the suggestive surroundings about us, there are so many who fail to recognize or acknowledge the debt due to the minds that conceived the idea, the nerves that grappled with rough nature, and inaugurated beneficent systems, the benefits of which we now enjoy. The foresight of the much abused Stanford and his coadjutors, pledging their entire private fortunes to the great and comprehensive work, first embraced the situation, and with an eye to the near future, they entered upon their self-chosen labor, knowing no hindrance, heeding no discouragement, determined to succeed, and to-day they are recognized by all thinking men as national benefactors as well as the founders of the material prosperity of their adopted State. The Central and Southern Pacific Railroads, their branches and tributaries, will continue to dispense their benefactions when their founders have passed away, and will ever keep fresh in the minds of future generations the record of their patriotic deeds, their energy and their public spirit. They will stand as monuments and perpetuate names that will be honored when traducers and cavilers have gone out into that wilderness of nothingness, that buries all those classes in a sea of oblivion, forgotten and unhonored forever.—*Resources of Cal.*



THE SUTRO TUNNEL.

HISTORY OF THE GREAT ADIT—ITS CHARACTER, COST AND PROSPECTIVE USES.

It was only about two years after the first discovery of silver in what is now the Ophir ground of the Comstock Lode, that Mr. Adolph Sutro, who had already given much thought, examination and study to the subject of silver mining in different parts of the world, conceived the idea that the proper and economical method of developing the newly-discovered lode was by means of a deep adit running from Carson Valley directly to the lode, cutting it at what then appeared an enormous depth beneath the surface.

This idea, which at its first proposal seemed a good but utterly impracticable one, was the germ of an enormous enterprise, undertaken and carried to a now successful completion, through many difficulties and obstacles, in the face of much opposition, by the persistent and intelligent energy of its projector. For several years the scheme slumbered, or was lost sight of by everybody but Mr. Sutro himself. He had not only not given it up, but had nursed, developed and strengthened it, till at length, fortified with convincing arguments in favor of its usefulness and necessity, he this time brought it to the attention of the public much better prepared for a discussion and investigation into its merits than at first. This was in 1864. The Comstock Lode had by that time already yielded largely of the precious metals, and the whole people of the coast were interested in its permanence. It had also attracted the attention of the metal-

lurgists and geologists of Europe, as well as those of our own country. Hardly any one foresaw the possibilities or predicted the future resources of this great lode more clearly than Mr. Sutro. With this just appreciation of the matter, he insisted that these great mines should be worked on an intelligent and comprehensive system, and laid before the Legislature of Nevada his plan of a deep tunnel, asking for a franchise and the right of way. This was in the Fall of 1864, and in February, 1865, that body passed an Act granting the right of way to A. Sutro and his associates, and authorizing the construction of a Mining and Draining Tunnel. This Act did not provide any scale of charges or compensation for the benefits and uses of the tunnel, but left that question to be agreed upon between Mr. Sutro and the mining companies directly interested in the construction of the work. Armed with this authority from the State, he laid his project before the companies then mining upon the lode, and demonstrated to them the advantages of the work. Gradually, after months of effort and much expenditure of money, agreements were entered into with the mining companies, providing for the rates and charges to be paid for the benefits to be derived from the tunnel after its completion. To accomplish all this, it was necessary not only to demonstrate the utility of the work and its ultimate necessity, but Mr. Sutro had to overcome the great barriers of timidity and lack of interest in the subject. But at length, Mr. Sutro's pamphlet on the subject having excited general interest, the agreements, to the number of about twenty, comprising nearly all the companies then mining on the lode, were at length signed, sealed and delivered. These agreements provided that a royalty of \$2 per ton should be paid on the ore extracted from the mines drained, benefited or developed by the tunnel, which should be milled or sold, for all time to come, and fixed a certain rate of toll on passengers and waste rock transported through the tunnel. These agreements were drawn with such fullness and care that subsequent experience has suggested a necessity for no important change in their provisions.

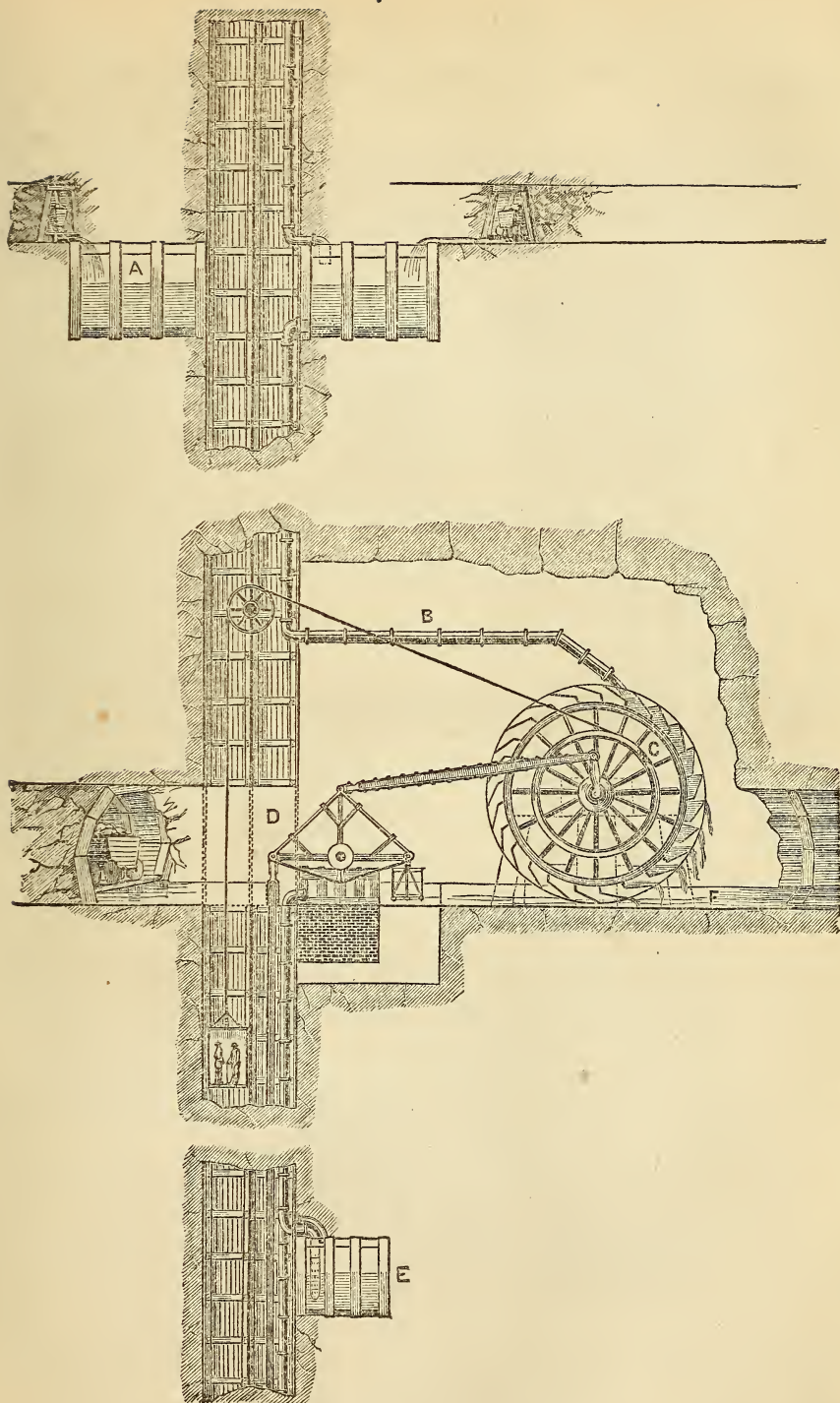
The fee to the mines was at that time, as in fact it still is, largely in the general government, and for this reason Mr. Sutro determined to apply to it for certain rights which could be only thence obtained. On the 25th day of July, 1866, Congress passed an Act "granting to A. Sutro the right of way and granting other privileges to aid in the construction of a draining and exploring tunnel to the Comstock Lode." This act also empowered the grantee to buy a tract of land at the mouth of the tunnel, withdrawing from sale 2,000 feet on each side thereof. Congress also conferred upon him the right to purchase such veins as might be cut in running the tunnel, confirmed the rates named in the agreements, and made the patents thereafter obtained by mining companies subject to the payment of the royalty. Mr. Sutro was now fully armed for the undertaking with everything but "the sinews of war," the great motive power of the whole enterprise.

Having accomplished so much, however, his first work was to develop and strengthen the idea, and for this purpose he submitted his project to many mining authorities both in this country and Europe, and obtained from all a singularly unanimous expression in favor of the utility of the work. Thus encouraged, Mr. Sutro set actively about the difficult work of obtaining subscriptions for prosecuting the enterprise. The project, however, looked so vast, its completion so remote, and its requirements so great, that capital was slow to invest in a work where returns could not be expected until after its completion. However, capital had to be raised, and Mr. Sutro soon began to obtain subscriptions freely, succeeding in this matter almost better than he had hoped.

After obtaining subscriptions to the amount of nearly a million of dollars, he procured the Legislature of Nevada to memorialize Congress for a grant in aid of the work, and with what seemed a good prospect of success. But at this juncture the active promoter of this scheme encountered much opposition from the mining companies, who sought to withdraw their subscriptions and to nullify the contract with Mr. Sutro, on the ground of his failure to fulfill on his part its terms. This opposition, while it hindered and postponed the work, did not prevent a commencement being made; nor, when once begun, did it more than temporarily interfere with its progress. Mr. Sutro pushed his enterprise with one hand and fought his opponents with the other, waging the contest with such persistence that the work has now very nearly reached completion.

The scheme of the Sutro Tunnel, in its relation to the mines of the Comstock Lode, is to make this a main adit, from which branches are to run throughout the whole mining district. From these branches it would be possible to cross-cut at proper intervals, and from the first set to run sub-cross-cuts, thus thoroughly exploring the whole ground by a grand network of deep tunnels, all connecting with the main artery. Through these channels would be drained the water of the entire district, obviating the enormous expense incident to pumping it to the surface. As a part of his scheme, this water, on reaching the mouth of the tunnel, is to be utilized for the propulsion of machinery, after the manner illustrated in the cut on the next page.

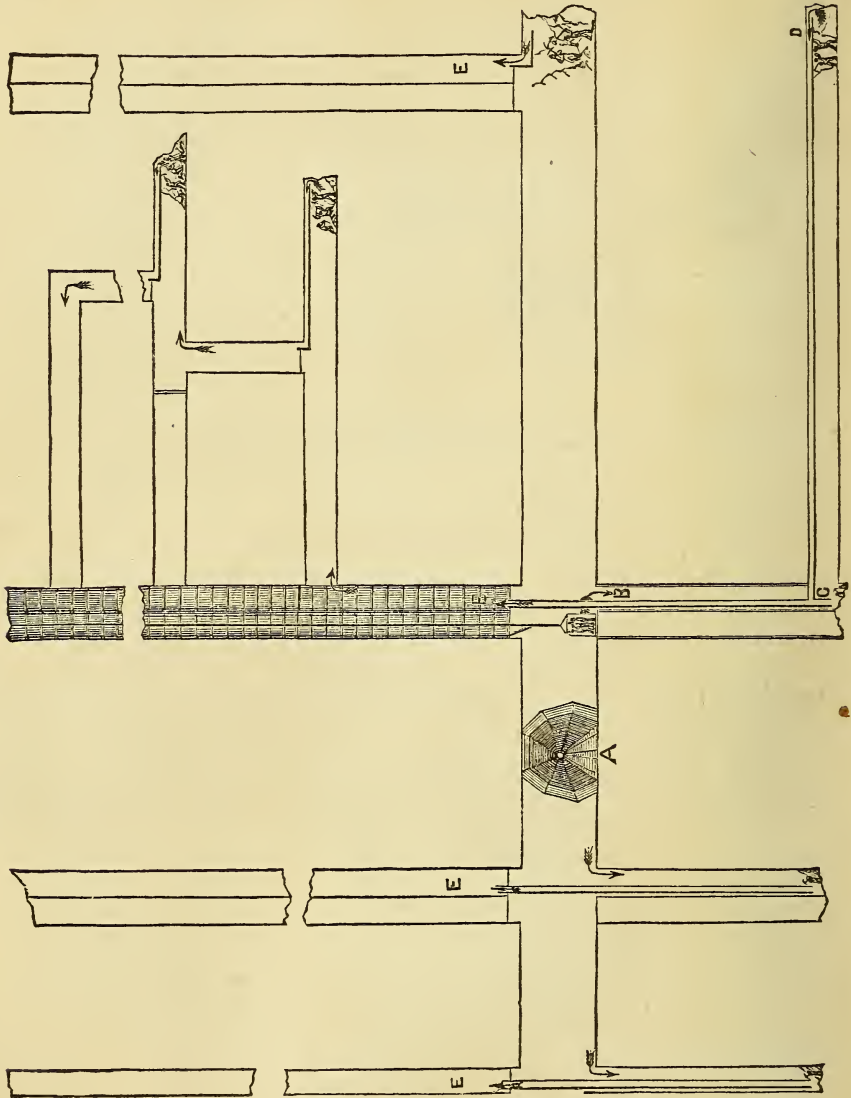
In addition to thus affording a ready means for exploring the entire territory, draining the mines and converting the water from a serious obstacle to a useful adjunct, this tunnel would supply a current of cool, fresh air to the shafts and lower levels of the mines, rendering them cool and healthy, instead of poisonous and unbearable. To say nothing of the increased comfort and safety it must secure to the miners, the ventilation thus afforded would enable them to



WATER POWER AT TUNNEL LEVEL.

The water entering the Comstock Lode above the tunnel level may be utilized as a motive power by collecting it in tanks as shown at A (say 1,000 feet above the tunnel), from which it may be conducted through pipes (B) to water-wheels (C) at the tunnel level, the water being discharged in the tunnel at F. These wheels may be employed to pump water, or for the purpose of hoisting or lowering men, material, etc., from *below* the tunnel level.

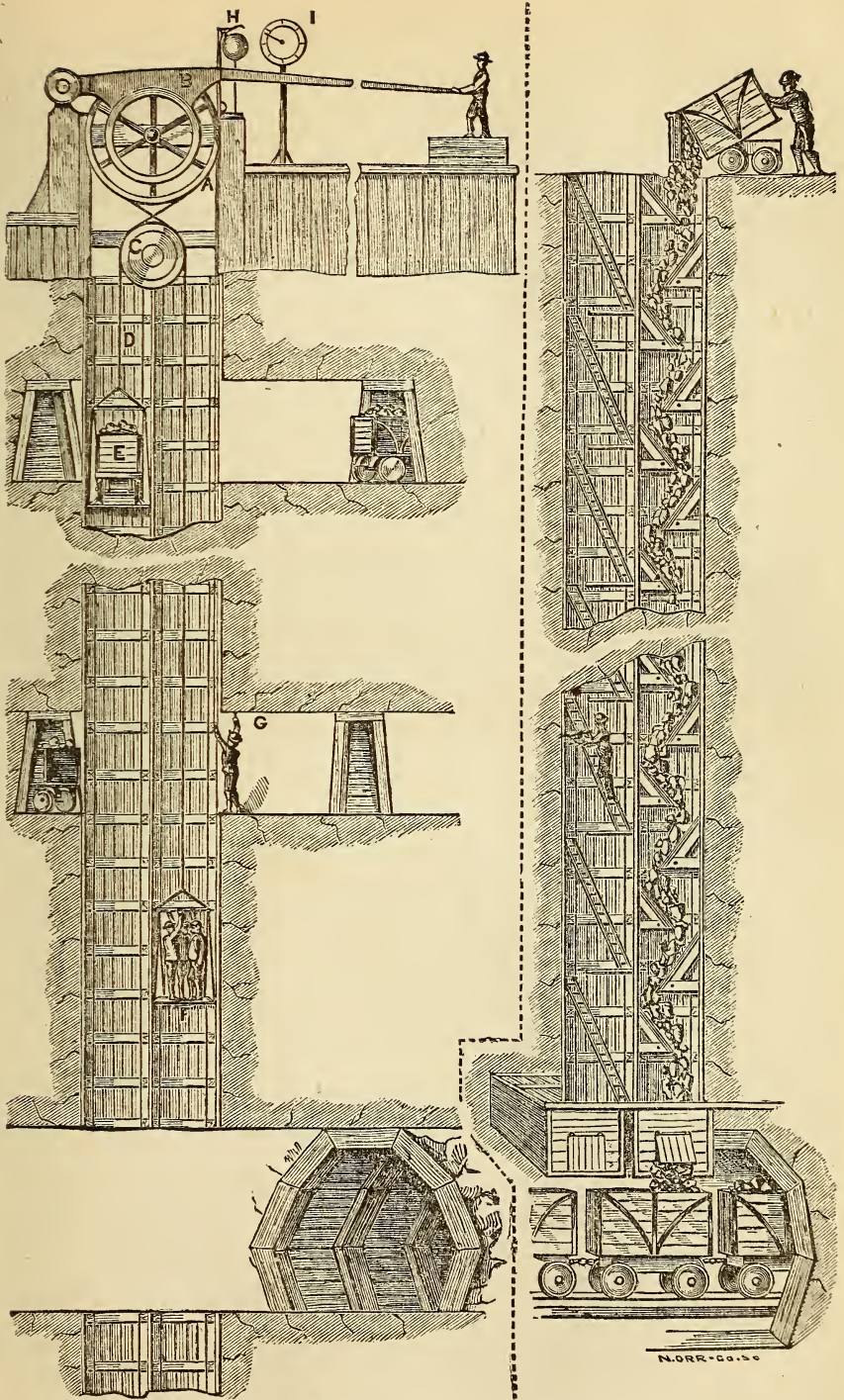
labor steadily and effectively, to the great benefit of the mine owners, as is shown in the diagram.



SYSTEM OF VENTILATION THROUGH THE SUTRO TUNNEL.

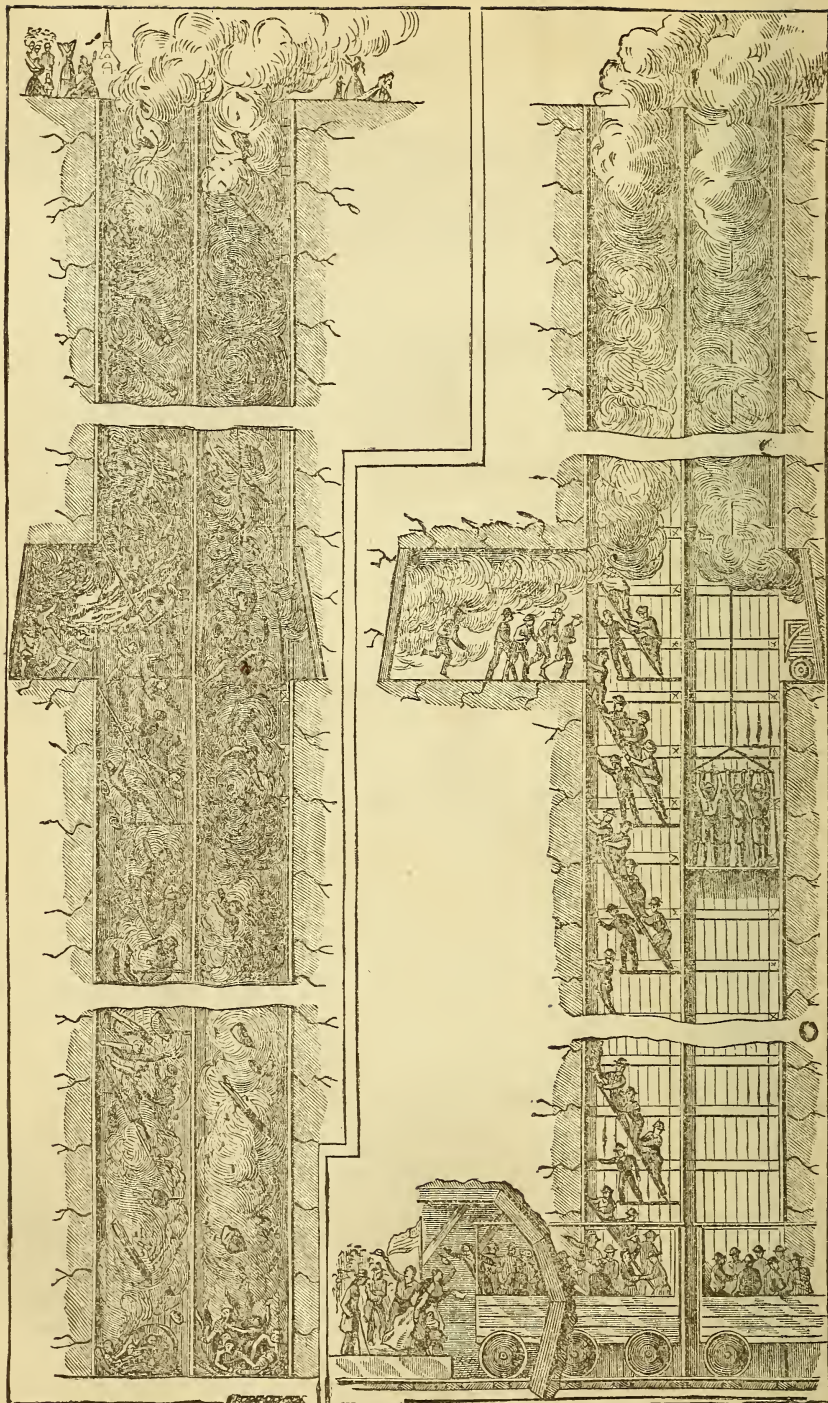
The mines will not only be ventilated above the level of the Sutro Tunnel, but also at the remotest points below it. By placing a partition in the existing shafts immediately above the tunnel level, which is pierced by a large pipe as seen at E, reaching down into the shafts and drifts below the tunnel level, the hot and vitiated air at these remote points will rise up through these pipes into the shafts, and through these to the surface two thousand feet above, while fresh air entering through the tunnel, A, will reach, passing down at B, the points where the miners are at work.

Thus the three chief advantages of this work served to promote economy, the consideration on which deep mining must be wholly dependent. Again, every pound of ore and waste rock hoisted to the surface increases in cost with the depth from which it has to be lifted. The cost of purchasing hoisting machinery and of afterwards running, renewing and keeping it in repair, makes a huge total when calculated for the mines of the entire Comstock Lode. But with such a net-work of tunnels as is above described, all material requiring to be removed from the mine can be thrown into cars, run through the cross-cuts or branch adits into the main tunnel, and thence out to the dumps or mills, as shown in the cut.



METHODS OF LOWERING ORE.

After the completion of the Suto Tunnel the ore may be sent down to the tunnel level into bins and cars by means of shutes as shown in the right-hand illustration; or it may be lowered in cars, E, placed on a cage with rope, D, attached, reaching to the surface, which is regulated by a brake, B, controlled by one man, as shown on the left hand. The ore lowered from above in one compartment may be made to hoist men or timbers to any level above in another compartment of the shaft, and also from below the tunnel to its level.



FIRE IN YELLOW JACKET MINE.

At this fire forty-two miners lost their lives; had the Sutro Tunnel been completed and connected with this shaft the men would have escaped unharmed, as illustrated in the right-hand cut.

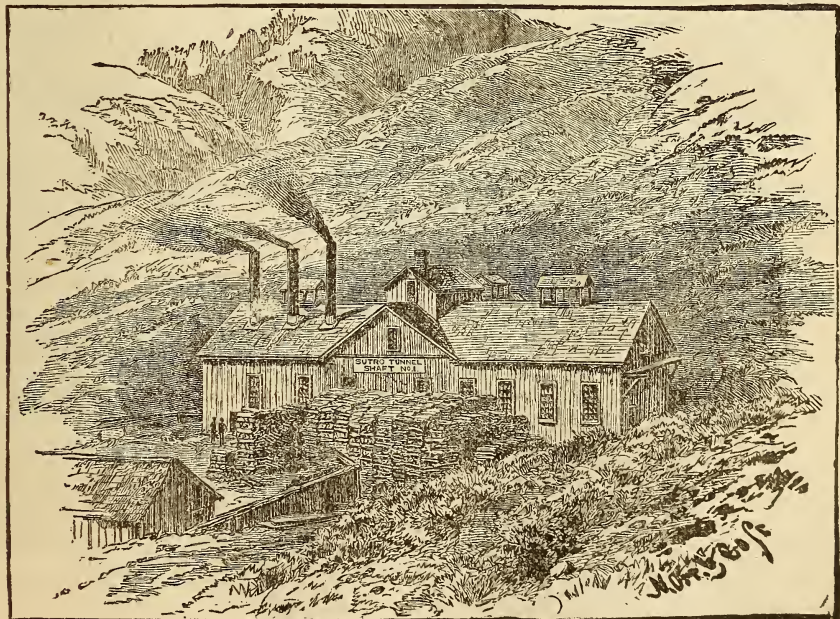
For the safety of miners in case of fire or accident, the system of adits would of course be invaluable. The upward current of air would carry the flames and smoke out through the shaft, while the miners could be lowered, or climb by ladders, into the connecting branches, from which escape through the main tunnel would be easy. (See preceding page.)

Such, in brief, was the scheme Mr. Sutro proposed to the mining companies of the Comstock, and as this scheme is now approaching realization, it will be interesting to recur to a few facts illustrating the magnitude, construction and history of this enterprise.

The tunnel commences at the town of Sutro, laid out at the entrance of the tunnel upon the land purchased from the United States, in the valley of the Carson River, about three and a half miles below Dayton, and one and a half miles from the river. It enters the mountains at an elevation of about 150 feet above the river bed, and has a course nearly W. N. W., reaching the Comstock Lode about in the centre of the Savage ground. The grade of the tunnel is for the most part three inches in 100 feet. A section of it first constructed had but one inch in 100 feet, but this being found insufficient to carry off the water, was afterwards changed.

Work upon the tunnel was begun on the 19th of October, 1869; but as only about fifteen men were employed at first, it progressed slowly, not over 460 feet having been made up to January 1st, 1870. During the latter year Mr. Sutro was at times actively superintending the work, and at other times employed in increasing subscriptions to the enterprise, the work accomplished that year being 1,290 feet. In December, 1870, on the petition of Mr. Sutro, Congress authorized the appointment of a commission to make inquiry into the cost and utility of the work and report upon the same. The President appointed on this commission, Major-General H. G. Wright, Major-General J. G. Foster and Professor W. Newcomb. In the Summer of 1871, these Commissioners visited and examined the tunnel and the mines of the Comstock Lode. Their report, though not so complete as was expected, was yet a valuable document. They found the proposed work to be entirely feasible, estimated the cost at \$4,500,000, and the time necessary to complete it at three or four years—less, if machinery were employed; giving it as their opinion that the Comstock Lode was a true fissure vein, extending down into the earth indefinitely. They added, that the mines would be worked as deep as mechanical means would allow, and that the amount of low-grade ore in the lode which cannot be advantageously worked on account of the expense, to be of almost unlimited extent.

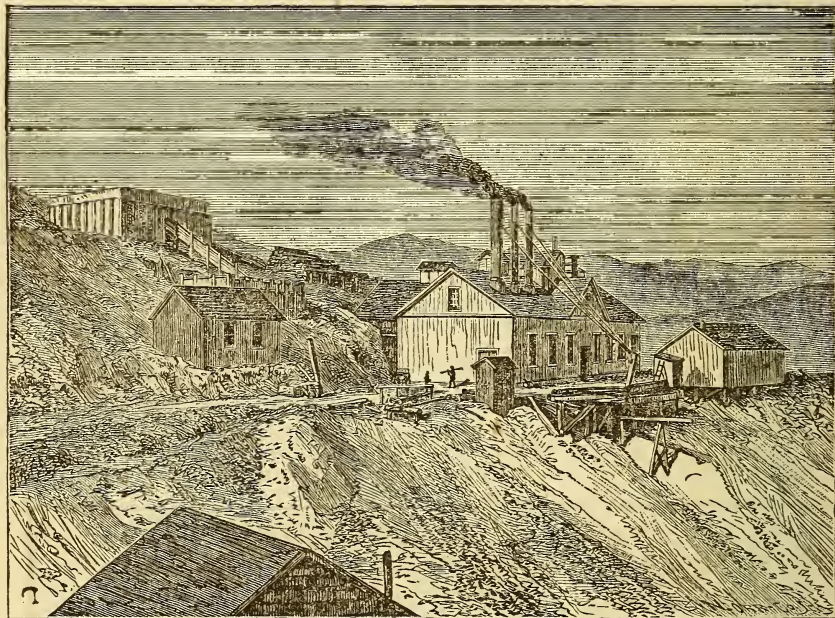
In 1871, Mr. Sutro was successful in making such financial arrangements abroad as enabled him to prosecute the work more rapidly than he had before been able to do. The working force was increased, machinery was purchased, and active operations began on a more thorough and extensive plan. Four vertical shafts were located along the tunnel line in November of that year. Shaft No. 1 is located 4,915 feet from the mouth of the tunnel, its depth to the tunnel grade being 522 feet. The work of sinking was commenced here (as on tall he shafts) early in January, 1871, the tunnel level having been reached in this



VIEW OF HOISTING WORKS AT SHAFT NO. 1, SUTRO TUNNEL.

shaft on the 1st of July, 1873. Drifts east and west were started from the bottom of this shaft, the former having been extended and in good time connected with the tunnel header. Water had been more or less troublesome in this shaft, and work on it had been suspended for two months, preparatory to completion of pumps and excavation of pump stations. The pumps used in this shaft and in Shaft No. 2 were Allison & Bannan's double-acting cataract steam pumps. These pumps were quite extensively used in Pennsylvania, and even in England, but none had yet been tried in Nevada. They were considered simpler, cheaper, and less liable to get out of order than the Cornish pumps. They weighed ten tons each, their steam cylinders were 20 by 72 inches, and their discharge pipes 10 inches, and they were capable of lifting the water from station to station 300 feet apart. They were found to be very effective pumps, capable of dealing with any flow of water that could be encountered, and from No. 1 shaft the two pumps discharged over 3,000,000 gallons in a month.

Shaft No. 2. This shaft is located 9,065 feet from the tunnel entrance, and its depth



VIEW OF HOISTING WORKS AT SHAFT NO. 2, SUTRO TUNNEL.

to the tunnel grade is 1,041 feet. Begun at about the same time as Shaft No. 1, sinking was prosecuted without interruption till August 1st, 1872, when work was stopped to prepare for pump stations, and to place the pumps in position. The shaft had then been sunk 600 feet. Two pump stations were excavated, the pumps put in place, the water soon lowered, and the work of sinking was again begun on the 4th of December, 1872. Sinking was again intermitted from the middle of March to the 9th of October, 1873, having reached at that time a depth of 734 feet. It then proceeded without interruption until the tunnel level was reached, on the 18th of April, 1874. Drifting east and west was begun May 9th, 1874, and 171 feet were excavated in the east drift and 170 feet in the west drift, when, on June 26th, a large and unexpected body of water was encountered in the west drift, which poured in with such force and in such volume that the miners were obliged to fly for their lives, and the shafts and drifts had to be abandoned. In less than a month, not only the drifts but the shaft were filled with water to the top. Such was the end of Shaft No. 2, though not of the water which was encountered in the tunnel later, and will be referred to there.

Shaft No. 3 (see next page) is located 13,545 feet from the tunnel entrance, and its depth to the tunnel level is 1,361 feet. This shaft was abandoned when completed to a depth of 456 feet, on account of the constant influx of water, which could not be overcome except at an immense cost and after a long period of time, when it was probable that the tunnel itself would have passed beyond it.

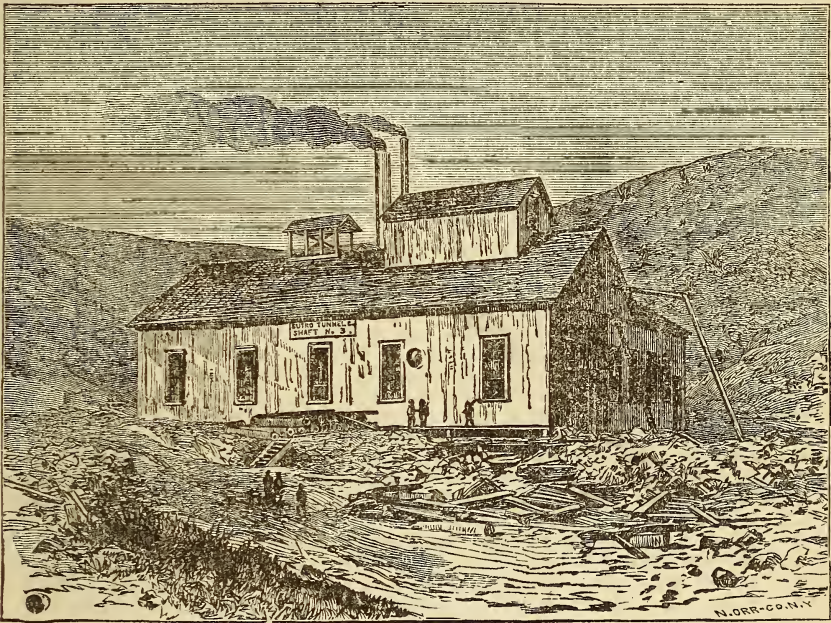
Shaft No. 4 (see next page) is 17,695 feet from the entrance, with a depth of 1,485 feet. This shaft was also abandoned, for the same causes as in the case of Shaft No. 3, when a depth of 674 feet had been attained.

In addition to these four shafts, a small air-shaft, 211 feet in depth, had been sunk, 2,250

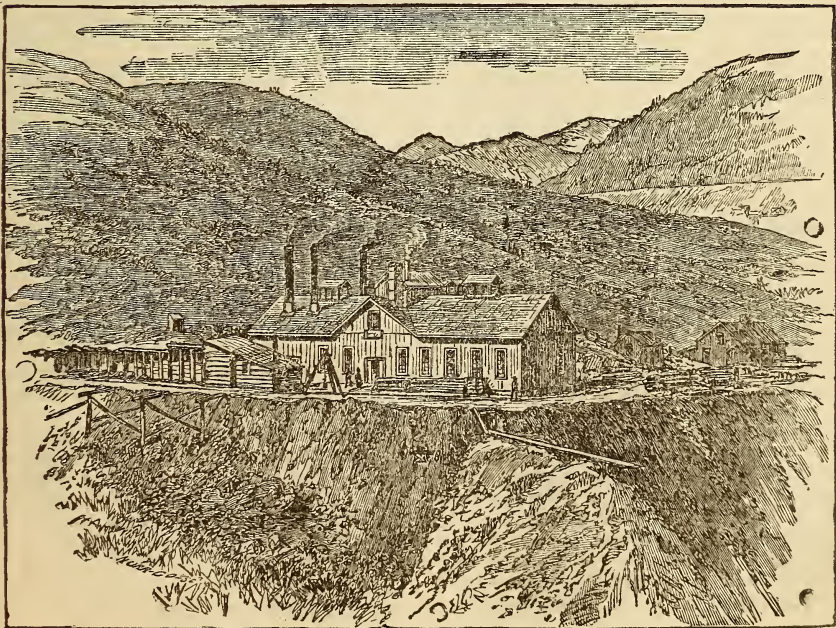
feet from the mouth. This air-shaft was begun May 27th, 1872, and completed the 12th of July following.

It will now be necessary to return to the history of the tunnel.

In the year 1871 the progress made was 915 feet, an average per month of $76\frac{1}{4}$ feet, and the total length of the tunnel at the close of the year was 2,665 feet.



VIEW OF HOISTING WORKS AT SHAFT NO. 3, SUTRO TUNNEL.



VIEW OF HOISTING WORKS AT SHAFT NO. 4, SUTRO TUNNEL.

In 1872, the advance was from 2,665 to 3,480 feet, a total of 815 feet, and an average monthly progress of $67\frac{1}{2}$ feet.

In 1873, the tunnel advanced to 5,399 feet, a total of 1,919 feet. This includes the 655 feet which had been made in the east and west drifts from Shaft No. 1, connection with which was made by the tunnel header October 27th of this year. Exclusive of these 655 feet, there was an average monthly progress of 105 4-12 feet.

In 1874, the progress began to improve, owing to the introduction of the Burleigh drill. One of these drills was started April 25th; on June 22d three additional drills were put in, and on August 7th two more—making six in all. These drills were run by compressed air, supplied by a powerful Compressor located at Shaft No. 1. This Compressor was manufactured by the Société John Cockrill, of Seraing, Belgium, and was purchased there by Mr. Sutro, who preferred the heavier European machinery to the American, which is smaller and lighter, and consequently more liable to repairs and breakage than the other. This Compressor ran with great smoothness and regularity, and with scarcely a single stoppage for repairs. The progress made during this year was 2,680 feet, or an average per month of 223 4-12 feet, bringing the header to a point 8,079 feet from the mouth. The greatest progress ever made in a single month was made in December of this year—the extraordinary run of 417 feet, nearly 13 feet a day.

During the year 1875, the average progress per month was 310 8-12 feet, the total distance run 3,728 feet, and the total length of tunnel at the end of the year was 11,807 feet. One of the most interesting incidents of the year, and one not unaccompanied by danger, was the tapping of the enormous body of water which has already been mentioned as having burst into the west drift from Shaft No. 2. This water was now a chamber of 341 feet long, 8 feet by 12 in dimensions, besides filling a shaft 5 feet by 10, and over 1,000 feet high. On the 9th of March, a hole 100 feet long was bored by diamond drill from the face of the tunnel header, to allow the water to discharge. Upon tapping the body of water, the stream burst forth with tremendous force. Fragments of timber, rock and debris were soon forced into it, and the hole had to be bored again. Again the water burst out with such force as to shoot the drill-rod out into the tunnel; but gradually the water lowered in the shaft, and in a week's time progress was resumed in the header. Some instances of extraordinary progress occurred during this year; as for example the run from July 22d to August 8th, 279 feet!—about $16\frac{1}{2}$ feet per day for 17 days consecutively!

On the 13th of August of this year the Compressor at Shaft No. 1 was closed down, and the power has been ever since that date supplied from a very powerful Compressor built at Kalk, near Deutz, on the Rhine, by the Humboldt Machine Company, and located at Shaft No. 2. This Compressor is a powerful double compressor, and has given great satisfaction.

In the year 1876, the tunnel advanced from 11,807 to 15,477 feet, a total progress of 3,670 feet, and an average per month of 305 10-12 feet.

At the close of 1877, the total distance made was 18,607 feet, the progress for the year 3,130 feet, and the average per month 260 10-12 feet. This decline in the rate of progress was due to the exceedingly difficult character of the ground encountered. Soft, slippery and swelling, it was not only exceedingly difficult to pass through, but was also dangerous to work. In many places the clay, after being cut through and exposed to the air, swelled so as to displace the railroad track, and to break the stoutest timbers like reeds. The most constant watchfulness was required to prevent accidents. Timbers were replaced again and again, and a gang of men kept continually at work easing up the clay behind them, and driving in lagging to give them additional strength. The tunnel was timbered up to the face itself, and frequently lagging was driven ahead of the drift to prevent accidents. Consequently very light blasts had to be used; sometimes even no powder could be fired, for fear of knocking down the timbers. Considering the character of the ground encountered, the average progress must be considered remarkably good. Two drills were also taken off in April, and the work was continued with only four drills for the rest of the year.

1878.—The progress during the present year has been of a lower average still than that of last year, or $235\frac{1}{2}$ feet per month to September 1st, with the same difficulties to encounter as those of the previous year, and the additional inconveniences of heat and bad air, which have latterly become very oppressive. Up to the present writing, September 1st, the total length of the tunnel is 20,489 feet, which brings it very close to its objective and natural terminus, the west wall of the Comstock Lode, the syenite of Mt. Davidson, and at this point work on the main tunnel has been discontinued.

On the 8th of July, about half-past 10 at night, a connection was made with the east drift, on the 1,640 foot level of the Savage Mine, at a point 20,018 feet from the mouth of the tunnel. The draft of air was immediate, rushing in from the tunnel mouth and upward through the Savage shaft with great force. Since the exhaustion of the great body of heated and poisoned air which had been pent up in the tunnel and in the lower drifts of the Savage Mine for so many years, the air has cooled, and has ventilated and purified these underground workings in a very satisfactory manner. It is stated that the thermometer on the 2,000 foot level of the Savage Mine, which had previously stood at 120° , now rises to only 90° . Thus the first benefit from the tunnel project is already realized, though as yet only just begun. An immediate

result of the improvement in the air of the tunnel header was seen in the increased progress which was made immediately subsequent to the connection.

A few details of the work may prove interesting. The average progress has been given year by year since the beginning of the work, but in the early years details of work accomplished were not kept, apparently, as fully as would have been desirable. But in 1875, Mr. Sutro arranged an outline form of Reports, which has been in use ever since then, giving all the important details of the work, and from them we compile a resumé which can be conveniently followed, in the following table :

Year.	Total distance Dec. 31. Feet.	Progress for the year. Feet.	Average per month. Feet.	Average temperature at Header of		Monthly average flow of water, miner's inches.	Average monthly consumption of Giant Powder.	Average number of car-loads of rock removed monthly two tons each.	Holes drilled each month. Average		Drills sharpened monthly Average
				Air.	Water.				Depth. Feet.	No.	
1869 (fm Oct 19)	460										
1870.....	1,750	1,290	107½								
1871.....	2,665	915	76½								
1872.....	3,480	815	67 11-12								
1873.....	5,399	1,019	105 4-12*								
1874.....	8,079	2,680	223 4-12	72½°		9½					
1875.....	11,807	3,728	310 8-12	82½°	81½°	51¾	3,240½	2,086	8,619	1,232	1,720 ¶
1876.....	15,477	3,670	305 10-12	85°	86°	132½	3,584½	2,124½	8,162	1,035½	2,571
1877.....	18,607	3,130	260 10-12	92°	93°	86½	2,583½	1,726	6,122½	822	1,528½
1878 (to Sept. 1)	20,489	1,882	235 3-12	95°	105°	About 1,235,000 gallons per day.	1,772½	1,719½	4,997½	648	1,182

This table of details is the more valuable in that it is brought up to the close of the work on the main tunnel.

The branch tunnels, north and south, along the line of the lode, are yet to be begun ; but this will not be unnecessarily delayed. But the first thing to be considered after ventilation is drainage ; and in order to receive the water of the Comstock Lode through the tunnel it will be necessary to excavate and build a covered drain along its whole length. The water in some of the mines now stands at a temperature of 150 to 160 degrees, and if the water were allowed to flow through the tunnel, cooling rapidly as the strong current of air passed over it, life would be endangered from the steam thus generated. No work could be done under these circumstances. The drain can be commenced, however, at an infinite number of places, and in that way quickly completed. It will be a permanent part of the tunnel, and will consequently be substantially built.

The adjacent mines are already beginning to look anxiously forward for the completion of this great work. Its advantages and benefits are quickly appreciated now that they are close at hand.

The Julia Company has recently entered into a contract with the Sutro Tunnel Company, looking to the speedy construction of a branch from the main tunnel to the shaft of their mine. This connection, which is exactly in accordance with the original scheme of the projector, will save to the Julia company the cost of heavy and expensive pumping and hoisting works, besides thoroughly cross-cutting their ground in the direction from which it comes. The surveys for this branch have already been made and the work upon it actually begun. Its initial point is distant 19,716 feet from the mouth. The distance to be run to connect with the Julia shaft is 1,400 feet, and it is expected that this connection will be made by about the 1st of January next. This branch will be of the same dimensions as the main tunnel, 8 feet in height by 10 feet in width. It will be extended after passing the Julia Mine southerly to Gold Hill and Gold Cañon ; while another branch will diverge in the neighborhood of the Belecher Mine towards American Flat. The north lateral branch will be commenced as soon as a full under-

* This monthly average is from number of feet made, exclusive of 655 feet made in east and west drifts from Shaft No. 1.

† The largest flow was in September and October of this year, amounting to 231 and 244 miners' inches respectively.

‡ For eight months. ¶ For five months.

standing is arrived at with the Bonanza and other mines. The Julia Mine, however, will be the first mine to derive all the advantages from the Sutro Tunnel in drainage, ventilation, transportation, cheaper milling and reduced cost for supplies, such as fire-wood, timber and other materials. By means of this connection, also, the Sutro Tunnel procures an outlet at Virginia City, with full railroad facilities from the Carson River for the transportation of freight and passengers.

Such is an outline of the history of the tunnel, its object, benefits, and the work done upon it. It could not well be given in a less space, and one of these days there may be a history of the enterprise written, much fuller in detail and incident.

MINES AND MILLING.

The U. S. Law regulating Mining Claims.—The Formation of Mining Incorporations and Opening of Mines.—Shafts, winzes, inclines, drifts, crosscuts, upraises, stopes, and manner of timbering them all.—Compressed Air and its uses.—Ventilation—Water and Pumps—How Ores are Milled.

Inasmuch as this work is calculated to supply a want long felt, not only on the coast but in the States and Europe, where it will be perused by many who know nothing of our mining laws, this chapter on the general subject cannot be considered out of place. There are, moreover, very many of the citizens on the coast who have never yet posted themselves in regard to the manner of making locations, who do not wish to pay \$4 for the law book containing the desired information. All such will be interested in the following copy of the United States Mining Laws, approved May 10, 1872:

An Act to Promote the Development of the Mining Resources of the United States.

Be it enacted by the Senate and the House of Representatives of the United States of America, in Congress assembled: That all valuable mineral deposits of lands belonging to the United States, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners, in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States.

SECTION 2. That mining claims upon veins and lodes of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits heretofore located, shall be governed as to length along the vein or lode by the customs, regulations, and laws in force at the date of their location. A mining claim located after the passage of this act, whether located by one or more persons, may equal, but shall not exceed, one thousand five hundred feet in length along the vein or lode; but no location of a mining claim shall be made until the discovery of the vein or lode within the limits of the claim located. No claim shall extend more than three hundred feet on each side of the middle of the vein at the surface, nor shall any claim be limited by any mining regulations to less than twenty-five feet on each side of the middle of the vein at the surface, except where adverse rights existing at the passage of this act shall render such limitation necessary. The end lines of each claim shall be parallel to each other.

SEC. 3. That the locators of all mining locations heretofore made, or which shall hereafter be made, on any mineral vein, lode, or ledge, situated on the public domain, their heirs and assigns, where no adverse claim exists at the passage of this act, so long as they comply with the laws of the United States, and the State, territorial, and local regulations not in conflict with said laws of the United States governing their possessory title, shall have the exclusive right of possession and enjoyment of all the surface included within the lines of their locations, and of all veins, lodes, and ledges throughout their entire depth, the top or apex of which lies inside of such surface lines extended downward vertically, although such veins, lodes, or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side lines of said surface locations: *Provided*, That their right of possession to such outside parts of such veins or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward as aforesaid, through the end lines of their locations, so continued in their own direction that such planes will intersect such exterior parts of said veins or ledges: *And provided, further*, That nothing in this section shall authorize the locator or possessor of a vein or lode which extends in its downward course beyond the vertical lines of his claim to enter upon the surface of a claim owned or possessed by another.

SEC. 4. That where a tunnel is run for the development of a vein or lode, or for the discovery of mines, the owners of such tunnel shall have the right of possession of all veins or lodes within three thousand feet from the face of such tunnel on the line thereof, not previously known to exist, discovered in such tunnel, to the same extent as if discovered from the surface; and locations on the line of such tunnel of veins or lodes not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall be invalid; but failure to prosecute the work on the tunnel for six months shall be considered as an abandonment of the right to all undiscovered veins on the line of said tunnel.

SEC. 5. That the miners of each mining district may make rules and regulations not in conflict with the laws of the United States, or with the laws of the State or Territory in which the district is situated, governing the location, manner of recording, amount of work necessary to hold possession of a mining claim, subject to the following requirements: The location must be distinctly marked on the ground, so that its boundaries can be readily traced. All records of mining claims hereafter made shall contain the name or names of the locators, the date of the location, and such a description of the claim or claims located by reference to some natural object or permanent monument as will identify the claim. On each claim located after the passage of this act, and until a patent shall

have been issued therefor, not less than one hundred dollars' worth of labor shall be performed or improvements made during each year. On all claims located prior to the passage of this act, ten dollars' worth of labor shall be performed or improvements made each year for each one hundred feet in length along the vein until a patent shall have been issued therefor; but where such claims are held in common, such expenditure may be made upon any one claim; and upon a failure to comply with these conditions, the claim or mine upon which such failure occurred shall be open to relocation in the same manner as if no location of the same had ever been made: *Provided*, That the original locators, their heirs, assigns, or legal representatives, have not resumed work upon the claim after such failure and before such location. Upon the failure of any one of several co-owners to contribute his proportion of the expenditures required by this act, the co-owners who have performed the labor or made the improvements, may, at the expiration of the year, give such delinquent co-owner personal notice in writing or notice by publication in the newspaper published nearest the claim, for at least once a week for ninety days, and if at the expiration of ninety days after such notice in writing or by publication, such delinquent should fail or refuse to contribute his proportion to comply with this act, his interest in the claim shall become the property of his co-owners, who have made the required expenditures.

SEC. 6. That a patent for any land claimed and located for valuable deposits, may be obtained in the following manner: Any person, association, or corporation, authorized to locate a claim under this act, having claimed and located a piece of land for such purposes, who has, or have, complied with the terms of this act, may file in the proper land office an application for a patent, under oath, showing such compliance, together with a plat and field notes of the claim or claims in common, made by or under the direction of the United States Surveyor-General, showing accurately the boundaries of the claim or claims, which shall be distinctly marked by monuments on the ground, and shall post a copy of such plat, together with a notice of such application for a patent, in a conspicuous place on the land embraced in such plat previous to the filing of the application for a patent, and shall file an affidavit of at least two persons, that such notice has been duly posted as aforesaid, and shall file a copy of said notice in such land office, and shall thereupon be entitled to a patent for said land in the manner following: The Register of the land office, upon the filing of such application, plat, field notes, notices, and affidavits, shall publish a notice that such application has been made, for the period of sixty days, in a newspaper to be by him designated as published nearest to said claim; and he shall also post such notice in his office for the same period. The claimant, at the time of filing this application, or at any time thereafter, within the sixty days of publication, shall file with the Register a certificate of the United States Surveyor-General that five hundred dollars' worth of labor has been expended or improvements made upon the claim by himself or grantors; that the plat is correct, with such further description by such reference to natural objects or permanent monuments as shall identify the claim, and furnish an accurate description, to be incorporated in the patent. At the expiration of the sixty days of publication, the claimant shall file his affidavit showing that the plat and notice have been posted in a conspicuous place on the claim during said period of publication. If no adverse claim shall have been filed with the Register and the Receiver of the proper Land Office, at the expiration of the sixty days of publication, it shall be assumed that the applicant is entitled to a patent upon the payment to the proper officer of five dollars per acre, and that no adverse claim exists; and thereafter no objection from third parties to the issuance of a patent shall be heard, except it be shown that the applicant has failed to comply with this act.

SEC. 7. That where an adverse claim shall be filed during the period of publication, it shall be upon the oath of the person or persons making the same, and shall show the nature, boundaries, and extent of such adverse claim; and all proceedings, except the publication of notice and making and filing of the affidavit thereof, shall be stayed until the controversy shall have been settled or decided by a court of competent jurisdiction, or the adverse claim waived. It shall be the duty of the adverse claimant, within thirty days after filing his claim, to commence proceedings in a court of competent jurisdiction, to determine the question of the right of possession, and prosecute the same with reasonable diligence to final judgment; and a failure so to do shall be a waiver to his adverse claim. After such judgment shall have been rendered, the party entitled to the possession of the claim, or any portion thereof, may, without giving further notice, file a certified copy of the judgment-roll with the Register of the land office, together with the certificate of the Surveyor-General that the requisite amount of labor has been expended, or improvements made thereon, and the description required in other cases, and shall pay to the Receiver five dollars per acre for his claim, together with the proper fees, whereupon the whole proceedings and the judgment-roll shall be certified by the Register to the Commissioner of the General Land Office, and a patent shall issue thereon for the claim, or such portion thereof as the applicant shall appear, from the decision of the court to rightly possess. If it shall appear from the decision of the court, that several parties are entitled to separate and different portions of the claim, each party may pay for his portion of the claim, with the proper fees, and file the certificate and description by the Surveyor General, whereupon the Register shall certify the proceedings and judgment-roll to the Commissioner of the General Land Office, as in the preceding case, and patents shall issue to the several parties according to their respective rights. Proofs of citizenship under this act, or the acts of July twenty-sixth, eighteen hundred and sixty-six, and July ninth, eighteen hundred and seventy, in the case of an individual, may consist of his own affidavit thereof, and in case of an association of persons unincorporated, of the affidavit of their authorized agent, made on his own knowledge or upon information and belief; and in case of a corporation organized under the laws of the United States, or of any State or Territory of the United States, by the filing of a certified copy of their charter or certificate of incorporation; and nothing herein contained shall be construed to prevent the alienation of the title conveyed by a patent for a mining claim to any person whatever.

SEC. 8. That the description of vein or lode claims, claims upon unsurveyed lands, shall designate the location of the claim with reference to the lines of the public surveys, but need not conform therewith; but where a patent shall be issued as aforesaid for claims upon unsurveyed lands, the

Surveyor-General, in extending the surveys, shall adjust the same to the boundaries of such patented claim, according to the plat or description thereof, but so as in no case to interfere with or change the location of any such patented claim.

SEC. 9. That sections one, two, three, four and six of an act entitled "An act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July twenty-sixth, eighteen hundred and sixty-six, are hereby repealed, but such repeal shall not affect existing rights. Applications for patents for mining claims now pending may be prosecuted to a final decision in the General Land Office; but in such cases where adverse rights are not affected thereby, patents may issue in pursuance of the provisions of this act; and all patents for mining claims heretofore issued under the act of July twenty-sixth, eighteen hundred and sixty-six, shall convey all the rights and privileges conferred by this act where no adverse rights exist at the time of the passage of this act.

SEC. 10. That the act entitled "An act to amend an act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July ninth, eighteen hundred and seventy, shall be and remain in full force, except as to the proceedings to obtain a patent, which shall be similar to the proceedings prescribed by sections six and seven of this act for obtaining patents to veins or lode claims; but where said placer claims shall be upon surveyed lands, and conform to legal subdivisions, no further survey or plat shall be required, and all placer mining claims hereafter located, shall conform as near as practicable with the United States system of public land surveys, and the rectangular subdivisions of such surveys, and no such location shall include more than twenty acres for each individual claimant, but where placer claims cannot be conformed to legal subdivisions, survey and plat shall be made as on unsurveyed lands: *Provided*, That proceedings now pending may be prosecuted to their final determination under existing laws; but the provisions of this act, when not in conflict with existing laws, shall apply to such cases: *And provided also*, That where by the segregation of mineral land in any legal subdivision, a quantity of agricultural land less than forty acres remains, said fractional portion of agricultural land may be entered by any party qualified by law, for homestead or pre-emption purposes.

SEC. 11. That where the same person, association, or corporation, is in possession of a placer claim, and also a vein or lode included within the boundaries thereof, application shall be made for a patent for the placer claim, with the statement that it includes such vein or lode, and in such case (subject to the provisions of this act and the act entitled "An act to amend an act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July ninth, eighteen hundred and seventy) a patent shall issue for the placer claim, including such vein or lode, upon the payment of five dollars per acre for such vein or lode claim, and twenty-five feet of surface on each side thereof. The remainder of the placer claim, or any placer claim not embracing any vein or lode claim, shall be paid for at the rate of two dollars and fifty cents per acre, together with all costs of proceedings; and where a vein or lode, such as is described in the section of this act, is known to exist within the boundaries of a placer claim, an application for a patent for such placer claim, which does not include an application for the vein or lode claim, shall be construed as a conclusive declaration that the claimant of the placer claim has no right of possession of the vein or lode claim; but where the existence of a vein or lode in a placer claim is not known, a patent for the placer claim shall convey all valuable minerals and other deposits within the boundaries thereof.

SEC. 12. That the Surveyor-General of the United States may appoint in each land district containing mineral lands as many competent surveyors as shall apply for appointment to survey mining claims. The expenses of the survey of vein or lode claims, and the survey and subdivisions of placer claims into smaller quantities than one hundred and sixty acres, together with the cost of publication of notices, shall be paid by the applicants, and they shall be at liberty to obtain the same at the most reasonable rates, and they shall also be at liberty to employ any United States Deputy Surveyor to make the survey. The Commissioner of the General Land Office shall also have power to establish the maximum charges for surveys and publication of notices under this act; and, in case of excessive charges for publication, he may designate any newspaper published in a land district where mines are situated, for the publication of mining notices in such district, and fix the rates to be charged by such paper; and, to the end that the Commissioner may be fully informed on the subject, each applicant shall file with the Register a sworn statement of all charges and fees paid by said applicant for publication and surveys, together with all fees and money paid the Register and the Receiver of the Land Office, which statement shall be transmitted, with the other papers in the case, to the Commissioner of the General Land Office. The fees of the Register and the Receiver shall be five dollars each for filling and acting upon each application for patent or adverse claim filed, and they shall be allowed the amount fixed by law for reducing testimony to writing, when done in the land office, such fees and allowances to be paid by the respective parties; and no other fees shall be charged by them in such cases. Nothing in this act shall be construed to enlarge or affect the rights of either party in regard to any property in controversy at the time of the passage of this act, or of the act entitled "An act granting the right of way to ditch and canal owners over the public lands, and for other purposes," approved July twenty-sixth, eighteen hundred and sixty-six, nor shall this act affect any right acquired under said act; and nothing in this act shall be construed to repeal, impair, or in any way affect the provisions of the act entitled "An act granting to A. Sutro the right of way and other privileges to aid in the construction of a draining and exploring tunnel to the Comstock Lode, in the State of Nevada," approved July twenty-fifth, eighteen hundred and sixty-six.

SEC. 13. That all affidavits required to be made under this act, or the act of which it is amendatory, may be verified before any officer authorized to administer oaths within the land district where the claims may be situated, and all testimony and proofs may be taken before any such officer, and when duly certified by the officer taking the same, shall have the same force and effect as if taken before the Register and Receiver of the land office. In cases of contest as to the mineral or agricultural character of land, the testimony and proofs may be taken as herein provided, on

personal notice of at least ten days to the opposing party; or if said party cannot be found, then by publication of at least once a week for thirty days in a newspaper to be designated by the Register of the land office as published nearest to the location of such land; and the Register shall require proof that such notice has been given.

SEC. 14. That where two or more veins intersect or cross each other, priority of title shall govern, and such prior location shall be entitled to all ore or mineral contained within the space of intersection: *Provided, however,* That the subsequent location shall have the right of way through said space of intersection for the purposes of the convenient working of said mine: *And provided, also,* that where two or more veins unite, the oldest or prior location shall take the vein below the point of union, including all the space of intersection.

SEC. 15. That where non-mineral land, not contiguous to the vein or lode, is used or occupied by the proprietor of such vein or lode for mining or milling purposes, such non-adjacent surface ground may be embraced and included in an application for a patent for such vein or lode, and the same may be patented therewith, subject to the same preliminary requirements as to survey and notice as are applicable under this act to veins or lodes: *Provided,* That no location hereafter made of such non-adjacent land shall exceed five acres, and payment for the same must be made at the same rate as fixed by this act for the superficies of the lode. The owner of a quartz mill or reduction works, not owning a mine in connection therewith, may also receive a patent for his mill site, as provided in this section.

SEC. 16. That all acts, and parts of acts, inconsistent herewith are hereby repealed; *Provided,* That nothing contained in this act shall be construed to impair, in any way, rights or interests in mining property acquired under existing laws.

The prospector having found what he believes to be a mineral lode, proceeds to have it surveyed, sticks, stakes, posts and records his notices, and in all respects conforms to the foregoing law. The next step to be taken is to develop the claim. If he is able to do so alone, or if he prefers to prospect the location with a view of determining more definitely its value before disposing of any part thereof, a shaft, or an incline, or a tunnel, is commenced, with the intention of reaching and opening up the ledge below the line of cropping on which locations are usually made. Sooner or later, however, the time comes for the incorporation of a mining company. This is done under the law of the State where the principal place of business is to be. Most companies operating on the Comstock, and, in fact, on the coast, have been organized in San Francisco, under the laws of the State of California. A certified copy of the articles of incorporation, filed in the office of the County Recorder of the county where the claim lies, completes the formalities required.

Claims are usually prospected and finally opened up through either a shaft or tunnel. In sinking, the dirt is shoveled, or rock blasted out, usually for the first hundred feet, and raised to the surface by a double-cranked windlass and a bucket. Should water be encountered, it is bailed out in the same way. The next step is to procure hoisting machinery. Usually a double-cylindrical portable or locomotive engine, with reel for the winding and unwinding of the cable, is put in position. This, or a donkey engine, having been placed for hoisting out the debris, the work proceeds as before. If the shaft be a permanent working shaft, it usually consists of two, three, or four compartments, four feet by five feet, and, in some instances, five feet by six feet. These shafts are timbered up as sunk, by square framed timbers, in sets, each set extending five feet in depth. The sides are then made solid by plank, or lagging. If the double-cylindrical engine is used, this may be continued down 1,200 to 1,500 feet, without other machinery, unless water is struck in greater quantities than can be bailed out by the bucket, barrel, or bailing tank. Usually cages, with cars for receiving the rock excavated, are used after the first few hundred feet are gained. These cages are provided with safeties, so arranged that if the cable should break, the safeties would catch into the guides of scantling running up and down the shaft, and prevent any disaster. These safeties are capable of supporting many tons weight.

A winze is a connection made between two levels of a mine, and only differs from a shaft in not coming to the surface. It is sunk in the same manner. Sometimes it is commenced on a lower level and excavated upwards; it is then called an upraise. A drift differs from a tunnel as a winze does from a shaft, and is usually run to or along the sides of the ledges. Crosscuts are drifts run across the ledges. Stations, are excavations from the shaft from which the drifts are run. An incline is a shaft or winze following the pitch of the ledge. Inclines and winzes are timbered up like shafts; drifts and crosscuts are usually timbered on the sides and overhead; the distance of the sets apart is determined by the nature of the ground run through; if it is a spongy or soft formation the sets are very close together—the object being in using all timbers to prevent caves. Many places in hard solid rock need no timbers whatever. Ores are excavated through stopes. As fast as the excavations are made sets of heavy, square timbers are put in to prevent caves and stay the ore-breasts; these are necessarily very strong and thoroughly braced with timbers running diagonally across each set, and sometimes the space is almost filled solid with timbers; after the stopes are closed waste rock is dumped in and the space entirely filled. Stopping is done by floors one above the other, with stairs for the workmen to ascend, and with chutes down which the ore is thrown till the lower floor is reached, where it is received into cars, run to the cages, and hoisted to the surface.

Wherever blasting is required the work of drilling can be greatly facilitated by using the Burleigh or Ingersoll drills, which are driven by steam or compressed air. These drills are used in almost all the old mines which have steam hoisting works; the steam is used to run air-compressors, from which the compressed air is conducted in tubes to the required level; air engines are also run in this manner, and hoisting and other machinery driven thereby, as well as small pumps to raise the water up to the tanks which are reached by the large pump from the surface. The air thus introduced and used as a motive power to drive these drills and machinery answers a double purpose, as it furnishes a motive power for the machinery and is then consumed by the miners. There are also various other ways of cooling the mines; air from the surface is forced down by blowers; water blasts are arranged to create currents of air; and now an experiment is being tried by exhausting the

foul air from below to induce fresh air down the shaft, and in that manner produce ventilation. Since it is natural for the warm air to rise this seems the more feasible plan.

The great plague of the miners is water. An idea of the expense which is incurred to get rid of this plague may be obtained from statistics given in connection with some of the principal mines, and especially the great Combination shaft of the Chollar-Potosi and other mines. No machinery would be sufficiently powerful or material strong enough to lift the water of the mines the whole distance at once; so it is raised part way, received in tanks, and then again elevated till the surface is reached. It has been found most economical to place these tanks 200 feet apart, so that to raise water from the depth of 2,000 feet it is usually pumped over ten times. There are in fact ten pumps, placed 200 feet each below the other, and all running at the same time and making their strokes together, and by the same pump rod. Plunger pumps are fast superceding all others on the Comstock. To enable the miners to sink when there is water in considerable quantities running into the shaft, an adjustable suction pipe is extended down from the pump immediately above; this is wound with rope, to prevent being injured by the blasts. Sometimes the lower part of this suction pipe is composed of iron tube, perforated so as to admit the water, and so thick and heavy as to stand the explosion of powder and the force of the flying rock without injury. Of course the general use of common black powder where is so much water as is usual in the mines is out of the question. Happily, such explosives as the Hercules and Giant Powder are not affected by water, and hence these are used almost exclusively in the mines.

The manner of opening up mines and obtaining the ores having been thus imperfectly given, it remains to follow the ore through the mills till the bullion is produced. Although the process of milling gold-bearing quartz is much simpler than that of reducing silver ores, one description will be sufficient to give the reader a general idea of the subject, it being simply premised that the amalgamation of gold is carried on by causing the pulp, as fast as produced by the stamps, to flow in a thin sheet over quicksilver, the minute particles of gold being taken up thereby, and the amalgamation being complete on the platform, instead of being effected by the tedious process hereafter mentioned in relation to silver. The rock is wet-crushed, in both instances, by being subjected to the stamps. These stamps are usually of 800 pounds weight; but the California mill is deriving very great and satisfactory results from an increase of weight. These stamps are raised by a revolving cam, acting under a shoulder on bar of the stamp, which at the same time turns the stamp partially round each stroke. The weight of the stamp gives the blow, which is received by the rock, and upon a die placed on the battery bed below. The rock is either shoveled under the stamps or fed by self-feeders. The latter method is preferable, because more economical, and because the ore is distributed more evenly than can be done in any other manner. Of course, the wear of the stamp and die is very great; and hence, the face of the stamp is separate and can be readily replaced. Steel shoes and dies are at present rapidly coming into use, and are found much preferable to those cast-iron formerly used.

The pulp passes, from under the stamps, through screens, into distributing sluices, which convey it to the settling tanks. From the tanks it is shoveled out upon the platforms, in front of the pans. These pans, in the more approved methods, where steam is used for a motive power, have steam bottoms, and are arranged so as to admit live steam into the pulp or under the bottom. These pans are charged with the pulp, and quicksilver put in according to the richness of the ore. Here the whole mass is kept in motion till thoroughly mingled, when it is drawn off into settlers, there generally being one of these to each pair of pans. Here the stirring process is continued till the amalgam settles, the top being drawn off into agitators, stirred up and settled again, and thence into the sluices. From the settlers, the amalgam is put into strainers, which allow the excess of quicksilver and all foreign substances, except the amalgam, to pass through. The amalgam is then taken to the retort room and heated, the quicksilver escaping in fumes, which pass through a pipe surrounded by cold water, where it is condensed into its original form, and taken back to the pans to be used over and over again. After the quicksilver escapes, the crude bullion which remains is taken to the assay-office, melted, cast in bars, assayed, its degrees of fineness stamped upon it, and its value. It is now ready for market. Not even by the process above sketched is all the value taken from the pulp. What remains is carried by the water used in crushing and amalgamating, over hundreds of feet of blankets, where the tailings are collected. These are of sufficient value to be again taken up and submitted to the second process of amalgamation. Besides the foregoing ordinary process of reducing free ores, like those of the Comstock, there are a great many processes which are attracting the attention of mining men, and those especially interested in the reduction of base and refractory ores. Chief among these are the dry process of Almarin B. Paul, and what is known as the Fryer process, more particular mention of which will be found elsewhere.

PROVISIONS OF THE STATE CODE.

SEC. 285. Private corporations may be formed by the voluntary association of any five or more persons in the manner prescribed in this article. A majority of such persons must be residents of this State.

SEC. 286. Private corporations may be formed for any purpose for which individuals may lawfully associate themselves.

SEC. 287. Any corporation existing on the first day of January, one thousand eight hundred and seventy-three, formed under the laws of this State, and still existing, which has not already elected to continue its existence, under the provisions of this Code applicable thereto, may, at any time hereafter, make such election by the unanimous vote of all its directors, or such election may be made at any annual meeting of the stockholders, or members, or at any meeting called by the directors expressly for considering the subject, if voted by stockholders representing a majority of the capital stock, or by a majority of the members, or may be made by the directors upon the written

consent of that number of such stockholders or members. A certificate of the action of the directors, signed by them and their secretary, when the election is made by their unanimous vote, or upon the written consent of the stockholders or members, or a certificate of the proceedings of the meeting of the stockholders or members, when such election is made at any such meeting, signed by the chairman and secretary of the meeting, and a majority of the directors, must be filed in the office of the clerk of the county where the original articles of incorporation are filed and a certified copy thereof must be filed in the office of the secretary of state; and thereafter the corporation shall continue its existence under the provisions of this Code which are applicable thereto, and shall possess all the rights and powers, and be subject to all the obligations, restrictions, and limitations prescribed thereby.

SEC. 290. Articles of incorporation must be prepared, setting forth: First, the name of the corporation. Second, the purpose for which it is formed. Third, the place where its principal business is to be transacted. Fourth, the term for which it is to exist, not exceeding fifty years. Fifth, the number of its directors or trustees, and the names and residence of those who are appointed for the first year; *provided*, at any time during the existence of the corporation, the number of the directors may be increased, in corporations for profit, by a majority of the stockholders of the corporation, to any number not exceeding eleven, who must be members of the corporation, whereupon a certificate, stating the number of directors, must be filed, as provided for in section two hundred and ninety-six, for the filing of the original articles of incorporation. Sixth, the amount of its capital stock, and the number of shares into which it is divided. Seventh, if there is a capital stock, the amount actually subscribed, and by whom.

SEC. 295. Before the secretary of State issues to any such corporation a certificate of the filing of articles of incorporation, there must be filed in his office an affidavit of the president, secretary, or treasurer named in the articles, that the required amount of the capital stock thereof has been actually subscribed, and ten per cent. thereof actually paid to a treasurer for the benefit of the corporation.

SEC. 299. No corporation hereafter formed under the provisions of this chapter shall purchase, locate, or hold property in any county of this State, without filing a certified copy of the certificate of its articles of incorporation in the office of the county clerk of the county in which such property is situated, within sixty days after such purchase or location is made; and every corporation now in existence must, within ninety days after the passage of this act, file a certified copy of the certificate of its articles of incorporation, as provided in this section; and a certified copy of such copy shall, as evidence, have the same force and effect as a certified copy of the original. Any corporation failing to comply with the provisions of this section shall not maintain or defend any action or proceeding in relation to such property.

SEC. 301. Every corporation formed under this title must, within one month after filing articles of incorporation, adopt a Code of by-laws for its government not inconsistent with the Constitution and laws of this State. The assent of stockholders representing a majority of all the subscribed capital stock, or of a majority of the members, if there be no capital stock, is necessary to adopt by-laws, if they are adopted at a meeting called for that purpose; and in the event of such meeting being called, two weeks' notice of the same by advertisement in some newspaper published in the county in which the principal place of business of the corporation is located, or if none is published therein, then in a paper published in an adjoining county, must be given by order of the acting president. The written assent of the holders of two thirds of the stock, or of two thirds of the members, if there be no capital stock, shall be effectual to adopt a code of by-laws without a meeting for that purpose.

SEC. 307. All elections must be by ballot, and every stockholder shall have the right to vote in person or by proxy the number of shares standing in his name, as provided in section three hundred and twelve of this Code, for as many persons as there are directors to be elected, or to cumulate said shares and give one candidate as many votes as the number of directors multiplied by the number of his shares of stock shall equal, or to distribute them on the same principle among as many candidates as he shall think fit. In corporations having no capital stock, each member of the corporation may cast as many votes for one director as there are directors to be elected, or may distribute the same among any or all of the candidates. In either case, the directors receiving the highest number of votes shall be declared elected.

SEC. 309. The directors of corporations must not make dividends, except for the surplus profits arising from the business thereof; nor must they divide, withdraw, or pay to the stockholders, or any of them, any part of the capital stock; nor must they create debts beyond their subscribed capital stock, or reduce or increase the capital stock, except as hereinafter specially provided. For a violation of the provisions of this section, the directors under whose administration the same may have happened (except those who may have caused their dissent therefrom to be entered at large on the minutes of the directors at the time, or were not present when the same did happen) are, in their individual and private capacity, jointly and severally liable to the corporation, and to the creditors thereof, in the event of its dissolution, to the full amount of the capital stock so divided, withdrawn, paid out, or reduced, or debt contracted; and no statute of limitations is a bar to any suit against such directors for any sums for which they are made liable by this section. There may, however, be a division and distribution of the capital stock of any corporation which remains after the payment of all its debts, upon its dissolution or the expiration of its term of existence.

SEC. 310. No director shall be removed from office, unless by a vote of two thirds of the members, or of stockholders holding two thirds of the capital stock, at a general meeting held after previous notice of the time and place, and of the intention to propose such removal. Meetings of stockholders for this purpose may be called by the president, or by a majority of the directors, or by members or stockholders holding at least one half of the votes. Such calls must be in writing, and addressed to the secretary, who must thereupon give notice of the time, place, and object of the meeting, and by whose order it is called. If the secretary refuse to give the notice, or if there is none, the call may be addressed directly to the members or stockholders, and be served as a notice, in

which case it must specify the time and place of meeting. The notice must be given in the manner provided in section 301 of this title, unless other express provision has been made therefor in the by-laws. In case of removal, the vacancy may be filled by election at the same meeting.

SEC. 312. At all elections or votes had for any purpose there must be a majority of the subscribed capital stock, or of the members, represented, either in person or by proxy in writing. Every person acting therein, in person or by proxy or representative, must be a member thereof or a *bona fide* stockholder, having stock in his own name on the stock books of the corporation at least ten days prior to the election. Any vote or election had other than in accordance with the provisions of this article is voidable at the instance of absent or any stockholders or members, and may be set aside by petition to the District Court of the county where the same was held. Any regular or called meeting of the stockholders or members may adjourn from day to day, or from time to time, if for any reason there is not present a majority of the subscribed stock or members or no election had—such adjournment and the reasons thereof being recorded in the journal of proceedings of the board of directors.

SEC. 316. Any officer of a corporation who wilfully gives a certificate, or wilfully makes an official report, public notice, or entry in any of the records or books of the corporation, concerning the corporation or its business, which is false in any material representation, shall be liable for all the damages resulting therefrom to any person injured thereby; and if two or more officers unite or participate in the commission of any of the acts hereign designated, they shall be jointly and severally liable.

SEC. 322. Each stockholder of a corporation is individually and personally liable for such portions of its debts and liabilities as the amount of stock or shares owned by him bears to the whole of the subscribed capital stock or shares of the corporation, and for a like proportion only of each debt or claim against the corporation. Any creditor of the corporation may institute joint or several actions against any of its stockholders, for the proportion of his claim payable by each, and in such action the court must ascertain the proportion of the claim or debt for which each defendant is liable, and a several judgment must be rendered against each, in conformity therewith. If the stockholder pays his proportion of any debt due from the corporation, incurred while he was such stockholder, he is relieved from any further personal liability for such debt, and if an action has been brought against him upon such debt, it shall be dismissed, as to him, upon his paying the costs, or such proportion thereof as may be properly chargeable against him. The liability of each stockholder is determined by the amount of stock or shares owned by him at the time the debt or liability was incurred; and such liability is not released by any subsequent transfer of stock. The term stockholder, as used in this section, shall apply not only to such persons as appear by the books of the corporation to be such, but also to every equitable owner of stock, although the same appear on the books in the name of another; and also to every person who has advanced the instalments or purchase-money of stock in the name of the minor, so long as the latter remains a minor; and also to every guardian, or other trustee, who voluntarily invests any trust funds in the stock. Trust funds in the hands of a guardian, or trustee, shall not be liable under the provisions of this section, by reason of any such investment; nor shall the person for whose benefit the investment is made be responsible in respect to the stock until he becomes competent and able to control the same; but the responsibility of the guardian or trustee making the investment shall continue until that period. Stock held as collateral security, or by a trustee, or in any other representative capacity, does not make the holder thereof a stockholder within the meaning of this section, except in the cases above mentioned, so as to charge him with any proportion of the debts or liabilities of the corporation; but the pledgor, or person or estate represented, is to be deemed the stockholder, as respects such liability. In corporations having no capital stock, each member is individually and personally liable for his proportion of its debts and liabilities, and similar actions may be brought against him, either alone or jointly with other members, to enforce such liability, as by this section may be brought against one or more stockholders, and similar judgments may be rendered. The liability of each stockholder of a corporation formed under the laws of any other State or Territory of the United States, or of any foreign country, and doing business within this State, shall be the same as the liability of a stockholder of a corporation created under the Constitution and laws of this State.

SEC. 324. Whenever the capital stock of any corporation is divided into shares, and certificates therefor are issued, such shares of stock are personal property, and may be transferred by indorsement by the signature of the proprietor, or his attorney or legal representative, and delivery of the certificate; but such transfer is not valid, except between the parties thereto, until the same is so entered upon the books of the corporation as to show the names of the parties by and to whom transferred, the number or designation of the shares, and the date of the transfer.

SEC. 325. Shares of stock in corporations held or owned by a married woman may be transferred by her, her agent, or attorney, without the signature of her husband, in the same manner as if such married woman were a *femme sole*. All dividends payable upon any shares of stock of a corporation held by a married woman may be paid to such married woman, her agent or attorney, in the same manner as if she were unmarried, and it is not necessary for her husband to join in a receipt therefor; and any proxy or power given by a married woman, touching any shares of stock of any corporation owned by her, is valid and binding without the signature of her husband, the same as if she were unmarried.

SEC. 332. No one assessment must exceed ten per cent. of the amount of the capital stock named in the articles of incorporation, except in the cases in this section otherwise provided for as follows: If the whole capital of a corporation has not been paid up, and the corporation is unable to meet its liabilities or to satisfy the claims of its creditors, the assessment may be for the full amount unpaid upon the capital stock; or if a less amount is sufficient, then it may be for such a percentage as will raise the amount.

SEC. 333. No assessment must be levied while any portion of a previous one remains unpaid unless the power of the corporation has been exercised in accordance with the provisions of this

article for the purpose of collecting such previous assessment. The collection of the previous assessment has been enjoined.

SEC. 334. Every order levying an assessment must specify the amount thereof, when, to whom, and where payable; fix a day, subsequent to the full term of publication of the assessment notice, on which the unpaid assessments shall be delinquent, not less than thirty nor more than sixty days from the time of making the order levying the assessment; and a day for the sale of delinquent stock, not less than fifteen nor more than sixty days from the day the stock is declared delinquent.

SEC. 335. Upon the making of the order, the secretary shall cause to be published a notice thereof, in the following form:

(Name of corporation in full. Location of principal place of business.) Notice is hereby given, that at a meeting of the directors, held on the (date), an assessment of (amount) per share was levied upon the capital stock of the corporation, payable (when, to whom, and where). Any stock upon which this assessment shall remain unpaid on the day (fixed) will be delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on the (day appointed), to pay the delinquent assessment, together with costs of advertising and expenses of sale.

(Signature of secretary, with location of office.)

SEC. 336. The notice must be personally served upon each stockholder, or, in lieu of personal service, must be sent through the mail, addressed to each stockholder at his place of residence, if known, and if not known at the place where the principal office of the corporation is situated, and be published once a week, for four successive weeks, in some newspaper of general circulation and devoted to the publication of general news, published at the place designated in the articles of incorporation as the principal place of business, and also in some newspaper published in the county in which the works of the corporation are situated, if a paper be published therein. If the works of the corporation are not within a State or Territory of the United States, publication in a paper of this place, where they are situated is not necessary. If there be no newspaper published at the place designated as the principal place of business of the corporation, then the publication must be made in some other newspaper of the county, if there be one, and if there be none, then in a newspaper published in an adjoining county.

SEC. 337. If any portion of the assessment mentioned in the notice remains unpaid on the day specified therein for declaring the stock delinquent, the secretary must, unless otherwise ordered by the board of directors, cause to be published in the same papers in which the notice hereinbefore provided for shall have been published, a notice substantially in the following form:

(Name in full. Location of principal place of business.) NOTICE.—There is delinquent upon the following described stock, on account of assessment levied on the (date), (and assessments levied previous thereto, if any), the several amounts set opposite the names of the respective shareholders, as follows: (Names, number of certificate, number of shares, amount.) And in accordance with law (and on order of the board of directors, made, on the [date], if any such order shall have been made), so many shares of each parcel of such stock as may be necessary, will be sold, at the (particular place), on the (date), at (the hour) of such day, to pay delinquent assessments thereon, together with costs of advertising and expenses of the sale.

(Name of secretary, with location of office.)

SEC. 338. The notice must specify every certificate of stock, the number of shares it represents, and the amount due thereon, except where certificates may not have been issued to parties entitled thereto, in which case the number of shares and amount due thereon, together with the fact that the certificates for such shares have not been issued, must be stated.

SEC. 339. The notice, when published in a daily paper, must be published for ten days, excluding Sundays and holidays, previous to the day of sale. When published in a weekly paper, it must be published in each issue for two weeks previous to the day of sale. The first publication of all delinquent sales must be at least fifteen days prior to the day of sale.

SEC. 340. By the publication of the notice, the corporation acquires jurisdiction to sell and convey a perfect title to all of the stock described in the notice of sale upon which any portion of the assessment or costs of advertising remains unpaid at the hour appointed for the sale, but must sell no more of such stock than is necessary to pay the assessments due and costs of sale.

SEC. 341. On the day, at the place, and at the time appointed in the notice of sale, the secretary must, unless otherwise ordered by the directors, sell or cause to be sold at public auction, to the highest bidder for cash, so many shares of each parcel of the described stock as may be necessary to pay the assessment and charges thereon, according to the terms of sale; if payment is made before the time fixed for sale, the party paying is only required to pay the actual cost of advertising, in addition to the assessment.

SEC. 342. The person offering at such sale to pay the assessment and costs for the smallest number of shares or fraction of a share is the highest bidder, and the stock purchased must be transferred to him on the stock books of the corporation, on payment of the assessment and costs.

SEC. 343. If, at the sale of stock, no bidder offers the amount of the assessments and costs and charges due, the same may be bid in and purchased by the corporation, through the secretary, president, or any director thereof, at the amount of the assessments, costs, and charges due; and the amount of the assessments, costs, and charges must be credited as paid in full on the books of the corporation, and entry of the transfer of the stock to the corporation must be made on the books thereof. While the stock remains the property of the corporation it is not assessable, nor must any dividends be declared thereon; but all assessments and dividends must be apportioned upon the stock held by the stockholders of the corporation.

SEC. 344. All purchases of its own stock made by any corporation vest the legal title to the same in the corporation; and the stock so purchased is held subject to the control of the stockholders, who may make such disposition of the same as they deem fit, in accordance with the by-laws of the corporation or vote of a majority of all the remaining shares. Whenever any portion of the capital stock of a corporation is held by the corporation by purchase, a majority of the remaining shares is a majority of the stock for all purposes of election or voting on any question at a stockholders' meeting.]

SEC. 345. The dates fixed in any notice of assessment or notice of delinquent sale, published ac-

ording to the provisions hereof, may be extended from time to time for not more than thirty days, by order of the directors, entered on the records of the corporation; but no order extending the time for the performance of any act specified in any notice is effectual unless notice of such extension or postponement is appended to and published with the notice to which the order relates.

SEC. 346. No assessment is invalidated by a failure to make publication of the notices hereinbefore provided for, nor by the non-performance of any act required in order to enforce the payment of the same; but in case of any substantial error or omission in the course of proceedings for collection, all previous proceedings, except the levying of the assessment, are void, and publication must be begun anew.

SEC. 347. No action must be sustained to recover stock sold for delinquent assessments, upon the ground of irregularity in the assessment, irregularity or defect of the notice of sale, or defect or irregularity in the sale, unless the party seeking to maintain such action first pays or tenders to the corporation, or the party holding the stock sold, the sum for which the same was sold, together with all subsequent assessments which may have been paid thereon and interest on such sums from the time they were paid; and no such action must be sustained unless the same is commenced by the filing of a complaint and the issuing of a summons thereon within six months after such sale was made.

SEC. 348. The publication of notice required by this article may be proved by the affidavit of the printer, foreman, or principal clerk of the newspaper in which the same was published; and the affidavit of the secretary or auctioneer is *prima facie* evidence of the time and place of sale, of the quantity and particular description of the stock sold, and to whom, and for what price, and of the fact of the purchase money being paid. The affidavits must be filed in the office of the corporation, and copies of the same, certified by the secretary thereof, are *prima facie* evidence of the facts therein stated. Certificates signed by the secretary, and under the seal of the corporation, are *prima facie* evidence of the contents thereof.

SEC. 349. On the day specified for declaring the stock delinquent, or at any time subsequent thereto and before the sale of the delinquent stock, the board of directors may elect to waive further proceedings under this chapter for the collection of delinquent assessments, or any part or portion thereof, and may elect to proceed by action to recover the amount of the assessment and the costs and expenses already incurred, or any part or portion thereof.

SEC. 378. In addition to the records required to be kept by the preceding section, corporations for profit must keep a book, to be known as the "Stock and Transfer Book," in which must be kept a record of all stock; the names of the stockholders, or members, alphabetically arranged; instalments paid or unpaid; assessments levied and paid or unpaid; a statement of every alienation, sale, or transfer of stock made, the date thereof, and by and to whom; and all such other records as the by-laws prescribe.

SEC. 586. Any corporation organized in this State for the purpose of mining or carrying on mining operations in or without this State, may establish and maintain agencies in other States of the United States, for the transfer and issuing of their stock; and a transfer or issue of the same at any such transfer agency, in accordance with the provisions of its by-laws, is valid and binding as fully and effectually for all purposes as if made upon the books of such corporation at its principal office within this State. The agencies must be governed by the by-laws and the directors of the corporation.

SEC. 587. All stock of any such corporation, issued at a transfer agency, must be signed by the president and secretary of the corporation, and countersigned at the time of its issue by the agent having charge of the transfer agency. No stock must be issued at a transfer agency unless the certificate of stock, in lieu of which the same is issued, is at the time surrendered for cancellation.

AN ACT TO PROTECT STOCKHOLDERS AND PERSONS DEALING WITH CORPORATIONS IN THIS STATE.

SECTION 1. Any superintendent, director, secretary, manager, agent, or other officer of any corporation formed or existing under the laws of this State, or transacting business in the same, and any person pretending or holding himself out as such superintendent, director, secretary, manager, agent, or other officer, who shall willfully subscribe, sign, indorse, verify, or otherwise assent to the publication, either generally or privately, to the stockholders or other persons dealing with such corporation or its stock, any untrue or willfully and fraudulently exaggerated report, prospectus, account, statement of operations, values, business, profits, expenditures, or prospects, or other paper or document intended to produce or give, or having a tendency to produce or give, to the shares of stock in such corporation a greater value or less apparent or market value than they really possess, or with the intention of defrauding any particular person or persons, or the public, or persons generally, shall be deemed guilty of a felony, and on conviction thereof shall be punished by imprisonment in the State prison, or a county jail, not exceeding two years, or by fine not exceeding five thousand dollars, or by both, provided that this act shall be construed to apply only to corporations whose capital stock has been or shall hereafter be listed at a Stock Board or Stock Exchange in this State, or whose shares be regularly bought and sold in the stock market of this State.

THE DISCOVERY OF GOLD IN CALIFORNIA.

Letter of Mrs. Wimmer.—Tardy Communication.—Excitement at the East and all over the Civilized World.—Rush for California.—Arrival of Pioneers.—Fortunate Miners.—Production of Gold.

On the 19th day of January, 1848, James W. Marshall, at work building a mill on the banks of the American River, for Gen. John A. Sutter, picked up in the mill race through which the water had been running, a specimen of bright yellow metal. At that time there was living at Sutter's

Fort a Mrs. Elizabeth Jane Wimmer, who had lived at the gold mines in Georgia. Anxious to know if the specimen he had found was gold, he sent it to Mrs. Wimmer to be examined. The following letter from that lady explains itself :

CAMBRIA, SAN LUIS OBISPO COUNTY, MAY 10, 1876.

EDITOR MINING REVIEW :

Dear Sir—In answer to your letter asking for information concerning the gold discovery, all I can say is that Mr. Marshall found a piece of gold, and knowing I had lived at the gold mines in Georgia, sent it to me to know what it was. As soon as I saw it I said, This is gold ; but to satisfy them I threw it into a pot of soap I was boiling. After boiling all day the soap was set to cool. The next morning one of the work hands said to Mr. Marshall, "I heard some gold had been found." Marshall replied : "I sent something to the house, to Jane, to be tested," and that was all he knew about it. They then asked me where the piece of metal was, and I told them in the soap pot, where I had put it to show that it would not corrode. Marshall said he guessed it was eaten up by the lye ; but when taken out it was bright and clean. I could relate many more interesting circumstances connected with the finding of gold, but if they were published the world over I fear they would be no benefit to me. When last in San Francisco I obtained a number of certificates certifying that the piece of gold in my possession was the first specimen discovered on the banks of the American River. I left it with the Pioneer Society, who were to pay me one thousand dollars for it ; but I have not heard from them since. Very respectfully,

ELIZABETH JANE WIMMER.

This discovery, destined to mark an epoch in the world's history, took place on the 19th of January, 1848. But the news did not reach the Eastern States until the December following, when it was authoritatively announced in the President's annual message, and created an excitement scarcely excelled by the announcement of the firing upon Sumpter. The first passengers that left New York for the new El Dorado were Mr. Alfred Robinson and about twenty companions, who had already chartered the bark *John Benton* to leave them at Chagres, whence they were to cross the Isthmus and meet the steamer *California* at Panama. She had already sailed for San Francisco, *via* the Straits of Magellan. She arrived in this port on the 28th of February, 1849, more than thirteen months after the discovery of gold, so tardy was the spread of intelligence and the transit of passengers from the Eastern to the Western shore of our continent in those days. And but for the fact that a new line of steamers had just been started to carry the mails from Panama to California and Oregon, some time longer would have transpired before the gold-seekers from the East would have reached California. How wonderful the contrast of those days—only a little more than a quarter of a century since—with the present time, when news from the East, even from the far Orient, across oceans and over desert plains, makes the circuit of the earth ahead of laggard Time ; when thought travels over the wires, far outstripping in its flight the tardy motion of the earth in its revolution upon its axis in twenty-four hours. But while the telegraph annihilates time and space in the transmission of intelligence, the speed attained in the transport of passengers across the continent is no less, if not even more wonderful still. Instead of the tedious trip of six months, across the plains—the shortest route to California prior to the establishment of the Panama line of Steamers—we are now startled with the announcement that the passage has been made safely in eighty-three hours. If these changes, that could not have been foreseen, and which in a great measure owe their existence to the discovery of gold in California, have taken place in so short a time, what may we not reasonably anticipate in the next quarter of a century, with our present and ever-increasing yield of the precious metals ?

But while the news of the gold discovery was slowly making its way across the continent, it was advancing with far more rapid strides over the broad Pacific. In every direction where supplies could be obtained for a people who had abandoned all other occupations but gold-digging, ships were speeding even to the uttermost limits of the Pacific Ocean, carrying the glad tidings of the abundance of gold in California. Adventurers came flocking from every country upon its borders. From Mexico, Central America, Peru, Chili, China, Australia and the Pacific Islands, vessels of every size, freighted with merchandise and with living souls, turned their prows toward the new El Dorado, and came pouring into the Golden Gate.

In a few months the little pueblo of Yerba Buena had become completely metamorphosed. A motley crew, the representatives of various nations, thronged the shores of this hitherto quiet little cove ; while on its tranquil bosom thousands of maritime craft were anchored, from the merest cockle-shell, in which none but desperate gold-seekers would have dared to risk their lives, to ships of a thousand tons burden.

The population of the State, that at the time of the gold discovery did not exceed 14,000, had more than doubled by the first of January, 1849, and ten millions of gold had been extracted, the rocker, pan and crevice knife being the only implements employed.

Is it to be wondered that by this time the whole civilized world was astounded ? Thousands of ships from all the nations of the earth, and loaded with passengers, were heading for California. After the pioneer steamship, the *California*, came the *Oregon* on the 31st day of March, with 350 passengers ; and the *Panama*, with as many as could crowd on board, arrived in our bay on the 4th day of August following. The scramble for gold now began in earnest ; lawyers, doctors and ministers joined in the race ; and so potent was the gold infatuation, that some who had forsaken a sacred calling at home did not hesitate to seek it by presiding at the gaming table.

At this time the miners in the mines were averaging about \$25 per day, and there were many who took out small fortunes in a few months, and returned to their homes at the East. The production of gold went on increasing from year to year : forty millions in 1849, fifty millions in 1850, fifty-five millions in 1851, and in 1853 it reached its maximum, sixty-five millions.

Great improvements were annually made in the method of mining. Long toms and sluices superseded the pan and rocker. The "bars" (beds of alluvium deposited by the changing course of the stream) were first exhausted. Rivers and creeks were dammed and canals cut along their

banks, into which the streams were turned and their beds left dry, to be explored. Ditches were cut and flumes erected, to bring water to the surface diggings. As these became exhausted, or were left for Chinamen to clean up (a ruinous policy, that has retarded the prosperity of our State), the more adventurous miners were moving onward toward the Sierras, in the pursuit of more permanent fields: the blue gravel beds and the auriferous deposits worked by the hydraulic process.

THE PACIFIC COAST.

BY ALMARIN B. PAUL.

The author of the "Vestiges of Creation," long before this coast was settled by its present population, advanced the idea that on the portion of our continent lying west of the Rocky Mountains, and bordering on the Pacific ocean, would grow a people who for physical power and mental force would surpass all other portions of the globe. More than a million people are now upon this side, and although we of to-day cannot arrogate to ourselves this distinguished standard of greatness, and will leave it to those of the coming years, yet there are brains in our midst whose spreading powers have already electrified the world by their bold enterprise and successful achievements. And here I refer to Messrs. Stanford, Crocker, Huntington and Hopkins—men who, in the face of the best advice of friends to the contrary, and unaided by friendly capital in the first instance, threw their all into the venture, started, pushed, and finally completed one of the boldest feats of the age—the building of the Central Pacific Railroad—the spanning of the Sierra Nevadas, overcoming their rugged heights, and bidding defiance to mountains of almost perpetual snow. Some will say Government money built it in part. Granted, but did it not take brains of no ordinary cast, first to grasp the enterprise, secondly, to form the plan of operation, thirdly, the force, tact and capacity to draw the millions piled on millions to execute and complete it? I never travel over this line but there goes forth a throb of pleasure and appreciation for the brains that conceived and executed it. Let them rear their palaces of beauty, and amass their millions, unenvied—they are the rewards of industry and intellectual force. Not only this, but the applause of the people should be for such men, who year after year, open new fields for the laboring element of three States and one Territory, and give employment to more than a thousand white men daily. Would it not be a splendid thing for labor if we had a few more such spirits on the coast, and should such benefits not be appreciated?

Our mining enterprises, too, though we are so young in years, are equal, in stupendous machinery, purposes, depth, yield of the precious metals, and wealth of our adventurers, and will compare with any part of the mining world. Our manufactures we have built up and worked against the odds of paying the highest rewards for labor of any country on the face of the globe.

To us travelers accord the tribute of being the most independent, off-hand, decided and free thinking of communities. It is said that the ocean, whose sight sets thought free, gives freedom to the people. That we are possessed of great individuality of thought there can be no question. Some who stop not to analyze our better natures declare us an unchristian people. Free thought rides in every brain, call it what you will, but Christianity comes in charitable outpourings when suffering humanity sends forth its appeal.

This is the race of to-day; we are the fathers of the coming generation who are to fill up the demands of this seer's prophecy. Building upon the foundation and record of more than a quarter of a century, such as this coast can present from the pioneer days to the present, much certainly can be expected from the future. We have plowed the cereal grounds, made smooth the rugged mountain passes, studded the by-ways with homes, planted the vine and fig tree, and perfumed the atmosphere with the orange blossom and the rose. We have built cities, opened commerce, started schools of learning, of arts and sciences, and now bid fair, soon, by our telescope, to sweep further into the mystic expanse than ever Herschell dreamed of. Thus we of to-day have made easy the life of the coming generation. That they will be thinkers and bold operators there are evidences on every side. The capacity, brightness and individuality of the educated youth of to-day challenges the world for their equal. It is natural it should be so, reared, as they are, upon a new soil, solid and invigorated by the vivacity originating in the life, spirit and dash of the golden days gone by, all going to make up strength, boldness and intellectuality. Our worse element of youth is physical and mental force needing direction and education in the higher ideas of civilized life.

In this live, individualized, solid, vigorous, metalized spirit of the land, that is going to make the future blaze with the boldest enterprises and grandest outpourings of brain force, and which will make this coast the central point around which the civilized world will revolve, San Francisco is yet to be the peer of London, and the monied power of the world. Central as we are between the great cities of the orient and the occident, and the depot of the trade and commerce of both, how can it be otherwise? It only wants time and brains to shape our destinies.

Our mountains are filled with treasure, and with more unlocked than the world scarce dreams of, which even now is filling our coffers monthly in the millions of new coined gold and silver.

The year 1900 will bring forth, in a measure, the realization of the prophecy, and then the hardy pioneers who laid the foundation of so splendid a future will be known only as the wild gold hunters of the nineteenth century.

Not in their day will these searchers after new sources of wealth—these builders of empire—be appreciated. Not in this century will they be wholly understood. Like the Spanish finders and explorers of a new world, it will require the glamour of years to soften the prejudices of the present, and insure to their memories that consideration and respect to which they are justly entitled. Their reward is in the future.

GOLD AND SILVER MINING.

BY ALMARIN B. PAUL.

It is refreshing to see gold and silver mining now assuming a respectable position among our industries, after the traducing it has had in years past, when a man was regarded as a fool to adhere to it. The press now speak of it as one of the great pursuits, and some begin to class it in point of legitimacy along-side of merchandizing and manufacturing—yes, farming. The fact is, statistics show that legitimate mining exceeds in certainty and percentage of success either of the above businesses. The New York *Herald* admits "that it gives a better showing than can be made by any other of the great industries of our country," and further says: "If we apply the test of \$4.00 per day for labor, every other industry would have been proved a total failure." This being so, why is it not a legitimate business? We of this coast are prosperous as a mining community, while the Atlantic is groaning under her financial pressure and crying for our gold.

Mining to-day, is of more importance, I may say more certain, than in the past, and from the fact that now mining is going down into the bowels of the earth not a few, but one, two, yes 3,000 feet! and the extracting of 500 to 1,000 tons of ore every 24 hours! We are getting our heads accustomed to bigger work, better machinery, and the putting of a "big" money by consolidating capital. We have learned the business, can master it and can teach the whole world the art of profitable mining.

The "trial of luck" we have had during the past twenty-five years, but more especially the past eighteen, has made a large body of Americans not only good miners, but good experts as well; and it can be said, further, that the first-class American miner is more complete in his money-making operations than the average foreigner who has been reared from childhood, in the pursuit. While the latter mines by old rules, the American miner makes a rule suited to surrounding circumstances. He can turn more short corners, and do more with less money. He soon solves the problem of profit or loss; if good, he holds and expands; if bad, he drops and tries elsewhere. His work is never so substantial; it does not "hold forever," and he never worries if it does not. He does not work for his grandchildren, but for the present, calculating his children will have the same privileges. Two men pounding at one drill does not suit his notions of economy, therefore the idea is suggested of doing the work single-handed; and, with his Hercules explosive, doubles the execution at half the expense.

The American miner, in fact, is getting tired of even single-hand drilling, and is about concluding, for the future, to stand by, "boss" the machine, and save his muscle. He is an average mechanic, studies mechanism, and wonders how to get rid of hard work; and by his genius, in the coming future, close by, we are going to mine wholly by machinery. In fact, we can do it now, both on a large and small scale, by the universal adoption of the Burleigh, Ingersoll and Slater drills.

The same spirit which seeks expedition and cheapness in mining applies equally as strongly in milling the ore. Instead of 30 and 40 drops a minute for our stamps, as in the past, we drive them up to 90 and a 100. Instead of taking from six to eight hours on every ton of silver ore we manipulate it on the run. Instead of loading a few bars monthly, we load wagons daily. Mining with us on the Pacific Coast, is a live, bold business, and it only wants coin, vim, brains and experience to make it profitable. Mining in a very short time will enlist attention of the people of all the States. And why should it not? It has a life, a speculation, a profit, a vitality about it well suited to the American character. This life and expedition has not been equaled on the face of the globe. It is purely American, and a condition which every country is readily falling into, and which every foreigner of snap loves. There is no pursuit Americans are as well adapted to as mining, and why not more turn their attention to it? What will make greater prosperity for the whole Union than for the American people to accept mining as a vastly important and legitimate business, as having as much reward for labor, and capital, as trade, agriculture, commerce or manufacture.

We have in the Union a vast idle capital, and we have in California, Nevada, Colorado, Arizona, Montana, Oregon, Idaho, and Wyoming, mineral fields expansive enough to absorb it all and open a mart for all the unemployed labor of every State, much of which can be had merely for the locating. We have also in the United States, East, West, North and South, a large idle yet industrious population, crying for work and prosperity, and who could soon turn a ready hand to gathering these treasures, relieving their wants and enriching not only themselves but all about them. To give to mining, as a people, the attention our mineral fields will justify and the pursuit merits, in less than a quarter of a century more we could deluge, the world with the precious metals.

GOLD MINING.

Effects of Gold Discovery upon Civilization.—Clipper Ships.—Steam Lines.—Prior Discovery of Gold.—Race for the Possession of California.—Placer Mines.—The Rocker.—Long Tom.—Sluices.—River-bed Mining.—Tunnel Mining.—Dead Rivers.—Hydraulic Mining.—Gold Quartz Mining.—Gold Bluff Quicksilver Mines.

Whatever may have been said of the evils that have been inflicted upon humanity by the thirst for gold, this fact stands out prominently, that just in proportion to the abundance of the precious metals, in the same ratio have the arts and sciences flourished, trade and commerce increased, the area of civilization been extended, and the comfort, intelligence and freedom of the masses augmented. "But for the discovery of gold in California," says McClellan, "more than likely San Francisco would be to-day an obscure outpost upon our western coast, Oregon

would still be a territory, Alaska still under the imperial rule of the Czar, and the great valleys of California untilled." He might have added, there would have been no railroad across the continent, and towns and villages would not have bordered the iron track. Where, but a few years since, the wild buffalo wandered undisturbed; where the war-whoop of the merciless savage struck terror to the hearts of the weary emigrant, toiling across the continent, to plant the flag and rear the altars of freedom still further towards the setting sun, is now heard the cheerful whistle of the locomotive as it rushes on over mountain and plain with the speed of the whirlwind. Happy cottagers, secure in their homes, lift up their voices and greet the welcome messenger of civilization as it speeds on in the track of "the star of empire" with its load of living freight.

The discovery of gold in California gave an impetus to commerce that resulted in giving to the world a new style of naval architecture—the American clipper ship. But for this discovery there would now have been no lines of steamers to Australia, New Zealand, Japan and China; marine palaces that they are, that rob the ocean of half its terrors. Every country bordering upon, and every island bounded by, the vast Pacific Ocean, has been benefitted, and its pace in the race of civilization accelerated by the discovery of gold in California.

It is true gold had been found in California prior to 1848; even so far back as 1510—seventy years before Sir Francis Drake made his descent upon this coast, and reported the existence of gold in California—the fact had been noted in a small volume published that year in Spain. The first discovery of "pay dirt" was found near Los Angeles in the year 1838, and these placers were profitably worked for a number of years. In 1846 Thomas O. Larkin, U. S. Consul for California, in his report to the Secretary of State, said: "There is no doubt but that gold, silver, quicksilver, copper, lead, sulphur and coal mines exist in this territory." Sixty-six days after the date of this paper, Commodore Sloat hoisted the American flag over the fort at Monterey, and took possession of the country in the name of the United States. Had he arrived but a few hours later, the flag of England would have been hoisted in place of the stars and stripes, for the British admiral had sailed from Mazatlan about the same time and on the same errand, but was beaten in the race.

Though the precious metals were known to exist previously in California, the grand epoch of the age dates from the discovery of Marshall, on the banks of the American River, and this happened just ten days before the treaty of Guadalupe Hidalgo was signed. It is difficult to avoid the impression that this discovery was delayed by the Ruler of events, until the times were ripe for its benefits to become widespread among the nations of the earth.

The first attempts at mining were made with implements of the rudest character; nor were any others needed at that time, for in many cases from fifty to one hundred dollars were taken out in one day.

Picks, pans, and shovels were first used. The pans were about the size of milk-pans, with a ledge soldered around the outside to assist in handling them. They were first filled with the auriferous dirt and sunk in the water, which flowed in over the sides; when completely saturated, the dirt was stirred, and the settling of the gold facilitated by a circular motion. The top dirt was then poured off. This was repeated until nothing but gold and black sand was left, both of which were bagged together in a small buckskin sack, and the black sand afterwards taken out with a magnet.

Some experience (but the art is easily acquired) is necessary, to prevent some of the gold from escaping, toward the close of the operation.

The rocker was brought to California from Chile. It very much resembles the old-fashioned baby-cradle with rockers. The dirt is thrown in upon a screen in one end, while the water passing over sets the gold free, which falls to the bottom, while the dirt floats off, and the stones are thrown out by hand.

The long-tom is a box, or short sluice, through which a stream of water is kept running. Into this box the dirt is thrown, which, carried down by the stream, falls upon a screen that will only permit small particles to pass through. When the gold is fine, quicksilver is sometimes used in the bottom of the screen. While the pans and rockers were mostly used on the bars convenient to the streams, the long-toms were an invention best adapted to the gulches, where water could only be had in the rainy season. But as the difficulties of securing the gold increased, the genius of the inventive Yankee was equal to the occasion. For river-bed mining, sluices were invented. These are made of boards sawed for the purpose, the bottom board being wider at one end, enabling the small end to be shipped, in forming a lap-joint; transverse cleats, called riffles, are nailed along the bottom, or other means, involving the same principle, are adopted, to save the gold. These riffles are generally charged with quicksilver, and on occasions are not "cleaned up" for weeks. These sluices are sometimes two or three hundred, and in hydraulic mining even a thousand feet long.

The beds of the rivers or creeks are mined by turning the stream in the dry season, when the water is low.

For river-bed mining, a favorable location where the tailings can be got rid of, is selected, and a dam thrown across the stream, while a canal to carry away the water is built along one bank of the river. The seepage water is taken out by means of a pump generally worked by a stream of water taken from the dam. When the space below the dam is comparatively dry, the miners wade in, encased in gum-boots impervious to water, and with shovels strip off the

top dirt, the gold being found in the clay on the bed-rock, in the crevices, and around the base of the boulders. These are raised from their beds, where too large to be moved by bars and levers, and the dirt worked out from under them and thrown into the sluices that run the entire length of the claim. The large rocks are sometimes broken up by sledges, or blasted and stacked upon one side, clear of the work.

As the miners continued their explorations up the streams toward the Sierras, it was soon discovered that the banks of the rivers grew less auriferous beyond a certain point. This led to the discovery of the Blue Gravel leads, or the beds of the dead rivers, as they have been called. In some places this gravel is found cemented, and has to be crushed with stamps, like gold quartz.

These gravel deposits were sometimes buried to the depth of thousands of feet beneath the lava of volcanic eruptions. Under these the miners were compelled to tunnel. What has been said in regard to tunneling veins, does not apply to these horizontal deposits of auriferous gravel, that could not be reached in any other manner. The propensity for tunnelling, so common in California under all circumstances, was doubtless acquired by these early examples.

The following interesting account of these wonderful deposits, is taken from Hittel's contribution to the *Overland Monthly*:

"What is a dead river?"

The simplest reply to this natural question would be, that a dead river is one which formerly existed, but exists no longer. In volcanic regions, it sometimes happens that the liquid lava, seeking the lowest ground, fills up the beds of the rivers, which die, and are replaced by water-courses running in other channels and in different directions. Those dead streams are so few and of little importance elsewhere, that as yet, I believe, no class-name has been given to them; but in California they are among the chief sources of its mineral wealth, and among the most remarkable features of its geological formation. They take us back to a remote era, before the time of Rome, of Greece, or of Egypt; far back beyond the origin of history or tradition, before our coast had taken its present shape; before the Sierra Nevada had risen to its present elevation; before Shasta, and Lassen, and Castle Peaks had poured out their lava floods; before the Sacramento River had its birth; and while, if not before, the mastodon, the elephant, the rhinoceros, the horse, the mammoth bull, the tapir, and the bison lived in the land. They are indeed among the most remarkable discoveries of the age, and among the greatest wonders of geology. They deserve some common name, and we have to choose between "extinct" and "dead." We speak of "extinct volcanoes," and of "dead languages," and, as the latter is Saxon and short, we prefer it. They have been called "old channels"; but this name does not convey the proper idea, since a channel is not necessarily a river, and an old channel is not necessarily a dead one. A dead river is a channel formerly occupied by a running stream, but now filled up with earthy or rocky matter, and is not to be confounded with a channel that is open and remains dry during the greater part of the year because of a lack of water, or that has been abandoned by the stream for a deeper channel elsewhere. A dry river-bed is not a dead river.

The dead rivers of California, so far as known, are on the western slopes of the Sierra Nevada, from five hundred to seven thousand feet above the sea. They are all auriferous, and therefore they have been sought for and examined. They have yielded probably \$300,000,000 in all; they now produce perhaps \$8,000,000 annually. They are not less interesting, therefore, to the miner than to the geologist—not less important to the statesman than to the antiquarian.

The largest dead river is known as "the Big Blue Lead," and has been traced from Little Grizzly, about latitude thirty-nine degrees, forty-five minutes, in Sierra County, to Forest Hill, about latitude thirty-eight degrees, fifty-five minutes, in Placer County, a distance of sixty-five miles. The course is south-south-east, the position about thirty miles west of, and parallel with, the main divide of the Sierra Nevada. The elevation is 5,000 feet above the sea at Little Grizzly, and 2,800 at Forest Hill, showing an average fall of thirty-three feet per mile. The live rivers of the Sierra Nevada run at right angles to the course of the range, and have cut cañons from 1,500 to 3,000 feet deep, and they are separated by ridges which are from three to six miles apart, and are as high as the cañons are deep. The Blue Lead runs across these ridges from two hundred to one thousand feet below their summits. The traveler does not see any signs of a dead river in these ridges, which are as high and have the same general appearance at the Blue Lead as at other places. I shall presently tell how the miner discovers the lead, but before coming to that I want to give you a clear idea how the dead river crosses the ridges. Take a piece of common ruled cap paper; put your pen on a line, draw it up at an angle of forty-five degrees to the second line above, then down to first line at the same angle, and so on until the line made by your pen looks like eight regular saw teeth, which are about an inch high. Consider those teeth as the ridges of the Sierra Nevada on the line of the Blue Lead in Sierra County, and the intervals between them as the cañons. Write over the first to the left, Cañon Creek; over the next, Goodyear's Creek; and over the others consecutively, North Fork of the Yuba River, Rock Creek, Oregon Ravihe, Wet Ravine and Middle Yuba. Now draw a horizontal line across all the ridges a quarter of an inch from their tops. That line is the Blue Lead. The diagram made as directed, represents a perpendicular

section of the ridges and cañons of the Sierra Nevada, on the line of the Big Blue Lead in Sierra County as seen from the west.

I have said that the traveler would see no sign of a dead river in riding over the country. The ridges are as high on its line as elsewhere; the cañon sides present the same appearance. Years elapsed before the miners discovered the existence of the ancient channel. But it required only a few months for the discovery that the live rivers were very rich in gold up to a certain point; that the abundance and size of the particles increased as they ascended up to that point; and that beyond or east of that point the streams were poor. Those points on the different streams were nearly in a line. Just there the ravines on the sides of the cañons were very rich, and they were comparatively poor elsewhere. The miners followed up the ravines, washing the dirt in their beds, and the dirt where the ravines were not too steep, was a foot or two deep over the slate rock. At last, when the miners got near the top of the ridge, they found that the narrow, shallow rock-bed of the ravine suddenly disappeared, and the body of the hill was composed of gravel, which had a peculiar blue color, and part of it, a horizontal stratum about half a mile wide from east to west, and five feet thick, was very rich in gold. They looked after the metal, and paid very little attention to anything else. As the stratum ran across the ridges from north to south, the miners followed it in with adits or tunnels, and in more than one place the tunnels met; and a few years ago it was customary for footmen passing between Monticello and Excelsior to go under ground a distance of a mile rather than to climb over the hill, six hundred feet high, by a path nearly two miles long. In the same manner Forest City and Alleghany were connected by a continuous tunnel; but the timbers have rotted, the roof has fallen in, and the passage is now closed.

The auriferous deposit is gravel, mixed with boulders, clay, and sand, varying from a hundred to three hundred feet in depth; in strata, distinguished from one another by differences in color, in the size of the boulders and the gravel, and in the number and size of the particles of gold. The predominant color is bluish-gray, dark at the bottom and lighter above, with a reddish tinge in those places that have long been exposed to the air, showing the presence of iron. The material of the boulders, gravel, and sand is almost exclusively quartz. In the whole length of the river, as traced for a distance of sixty-five miles, assuming that the deposits of gravel average half a mile wide and two hundred feet deep, there were, counting in the portions which have been washed away by the live rivers, six billion six hundred and sixty million cubic yards of quartz and clay, and the quartz alone must have measured five billion cubic yards. In the live rivers, quartz forms only a small portion of the gravel.

Whence came all the quartz of the Big Blue? How did it happen that no granite, slate, porphyry, basalt, or sandstone was buried in its bed? If all the quartz veins now known in California were cleaned out to a depth of one hundred feet, they would not supply so much as is found in sixty-five miles of a river that must have run for many hundreds of miles. The gravel is all water-worn, and rounded by long attrition. It came from far north. A piece of rough quartz, while being carried five hundred miles in the fiercest of our mountain streams, would not be worn so smooth as is every pebble in the Blue Lead. And the immense size of the boulders implies a mighty current. Those in the lowest stratum average, in some places, a ton, and many are found of twenty tons. These are worn as smooth as the pebbles. They are not found scattered here and there, as though they had tumbled down from the banks of the river near the spot where they are found; but they are evenly distributed in a stratum of equal thickness across the whole bed, and for miles in length. Above that may be a stratum of boulders of half the size, and then another stratum of larger ones. The great river handled these masses of rock with as much apparent ease, and spread them out as evenly, as if they had been no larger than pigeons' eggs.

The particles of gold are larger in size, and contain more silver at the bottom than at the top. The smaller pieces are in the upper strata, and as they have a larger surface proportionately, the silver is eaten out by the sulphurous acid which is developed in the gravel by the oxidation of pyrites. If a double eagle and twenty one-dollar pieces are thrown into a solution of vitriol and left there for several weeks, the small pieces will, at the end of that time, contain a larger proportion of gold than the large one; and for a similar reason the surface placer gold is finer chemically than that obtained from the deeper strata. As a general rule, the deep gold is nine hundred fine, or is worth eighteen dollars and sixty cents per ounce, and the surface gold is nine hundred and twenty fine, and is worth nineteen dollars per ounce, in the Big Blue Lead. The gold and gravel are deposited as in live rivers. There are banks, bars, eddies, ripples, rapids and falls. There is little gold in the rapids, and much in the eddies. The richest places have contained as much as fifty dollars to the cubic yard of the lower stratum, or if the large boulders were left out of the estimate, to two or three cubic feet. The space between the boulders is filled with sand, clay and gravel, which contains the gold. In the upper strata there are from fifty cents to two dollars to the cubic yard. The bed is of slate rock, and the banks are from fifty to three hundred feet high; but there are few places where they have been examined, for nowhere has all the gravel been washed away across the channel.

But how was it possible that the bed of a large river could be filled three hundred feet deep with gravel? When the miners in 1850, 1851 and 1852 flumed the live rivers of California, and took the gold from their beds, they found a deposit of gravel that did not average

more than five feet deep on the bed-rock, in streams that ran in cañons one thousand feet deep; and it is strange that the Big Blue should have filled its bed with gravel. Yet this filling up is not without an analogue in our day. Under the influence of hydraulic washing, Bear River and Yuba River, within the last fifteen years, begun to fill up with gravel, and their beds have for miles risen seventy feet or more above the levels of 1853. This gravel is auriferous, and it is deposited in strata, and the arrangement and general appearance resemble those of the Big Blue Lead. The filling up begun down in the valley, and as it ascended, the current became less rapid and lost the power to carry away the gravel. In Bear River, below Dutch Flat, the bed rises two feet per month during the chief washing season, from February to September, and in the remaining four months it falls on account of the stoppage of washing and of the winter floods, which carry away perhaps half of the accumulation of the summer.

Some persons claim that various camps or parts of dead rivers in Plumas County are on the Big Blue Lead, and others think that portions of a dead river, near Placerville, belong to the same stream. I do not accept these theories, but if they are true, the Big Blue River has been traced about one hundred and ten miles. In the northern part of Plumas County, the river is buried under deep beds of lava and basalt, and south of Placerville it is probably below the level of the live streams, and thus cannot be found by any system of mining or mode of prospecting now in use. Even in places where it is above the level of the live streams it may be covered on the sides of the cañons by slides of rock or of barren dirt or gravel, and the miner might spend thousands of dollars in a vain search for treasures not ten feet from his drift, as many have done, and some accident, luck or perseverance afterwards proved the proximity of the rich deposit. In several cases the lead was found by calculation. The miner took his position on a hillside, on a line and on a level with other mining camps, and in a few days he found a fortune; and others have spent years working on a similar plan without success. The river must have taken bends on the north side of Rock Creek and Oregon Ravine, and twelve years' searching have not revealed the position of the bends.

But why did the Big Blue River die, and leave nothing but its gravel and its gold to tell the story of its existence and of its greatness? The main cause must have been the subsequent rise of the Sierra Nevada. Suppose that a range of mountains, seven thousand feet high, were upheaved thirty miles east of the Mississippi; that the bed of that stream were on the mountain side three thousand feet above the sea, and that thirty miles west the country maintained its present level; the result would be that the present Mississippi would soon be a dead river; it would be cut across by streams running down the mountain side, and pouring into a new Mississippi, thirty miles or more west of the present one. We know that the Sierra Nevada has been upheaved; that a large stream ran on what is now the mountain side; and that it has been succeeded by a new river farther west; and we must infer that the death of the old and the birth of the new river were caused by the upheaval.

Many of the hills crossed by the Big Blue are capped with lava or basalt, which covered much of the country from near the summit of the range to about three thousand feet above the sea. It seems, then, that the river filled its bed with gravel; the mountains began to rise, and volcanoes broke out along the divide; the lava ran down and covered the land to the line of the dead river and beyond it; the mountains rose still higher, and the waters running down their sides cut through the lava and made deep cañons, and washed away two-thirds or three-fourths of the dead river, and scattered its gold among the living waters.

The descent of thirty-three feet per mile observed between Little Grizzly and Forest Hill would make a terrific current in a stream half-a-mile wide. The Sacramento is a lively river, yet its grade is only five feet in a mile. But no ordinary current could have carried the large quartz bowlders of the Big Blue Lead from distant regions, and distributed them evenly over the river bed. It is possible, however, that in the lifting up of the mountains the relative elevations have been altered, and that the present grade differs from that of the Big Blue while it was alive.

A question suggests itself whether the great dead river was the predecessor of any live stream; but to this no satisfactory answer can now be given; and it is doubtful whether time and research will ever furnish one. The Big Blue was parallel to the Sacramento, and has to a certain extent been succeeded by it; but it drained a much larger district than the Sacramento does, or the rain-fall of the country was much greater in the era of its existence. The Sacramento does not carry one-fourth of the water which ran in the Big Blue—probably not one-tenth. If we could ascertain that the quantity of rain had not altered, then we would be justified in presuming that the Columbia River, which would about fill the bed of the Big Blue; instead of turning westward at Walla-Walla, originally continued southward, until the lifting up of Shasta and Lassen, and the adjacent ridges, stopped its course, and compelled it to break through the Cascade range at the Dalles. With our present limited knowledge, we are not justified in calling the Big Blue River either the Dead Sacramento or the Dead Columbia.

Some persons have argued that the Big Blue Lead never was a river, but only a lacustrine or alluvial deposit. The theory, however, is untenable. The Big Blue Lead has all the marks which a dead river should have. It has a long course, a width nearly uniform, a course nearly straight, some bends with eddies on the inner side, a peculiar quartz unlike any found in the neighboring ridges, or in the streams to the eastward, and abundance of quartz which no place

now known to us could have supplied, and which came probably from a distant northern region, now covered with lava; water-worn gravel, which must have been carried far; flat stones pointing down stream, as a current would place them; strata of coarse and fine gravel, which must have been deposited in a stream; a uniform descending grade; the coarse particles of gold which could not have been distributed so evenly over a wide channel except in a strong current; an immense quantity of gold, which required ages to scatter through a deposit three hundred feet deep; driftwood unmistakably water-worn; trunks of trees with the butts up stream; tributary brooks and a number of other evidences which would require more space for their description and explanation than I could spare. To say that the Big Blue is not a dead river is equivalent to saying that the bones of the mastodon never belonged to a living animal, but were formed under geological influence exclusively.

If this was the only dead river in the State, the proof would be less conclusive, but there are a dozen others. One which runs southwestwardly, and may be called the Dead Brandy River, appears at La Porte, Brandy City, Camptonville and North San Juan, and is marked by the same general characteristics, save that the gravel is finer, the pebbles in upper strata being generally not larger than a pigeon's egg.

In Tuolumne and Calaveras counties we have the Dead Stanislaus or Tuolumne Table Mountain, which runs from near Silver Mountain in Alpine, to Knight's Ferry, and there disappears. It is covered by a bed of basalt, which flowed as lava from a volcano and filled up the ancient bed; and this basalt has resisted the wear of the elements, and now stands as a mountain forty miles long, a quarter of a mile wide, and eight hundred feet high, the softer adjacent slate rock having been wasted and washed away. Under this mountain lies a dead river rich in gold. A similar table mountain of basalt, covering an auriferous dead river, which I call the Dead Cherokee, after its chief mining camp, extends seventy miles from Lassen's Peak to Oroville. At Bangor, in Butte county, is a small, dead river, seventy feet below the general surface of the ground, and covered with ordinary soil and gravel. There are also dead rivers at Smartsville, Mokelumne Hill and San Andreas. The Big Blue and the Dead Brandy are distinguished by the depth of their gravel and by the absence of pebbles of eruptive origin in it; the others have either short courses or shallow deposits of gravel; and the quartz forms a much smaller percentage of the gravel. In the dead rivers at Cherokee, Bangor and Smartsville a large proportion of the bowlders and pebbles is of lava and basalt, as if the streams had been formed after the commencement of the volcanic era. But different as is the material of the gravel, the fluvial origin of the deposits is similar and indubitable in all of them, when they are studied together.

High up in the recesses of the Sierra Nevada Mountains are to be found immense deposits of auriferous dirt, several hundred feet in depth. Where these beds are extensive and water plenty and convenient, these claims pay to work even though the gold present does not exceed one cent to the square foot of dirt, though most of them pay much more than that. It is necessary to have a good head of water, not less than fifty feet above the bed rock. This water is led into a small reservoir, into which it is continuously pouring. From this a hose extends to the bottom of the claim. At the end of this hose is a nozzle, tapering from eight inches at the butt to two inches at the orifice. From this the water rushes with such force that it will kill a man as quick as if struck by a bar of steel. When this stream of water is projected against the bank, the dirt or clay is loosened and carried by the current into the sluices, where it is pulverized and the gold set free by pounding against the riffles in its downward course.

Hydraulic mining may be considered the perfection of placer mining, and Americans may pride themselves with being the inventors.

When the dirt in these claims is very compact, it is sometimes blasted out. Long tunnels are run with cross-cuts at the end, in which are stored from one to two hundred kegs of powder, the tunnel filled up and the blast set off. The effect is like a young earthquake in the neighborhood, and thousands of tons of earth and gravel—the debris of ages—is torn from its long resting place, and carried by the torrents to the plains below, where, as in Bear Valley, it has submerged farms.

So much has been said of vein mining, under the head of mineral lodes and the formation of minerals, that little more remains to be told. Attention was given to gold quartz veins in this State as early as 1850. The Mexicans had located some of the richest lodes, and worked the ores in *astras*, after the manner of Mexico. Some even had found rock rich enough to pay handsomely by crushing the choicest specimens in mortars. The first quartz mill was erected in 1851, at Grass Valley, where this industry has ever since been successfully prosecuted. Some of the mines in this locality have paid large fortunes to their owners. But few of them have ever been put upon the Stock Board; and under the direction and management of experienced Cornish miners, they have been economically developed by shafts following the direction of the vein, which is proved by experience to be the most economical method of working a mine whenever this plan is practicable. There are many gold quartz veins in the State that cannot be made to pay to work on account of the rebellious character of ores, caused by their combination with base metals and sulphur. It is to be hoped that we are on the eve of a revolution in metallurgical processes, that will enable all these mines to be worked at a profit.

One of the most remarkable deposits of gold in California is to be found on the Pacific Coast, extending from Trinidad, a small port near Humboldt Bay, to Crescent City. Along this shore is a high bluff of gravel drift, which most likely owes its existence to the glacial period. That it was once elevated far above the level of the sea, there is abundant evidence. It is now, however, being constantly washed away by the action of the waves. One of its peculiarities is the great abundance of black sand which may be gathered anywhere along the beach at low water, and with it, minute particles of glittering gold. There was a great rush to Gold Bluff in the early days, but the excitement soon died out, and many a flat-broke adventurer returned to curse his folly and the unlucky fate that made him the victim of designing speculators who had lured him away from a paying claim, which he had abandoned for some one else to jump, in the delusive hope of striking it richer somewhere else. This is the rock upon which thousands of '49ers have been wrecked. There are, however, yet a number of good paying claims along this beach. It has been conjectured that the richest sands were to be found some distance from the shore; and a vessel was fitted out with a diving apparatus, for the purpose of securing these golden sands, but the enterprise proved a failure.

The quicksilver mines of California are next to the gold mines in importance. Cinnabar has been found in the coast range from Trinity County to Santa Barbara. The famous New Almaden mine, in Santa Clara County, was discovered some years before the gold placers. Besides supplying the demands of California, a surplus was exported to Mexico and China for years before any other quicksilver mine was worked in this State. Rapidly as the demand for quicksilver has increased since the discovery of silver and gold in Nevada, Idaho and Montana, California has proved equal to the emergency, and has supplied the increasing demand, with an abundance left for foreign importation, so continuous and rapid have been the developments of our cinnabar ledges.

At this time, the most prolific quicksilver district is within a circle, around Mount St. Helena, whose radius does not exceed thirty miles. In this district are situated the Redington and Manhattan mines, at Knoxville, several in Pope Valley, the Great Eastern and Great Western in Lake County, and a number of others in Pine Flat and the vicinity of the Geysers. Besides these are a number of others that have not been referred to, and others that have not been developed, or even prospected, for want of capital. A number are also lying idle, owing to a cloud over the titles awaiting settlement. These are the effects of bad legislation. Many of our mining laws seem to have been framed with an eye to the division of mining profits among the legal profession.

These mercurial ores are mostly found in a matrix of silica, in some places resembling chaledony, in others flint, but generally known among the miners as serpentine. It occurs in vast ledges, in some places two or three hundred feet wide, as at the Manhattan mine, and very frequently is traced for thirty or forty miles, as is the case with the Redington and Great Western lodes. These veins, being in the rural districts, have, many of them, been discovered and are now owned and worked by farmers, or others who know nothing about mining, and, as a natural consequence, the work is wretchedly done; while in other cases money is being wasted upon barren rocks, where there is not the remotest prospect of finding cinnabar.

MINERAL LODES.

BY CAPT. C. B. SMITH.

The origin of mineral, especially the precious metals, and the manner of their formation and deposit, is a question of vital importance to the miner, and one of the principal reasons of this is, to be able to arrive at a satisfactory solution of the probable depth or extent of mineral veins. The generally accepted theory is, that gold and silver ores are of igenous origin; and to quote the words of Dr. Ure, in his dictionary of "Arts and Sciences," the veins or fissures in which these metals are stored have been formed "by an expansive force acting from within the earth, and subsequently filled with foreign matter, having been injected in a fluid state and afterwards slowly crystalized;" and this the Doctor thinks is confirmed by the fact, "that many lodes are largest in their under part and become progressively narrower as they approach the surface," and in support of this theory, he further says: "The large crystals of certain substances which line the walls of hollow veins have sometimes their *under surfaces* besprinkled with small crystals of sulphurets and arsenates, while their *upper surfaces* are quite smooth, suggesting the idea of a slow sublimation of these volatile metals from below, by the resident heat and their condensation upon the under forces of the crystalline bodies already cooled. This phenomenon affords a strong indication of the igenous origin of metaliferous veins."

Unfortunately for this theory of the formation of veins or fissures, there are many lodes that grow narrower as they go deeper, and some are "pinched out" altogether, and, besides, it never seems to have occurred to the Doctor, and other advocates of this fissure theory, to inquire: What means were employed to keep these fissures or cavities in the earth extended while being filled, and during the ages upon ages, that it must have taken for the quartz and metals in the Comstock Lode—for example—to have crystalized, if only a small portion of the

contents of these veins are now removed? It is a very difficult matter to keep these cavities thus created from collapsing even by the aid of strong timbers, and these are often crushed to fragments.

That the metals now found in what we term "lodes" or "veins" once existed "in a fluid state and afterwards slowly crystalized," there cannot be a doubt; and that quartz crystals are formed from liquid, we have abundant evidence, as cavities in silicious rocks are frequently found filled with fluid silica, and the evidence is plain that the crystalization was still going on. What Dr. Ure says about the under and upper surfaces of veins, is not very clear, but the idea of crystalization and sublimation certainly seem to contradict each other. Volatile metals like sulphur and arsenic, that appear to be chemically combined with the metals, are volatilized and dissipated by heat, and the reduction of the precious metals is more or less difficult in proportion to the presence of these volatile metals.

Lately, another theory has been started to account for the presence of metals in veins, and, although it was at first treated with the most superlative contempt by the savants of Europe, it has since found advocates. The new idea is, that the metallic ores are deposited in these open fissures by the magnetic currents that pass through the earth from pole to pole, and it seems to be supported mainly by the fact that the metals are frequently found in the rock composing the walls of the veins.

This theory has the same difficulties to contend with, so far as the cavities are concerned, which alone is sufficient to condemn it, more especially if a more plausible theory can be found.

If these scientific gentlemen would examine more carefully the croppings of veins, their clay selvages, their gangues and the matrix of the metals, instead of drawing their conclusions in their laboratories from specimens of ores, they would not fall into such ridiculous errors of the origin of minerals and the mode of their formation in fissures or veins. It was well said by a German scientist, speaking of our rapid improvement in metallurgy and mining, "No wonder you improve so rapidly, for in this country brains and muscle work together."

We would ask any intelligent miner if it is not much more reasonable to suppose that all the metaliferous deposits found in the crust of the earth in what are termed lodes or veins were originally deposited in lakes or ponds upon the earth's surface, and subsequently elevated to their inclined or vertical positions by the upheaval of the mountains? Is not this confirmed by the dip of the Comstock lode? And is it not more reasonable to suppose that a portion of these deposits have been buried many thousand feet by the grinding down of the mountains by storms and glaciers during eons upon eons of ages? These ridiculous theories may have obtained with the impression, now exploded, that the earth is only six thousand years old. Any sensible person could hardly entertain for a moment the idea that the Comstock lode was even an open fissure in the crust of the earth. The clay selvaige in the Comstock, was deposited after the contents of the lode was crystalized, and could only have been deposited in a horizontal position as mud is always deposited. The mind becomes paralyzed at the vain effort to attempt to grasp the vast space of time necessary to have crystalized the immense deposits of metaliferous ores and the quartz and porphyry contained in the Comstock lode. The condition of the earth in its transition from nebulae will probably forever remain a mystery, except so far as we are able to judge from the evidence found in the rocks, but everywhere we find evidence that it first crystalized, and gold and silver and silica must have crystalized together. Evidence of this is to be seen in a case of minerals standing before the door of Col. Andrews' store, the diamond merchant, in the Russ House block. There are several very interesting specimens of gold and silver embedded in quartz, one of the latter especially, showing conclusively that the silver and quartz must have formed simultaneously. Why should we doubt that these metaliferous veins were deposited in a horizontal position, when we find in our coast range evidently an aqueous formation, interstratified veins of silica and sandstone, carrying iron, copper, mercury and various other metals, including silver and gold. Iron ore is found forming in the bogs of Ireland, also in some of the mountain lakes of Switzerland. The ocean water is known to contain silver and gold. With these evidences before us, how is it possible to resist the conviction that what we now call mineral bodies were once lakes or ponds on the earth's surface and were crystalized anterior to the upheaval of our mountain ridges.

If this theory, then, is the true one, how will the evidence bear upon the Comstock Lode? May we not expect that there will be a limit to its depth, and that, finally, that depth may be reached? But it would not necessarily follow that the limit of the deposit of quartz and mineral would be reached, for the extent may be very great, and bonanzas may occur as they are now encountered in the Comstock and all other mineral deposits of the precious metals—showing that the crystalization of the mineral was generally local. It is supposed that there must be a limit below which it is impossible for miners to work, but that remains to be proved. What we want to know is facts, in regard to the formation of mineral. The question is not the condition of the fluids of the earth, when these deposits occurred, but whether or not they did occur in the manner here suggested, and were afterwards elevated in one portion and depressed and carried by the debris of volcanoes and attrition, in another, or whether there ever were cavities in the earth's crust where volatile minerals were sublimated, and silica and gold and silver crystalized.

Within a few years a deposit of argentiferous copper ore has been discovered near Molege, in Lower California. This remarkable mineral deposit extends over a large extent of country,

and is now being profitably worked. Thousand of tons of this ore are being exported annually, and but for the want of capital (difficult to be obtained for industrial purposes in that distracted and impoverished country), the product of these mines might be very greatly augmented. This deposit was discovered in the dry beds of the arroyos, where the table lands had been furrowed by the mountain torrents swelled by the annual rains.

Argentiferous deposits are by no means confined to veins. They are to be found under many different conditions. Masses of rich chlorides of silver and argentiferous galena are found imbedded in limestone formations. These are common in England, Germany, South America, Mexico—and probably the White Pine District in Nevada is another example, though in this country the prejudice in favor of fissure veins is so great that owners of mining property are loth to admit that their mine is not of this character.

A most remarkable deposit of silver, known as the *planchos de plata*, was discovered on the borders of Chihuahua and Sonora during the previous century. Thousands of miners flocked to the locality of this wonderful bonanza without providing themselves with the means of subsistence. Terrible suffering ensued; thousands perished with hunger, and many were killed by the Indians.

All knowledge of the locality of this deposit has been lost, and but for the fact that one of the blocks taken out, weighing over six hundred pounds, and which is nearly pure chloride of silver, was transported to the museum at Madrid, where it now remains, this story would most likely be treated as fabulous.

In most cases, however, silver ore is found in veins that seem to penetrate the earth's surface, and generally alloyed with other metals, some of which render its reduction extremely difficult and expensive. In some localities, native silver is found in great abundance. There are two mines of this character in Mexico—one in Morales, in the State of Sinaloa, and another in Chihuahua; the latter is owned principally by Wells, Fargo & Co., of San Francisco.

Silver-bearing veins almost invariably give indication of their presence by quartz croppings. It is true, blind leads have occasionally been struck, but oftener by accident than otherwise. A vast amount of money is annually wasted, in underground prospecting for veins, that would be more judiciously expended in developing mines already discovered.

Laboring under the delusion that important mineral discoveries have sometimes been made that gave no surface indications, novices in the art of mining are prone to undertake the development of their veins by tunneling.

It is very seldom that a mine can be advantageously worked in this manner. All those undertaken on the Comstock Lode have been a useless waste of money; neither have any of them resulted in any important discoveries. Numerous companies were formed in San Francisco to work mines in Mexico during the mining excitement that followed the discovery of the Comstock Lode.

Most of these enterprises failed, and their failure was in a great measure owing to this propensity so general among new mining superintendents for opening their mines with tunnels. These are frequently undertaken in locations where twice the distance has to be made by a tunnel that would be required to reach the same depth with a shaft. In sinking the blasting is more effectual than when tunneling. Assisted by the weight of the atmosphere, the "shots" throw better.

Sinking on the vein is always the best way of prospecting a mine, and where there is no surface indications the safest plan is to let prospecting in that locality alone. Shafts are, without doubt, the best way of working a mine. We might have learned that from the example of our Mexican neighbors, who have had centuries of experience. They never open and work their mines with tunnels, though until within a few years past they have been compelled to mine without the aid of machinery or pumps. Water became an insurmountable barrier to the Mexican miner at very moderate depths, and the ore was mostly carried to the surface in hide bags, strapped to the back of the *tanatero*. If it was not advantageous for them in the absence of machinery and pumps to work their mines by tunnels, it certainly cannot be advisable for us, who possess all the advantages of steam and machinery.

What has been said in regard to the impolicy of underground prospecting, will apply to the prospecting of barren quartz lodes, especially while there are so many undeveloped mines that give reasonable indications of profitable returns. It is well ascertained that mineral veins are not metaliferous in their whole extent. The contrary is the fact, and the barren ground vastly predominates. Millions of dollars have already been wasted in this country in these unfortunate speculations—but not alone here. In all countries during periods of great mining excitement the same causes have produced similar effects.

But while disastrous results have generally followed the attempt to find mineral where there are no surface indications of its presence, the adventurous miner who has perseveringly persisted in sinking for bonanzas at lower depths (I use this word in the sense we have given it; in the Spanish, it simply means prosperous), even far below where the pay-rock first encountered has given out, seldom fails of being rewarded for his enterprise.

The best plan, while working out one body of ore, is to be seeking for another. A miner can never do a better thing with ore than to leave it where he finds it until he needs it to put through the mill. Many valuable mining properties have been rendered valueless, and the owners ruined, by "gutting" the mines instead of prospecting them to greater depths, while

the ore taken out would have supplied the means without calling for assessments. Examples of misadventure from failing to follow this rule are frequent, and may have been repeated in the Emma mine. At any rate, it is difficult to undertake how fraud could have been perpetrated in the sale of this mine, when the parties who bought it acted upon the reports of experts of their own choosing. It can be no fault of the parties who sold this property in England, if faults in the vein have been encountered since. That either this has happened, or the mine been "guttled," and no effort made to seek ore at lower depths, seems clear from the evidence.

Veins are sometimes abruptly terminated in their lineal extent by slips or slides in the strata. This may be best understood by supposing the vein has been severed by a transverse cut, and that on one side of this cut the lode has fallen down in a manner similar to the opening of a fan, and it may have fallen so low on one side that all indications of its existence are buried out of sight, and covered by the debris from the adjoining hills.

In such cases the vein is said to be "heaved" or "started," according to the direction in which the fault occurs.

Metallic veins are also frequently obstructed in their downward course by boulders of rock; these are termed a "horse." They sometimes have the appearance of having been split from the upper, and toppled over against the foot-wall. In such cases all traces of the continuation of the vein is frequently lost, the lode terminating in a *cul de sac*. There are cases, however, where the vein has been recovered by following the seam above the horse until the lode was again found. A "horse" sometimes occurs in a vein imbedded in the gangue, and completely detached from either wall.

The ore bodies in a vein do not, as a rule, follow its line of strike, but generally cross the lode at a very oblique angle. These generally commence at or near one of the walls, thin, and of low grade ore where they begin, increasing in thickness and richness as they proceed, until they finally terminate in the same manner at or near the opposite wall. They do not always extend quite across the vein, and in small veins these bonanzas frequently occupy the entire space between the walls, and in not a few instances the vein seems to have been apparently widened out for their accommodation.

The facilities we now have for working mines will probably enable us soon to determine many points regarding them, still unsettled, and also solve the problems whether or not true fissure veins ever do give out at any depth possible to work them, or if, as a rule, they become richer the deeper they penetrate.

The bonanza recently encountered in the Comstock Lode, as well as some of the most famous mines in Mexico, seem to support this theory. The conditions under which the precious metals have been formed must doubtless remain a mystery for many years to come; and when we have ascertained how the thing is done, most likely we shall be in possession of the philosopher's stone, and be able to make gold and silver to order, without digging for it in the depths of the earth; and then most probably the millennium will have come.

Limestone, in which rich deposits of chlorides of silver and argentiferous galena are frequently found, is conceded to have been the work of zoophites, which are now only found rearing their coral structures in the depths of the tropical seas. How these masses of chlorides of silver and argentiferous galena became imbedded in the solid secretions of coralites, originally deposited at the bottom of the ocean, is a question that for the present must be left to conjecture.

The petrifications that are still going on in many localities may give us some clue to the formation of silica. A most singular fact in this connection is, that where wood has been petrified it is literally turned to stone—no evidence of woody fiber remaining. Cavities are often found in silicious rocks lined with quartz crystals, and partly filled with fluids, of the petrifying qualities of which wonderful stories have been told. Nothing could induce a Mexican miner to drink the contents of one of these cavities, lest he be turned to stone, as once happened to an unfortunate hombre, who, overcome with thirst, was unable to resist the temptation to quaff the crystalline fluids found filling the cavities of the rock which he was blasting. The bodies of dead animals are frequently found petrified under circumstances that prove that the silica must have been derived from the fluids in which the body had been immersed.

The silica of petrification is identical in character, if not in construction, with the silica that forms the base of the matrix of the precious metals. That both are formed simultaneously, and by the same process, there seems to be hardly a doubt. Silver and gold are found in solution in the waters of the ocean; and all are soluble by simple chemical processes. Singular mineral changes have been observed where large deposits of tailings have been left undisturbed for centuries; and that the formation of mineral may be still going on, though at a pace so slow as not to be observable, is yet possible.

Vein mining in California has, for a number of years, been steadily on the increase, extending to all parts of the various gold-bearing belts of the State, the area of placer mining having meantime been undergoing a gradual contraction; the greater portion of the gold dust realized from this branch coming now from the hydraulic washings, which require capital for their successful prosecution, and are conducted on a large scale.

THE MINERAL FIELDS OF CALIFORNIA, NEVADA, IDAHO AND ARIZONA.

REVIEW BY COUNTIES.

California.

ALAMEDA.—Coal is found in the Monte Diablo range, and at Corral Hollow.

ALPINE.—Gold, silver and copper mines are worked with some success.

AMADOR.—Its gold mines, particularly in quartz, are very rich. Near Sutter Creek is located the well known Amador or Hayward mine, one of the oldest, deepest and most productive of the quartz mines of California. The product of this mine is about \$650,000 annually. The shaft is down about 2,000 feet. Jackson was formerly rich in placer mines, but its chief dependence now is upon the quartz ledges, which are worked to good profit. Ione City, in addition to its other mining interests, has developed a splendid coal bed.

BUTTE.—One of the earliest mining counties in the State. Oroville is the principal mining town of the county. It grew into prominence during the excitement of 1855, and has so continued ever since. It is not unusual to strike good pay dirt in digging a cellar in the town or vicinity, and dead river-beds are being constantly discovered in various parts of the county. The last excitement occurred about three years ago, when the neighboring towns were nearly depopulated of Chinese by their universal rush to the mines here. The Cherokee hydraulic mines produce about \$500,000 annually.

CALAVERAS.—Gold was discovered in the vicinity of Murphy's, in 1849, and mining is still prosecuted with increasing energy, the many rich quartz lodes, deep channels of ancient glacial drift, and vast deposits of auriferous gravel, giving unlimited fields for the most extensive operations. There are also good copper mines in this county.

COLUSA.—The hills, which form the western border of the county, contain silver, quicksilver, copper, sulphur, petroleum and salt. The town of Munchville is the centre of an important quicksilver region. Among the principal mines in the district are the Abbott, Buckeye, Empire, Elgin, Manzanita, Turner, Last Chance and Yellow Jacket; none of which have, however, made any large production since the decline in the price of this metal.

DEL NORTE.—Gold is mined on the Klamath and its branches, and in the sands of the ocean beach. Rich veins of copper exist in the mountains east of Crescent City. Chromic iron ore, or chrome, highly valued as a pigment, appears in inexhaustible quantities in the Smith River valley.

EL DORADO.—Gold was discovered at Coloma, in 1848. The placer mines having been nearly exhausted, attention has been turned to deep gravel mining, and extensive canals are being constructed for hydraulic purposes. A number of rich quartz mines have also been opened. At Georgetown, the Woodside, St. Lawrence, Taylor and other companies have been working on veins of good promise.

FRESNO.—Gold mining is prosecuted to some extent. Coal and iron abound in the Monte Diablo range, and copper in the foot-hills of the Sierra. In the western portion of the county are the rich quicksilver mines of New Idria and Panoche. The New Idria company produces about 6,000 flasks of 76½ pounds each of quicksilver annually. The mines were discovered in 1855.

HUMBOLDT.—Mining limited. Petroleum has been found near the Mattole river. Good stone coal in abundance, near Garberville.

INYO.—Minerals abound in abundance, the principal being argentiferous galena, gold, copper, sulphur and tin. The principal mining districts are Darwin, Kearsage and Cerre Gorda—the latter having produced annually, for several years, over \$2,000,000 in silver and lead.

KERN.—Some very valuable quartz veins are known to exist in this county, among which are the "Bright Star," "Bella Union," and the "New World," near Havilah.

KLAMATH.—Quartz and placer mines of gold are found in many localities. The Black Bear, Klamath and Yellow Jacket quartz mines are very valuable. The first two have powerful mills of thirty-two stamps each. The vein resembles the mother lode, and is nearly one hundred feet in thickness, the ore yielding from \$10 to \$40 per ton.

LAKE.—Contains extensive deposits of sulphur and quicksilver. The Redington, Manhattan, and California mines, at Knoxville, are among the richest in the world. The other quicksilver mines of the county are also numerous and some of them valuable.

LOS ANGELES.—The mineral resources of the county are of great value. In it were found the first gold placer diggings of California, long previous to the discovery at Coloma. Along the San Gabriel and Santa Clara Rivers gold was gathered fifty years ago. At Soledad veins of gold-bearing quartz have been worked with profit. Veins of copper and other minerals are found in the San Gabriel range, and petroleum springs in the San Fernando hills. According to report some promising silver-bearing lodes have been found the past Summer in Silverado district, to the east of Anaheim.

MARIPOSA.—Lies in the great gold range of the Sierra Nevada, and is the seat of the celebrated Fremont grant. Several million dollars have been taken from this estate, with

excellent prospects for future increase. The Josephine, Pine Tree, Mt. Ophir, Princeton, Mari-posa and other great veins, yielding ore bearing from \$8 to \$35 per ton, are being reopened, with milling facilities reducing the cost of working to \$4.75 per ton. Important discoveries have been made at Coulterville and Hornitos, and, altogether, the mineral resources of the county have a favorable outlook.

MENDOCINO.—There are cinnabar deposits in this county, some of which would probably have been worked with profit had the price of quicksilver kept up to anything like former figures. Some placer mining has been done at Calpella the past season, and with water there is quite an extent of diggings here that would pay fair wages.

MONO.—Placer mining was carried on at Monoville from 1860 till 1867 with good success. In the latter year a great extent of vein deposits was discovered, followed by a large increase of population and a violent mining excitement, during which things were so overdone that a terrible relapse followed, bringing with it financial ruin and an almost total abandonment of the county. After this very little was done in Mono till 1877, when the great success that attended the working of the Standard Mine drew attention once more to this region. Prospectors began to return, capital was invested, and the work of exploration having been once more inaugurated, the immensely rich gold-bearing deposits in the Bodie Mine were brought to light, since which this has been one of the most active mining districts on the coast.

A correspondent of the *San Francisco Post*, under date of Sept. 25, 1878, thus speaks of the Bodie mines. For still other particulars, the reader is referred to the official report of each mine, as published in alphabetical order in our Mining Directory:

“The Bodie mines are situated in a porphyry belt running nearly north and south, from 2,500 to 3,000 feet wide, and extending several miles in length. On the western portion of this belt, there appears to be a system of parallel veins, some of them small, others of considerable size in places, all bearing more or less gold. It is a peculiar characteristic of the ledges, that the largest portions of them are generally the richest. On this western portion of the mineral belt I found the Standard, Bulwer, Bodie, Tioga, Sitting Bull, and other well-known mines; and further to the south and along the same line is the South Bulwer, the South Bodie, Mono, Relief, Republic, Noonday North and South, Booker, and Spalding. On the eastern side of this mineral belt, the formation differs materially. The ore carries more silver, and the formation is larger; that is to say, the vein matter is much wider, and there are large bodies of gold in the fissure. This is particularly illustrated in the Aurora Tunnel. The Dudley Lode in this tunnel, at the bottom of the winze, 100 feet below the tunnel, is 15 feet thick, and shows some of the richest chloride ore found anywhere—horn-silver and free gold being plainly visible to the naked eye in the same rock. At this point, the vein stuff is several hundred feet thick, and in the depth promises to be a very important mine. The May Belle, Red Cloud, and other mines, north and south, are on this silver zone, so to speak. The May Belle Mining Company and the Aurora Tunnel and Mining Company, whose claims conflicted, have settled all their disputes, taking in a strip of ground running north from the Red Cloud to a point seven hundred and fifty feet north of the Aurora Tunnel, making a distance of some two thousand four hundred feet. This ground has been deeded by the Aurora Tunnel and May Belle Company to two new companies, which have been organized for that purpose. The one is known as the Dudley Mining Company, and the other as the May Belle Consolidated Mining Company. The former company is the owner of the north end of the ground, commencing at a point 375 feet south of the tunnel, and includes ground on the Dudley lode. The May Belle Consolidated Mining Company owns the ground from a point 375 feet south of the Aurora tunnel to the Red Cloud. The May Belle is in a similar formation to that found in the Aurora tunnel, and they are sinking a shaft. It does not follow the vein, consequently there can be no special developments till the ground is crosscut. The shaft is now down two hundred feet, and from the formation, when the crosscut is made, it will undoubtedly develop similar ore to that found in the Dudley claim. The Red Cloud, the adjoining mine on the south, has a shaft down four hundred feet, but the water is so strong that they are unable to take it out from the lower level with their present machinery. They are exploring the two hundred and fifty-foot level, while waiting for a pump to take the water from the lower level. On the two hundred-foot level, running north and south, they have good indications for a mine. The ledge in each direction is about three feet thick, and promises well. Turning to the western belt, the Syndicate Company owns a large body of ground extending twelve hundred feet east and west, and fifteen hundred feet north and south, and are running a deep exploring tunnel, which is in some fifteen hundred or sixteen hundred feet, and are now crosscutting, and will undoubtedly develop valuable mines, for only a short distance intervenes between the south line of the company and the rich mines lying south of it. Immediately south of this company are the Tioga Consolidated, Bachtel, and Sitting Bull. The Tioga has recently opened two ledges, one supposed to be the Standard vein. These ledges improve as depth is attained. The Bechtel is down a distance of seven hundred feet. After leaving the three hundred, the ledge gave out, although the fissure continued. I understand that they are now crosscutting in the bottom. Immediately west of the Bechtel, is the Sitting Bull, which has very rich rock. The ledge is not large, averaging from eighteen inches to two feet; but the ore is high grade, and the width of the ledge is increasing as depth is attained. It is supposed by those most familiar with the situation, that this is the north extension of the rich ledge that is found in the Bulwer mine. The

Bulwer lies west of the Standard, and although I was not allowed to visit this mine, still, from all the reports that I could gather from miners, it is one of the finest developments in the district, a large body of ore having been shown. The Standard mine would be hard to describe. The company have a very large amount of ground, and they not only have the old Standard vein, that has been yielding so well for the last eighteen months or two years, but both veins in the Bodie extend into the Standard. This is probably the finest gold mine in the world, and those most familiar with it claim that there are years of dividends in sight. The company goes along without creating any sensation, making dollar dividends. They are sinking a shaft between the Standard works and those of the Bulwer, which is now down some seven or eight hundred feet, upon which large pumping works are to be erected. This shaft will prospect that section of the mineral belt to great depth. Immediately south of the Standard and of the Bulwer comes the Bodie, of which so much has been said, and about which there has been so much excitement. Without any previous development every one is aware that it has produced in the last two months about \$12 to the share in dividends. This was probably working the mine too fast, and not giving it a fair show, for if the same course had been pursued in this that was followed in the Standard, and the working shaft had been sunk and the mine opened, it would have undoubtedly shown years of dividends ahead and have continued to pay from \$1 to \$2 per month. The ground is little explored, but the confidence of the mining men in the mine is unabated. In fact they think much more highly of it than they did when it was selling for \$54 per share. Further developments show that it is not a pocket, but a vein. From the nature of the ground it is undoubtedly safe to assume that it will continue to develop new veins and new ore bodies similar to those found immediately north of the Standard.

"There are several claims to the west of the Bodie and in its immediate vicinity. Among these are the Riqueza, the Rustler and South Bulwer. The Riqueza appears to be located where, if the veins in the Bodie should continue in the same direction, they would pass through the ground; but that remains to be seen. The Riqueza is crosscut, and the Mono—the southern part of the Bodie that was cut off—is sinking a shaft a short distance to the east of the Riqueza, and they claim that they are in the range to be on the continuation of the Bodie vein. Time will tell. Immediately to the south of these mines—the Bodie, Riqueza and other claims that I have mentioned—comes the Relief, which is an old location, with a large ledge. Although but little has been done, still the location is a very desirable one, and the ledge shows strong six or eight feet thick, and may turn out to be another Bodie, in depth. Immediately west of this will be found the South Standard, the South Bodie, and still south of these are the California, the Republic, the North Nooday, Concordia, Nooday, Booker, and Spalding. Many of these locations have good prospects for a ledge. Some are sinking without any ledge to start with; and persons investing should be very cautious to know that the party has a ledge on which to make a location, or the location will be legally void. There are also, on the middle of the ridge—which appears to be a little too far west for one mineral belt, and too far east for the other, several locations, of which I shall speak in a future letter, and after a more thorough examination. The Rustler is now booming up, and people investing in Bodie stock should give attention to it. It is one of the oldest locations in the camp. The parties owning it are sinking rapidly, and indications are that a rich ore body will soon be discovered. To enable them to secure as soon as possible what they seek, arrangements have been made by which hoisting material will be in Bodie in a few days, after which we expect to hear of a rich strike in Rustler. The Golden Gate, formerly Ophir, is also one of those mines that we call the attention of investors to. This mine was recently disposed of to very responsible parties, and, from its location, we feel secure in giving it prominence. The parties having purchased the same no doubt knew their business, and will reap a rich harvest in the immediate future. The stock is now selling at \$1 per share. If we know anything at all, we feel certain that parties purchasing will not only not lose anything, but, on the contrary, be the fortunate possessors of a bona fide property. The Walker mine is situated near the summit, and joins Sitting Bull mine; it is one of the richest we have visited. The sinking has not been very great, present depth being only fifteen feet. From the surface and other indications, it promises to be very rich. Owing to its proximity to Sitting Bull, its value, of course, is enhanced."

MONTEREY.—Silver, gold, cinnabar, iron, marble, and limstone exist in greater or less quantities, the production of lime having especial prominence. Near the Mission San Antonia, gold placers have been worked in a small way for a number of years.

NAPA.—Important discoveries of cinnabar have given the mining interests of the county a new impetus. The Redington, Manhattan, and California quicksilver mines are located near Knoxville, in this county. The Calistoga mine (gold and silver) has a true fissure vein and some good ore. Quicksilver mines exist all over the county. Rich deposits of iron have been found at Chiles Valley.

NEVADA.—This county is chiefly mineral, the gold mines being among the most productive in the State. Through Nevada County the glacial drift is deeper, clearer and better defined than elsewhere throughout the western slope of the Sierra. Between the South and Middle Yubas extends a vast and continuous chain of grain or gravel hills, embracing the mining districts of Eureka, Moore's Flat, Woolsey Flat, North Bloomfield, Humbug, Columbia Hill, Chimney Hill,

Badger Hill, Cherokee, North San Juan, Manzanita Hill, Sweetland's, French Corral, Sucker Flat and Smartsville. The deposits of gravel in these places are from one hundred to four hundred feet in depth. It is estimated that the basin, covering an area of six miles square, near Nevada City, has produced over \$75,000,000 in gold, and the yield exceeds \$2,000,000 annually at the present time. The quartz veins, as a general thing, seem to increase in size and richness as greater depth is attained.

PLACER.—Gold mines of great value are being worked, and new developments constantly made. The principal mining districts are Dutch Flat, Gold Run, Todd's Valley, Bath, Iowa Hill, Michigan Bluff, Auburn, and Newcastle. At Dutch Flat and vicinity are numerous high ridges, having an accumulation of gravel in thickness from one hundred to three hundred feet, which are being mined by hydraulic process and underground excavation, producing several million dollars annually. Hydraulic and drift constitute the principal branches of mining here.

PLUMAS.—Gold mines are found throughout the county, and are worked with great profit. Quincy is the center of a productive mining region, and at Taylorville are quartz mills and valuable mines of gold and copper.

SACRAMENTO.—Considerable placer mining is carried on in the foot-hills, at Mormon Island, Folsom, Willow Springs, Sulky Flat, Michigan Bar, and several other places, once famous mining districts. Some quartz deposits are also being worked with profit in the vicinity of Folsom.

SAN BENITO.—The mineral resources are not fully developed, but quicksilver, as well as silver-bearing veins of undoubted wealth, have been discovered.

SAN BERNARDINO.—This county is rich in minerals, as yet but partially developed. At Holcomb and Bear Valleys placer and gold quartz mines have been worked for the past fifteen years. Gold diggings are also found on Lytte Creek. In the desert lying between the great Basin or Valley of the Colorado, and the San Gabriel and San Jacinto ranges, are situated Clarke, Amargosa, Twenty-nine Palms, and other mining districts of much promise. Tin mines are found in the Temescal range.

SAN DIEGO.—Gold was shipped from the Bay of San Diego as early as 1828, and old settlers claim it was taken out at a distance of less than forty miles from the beach. In 1859 a negro worked an arastra on a gold-bearing quartz ledge thirty-five miles northwest of the city. In 1870 placer gold was discovered about forty miles northeast of the city, and shortly afterwards a ledge was struck, the richness of the quartz creating great excitement, and the rush to the Julian mining district commenced. Banner and Julian are the principal mining towns of the county.

SAN LUIS OBISPO.—Discoveries of quicksilver have been made in the Pine Mountain region, near Cambria, where the Oceanic Mine, with a twenty-ton furnace, is producing metal, and gives evidence of great value. Cinnabar has also been met with at San Simeon.

SANTA BARBARA.—The most notable mineral deposits yet found here consists of petroleum, with vast beds of asphaltum. Some cinnabar has also been found. Some of the oil wells being sunk in this county, having reached a depth of several hundred feet, are beginning to yield with considerable abundance an excellent quality of petroleum, warranting the belief that this material will yet become a source of much wealth and profit.

SANTA CLARA.—Noted for possessing the richest quicksilver mines in the world—the New Almaden, Enriquita and Guadalupe—from which came, until recently, nearly all the quicksilver used on the coast and exported.

SHASTA.—In the eastern part of the county valuable copper mines are being successfully worked. Iron and coal mines have also been located.

SIERRA.—Resources chiefly mineral. The western slope of the county is very broken, being alternately high ridges, capped with gravel and volcanic matter, and deep cañons. In these gravel ridges are the rich gold mines that have made the county famous. From five to seven millions has been the average annual product for many years. The "Blue Lead" deposits bear gold in the greatest quantity. The Sierra Buttes mine, near Downieville, is one of the most remarkable on the coast. The company have three mills, aggregating 86 stamps. The ore, assaying \$7 per ton, is mined and milled at about \$2.05. The mine has paid the stockholders about \$250,000 annually. The Bald Mountain mine is another evidence of what energy and perseverance can accomplish. This mine was opened by a company of working miners, and in 1874 produced \$324,000. It is estimated that \$7,000,000 yet remain in the claim. Valuable iron mines have been located, the difficulty of access being the only hindrance to their successful working.

SISKIYOU.—Extensive placer mining is carried on along the Klamath, Scott and Salmon rivers; also, some quartz mining along these streams and elsewhere in the county, the "Black Bear" ranking among the best mines in the State.

SOLANO.—In a range of hills north of Suisun, rich cinnabar mines are being opened up. Coal, marble and hydraulic cement are also among the productions.

SONOMA.—The county contains gold, silver, quicksilver, chromic iron, copper, sulphur, etc. The chief mining interest centers in quicksilver, and Cinnabar District, or Pine Flat, on the northeastern border of the county, being the principal scene of operations. A large number of furnaces have been constructed for reducing these ores, and most of them were, at one

time, in active operation. Owing to the decline in the price of this metal the majority of these furnaces have done but little for the past two years.

STANISLAUS.—The placers along the principal rivers were once very productive, and are still being worked in some places with good results. There are also valuable deposits of copper in this county, though they are not being much worked at the present, owing to the low prices of that metal.

TEHAMA.—Gold is found in the Sierra Nevada, and salt and medical springs of great value exist in the Coast Range. Discoveries of quicksilver have also been made.

TRINITY.—Placers of great richness were found along the Trinity River and its branches, and were worked for a number of years with great energy and profit. Recently water from a great elevation has been introduced, and the deep gravel deposits have been attacked by the most approved system of hydraulic washing. The gold product has greatly increased. Valuable cinnabar deposits have also been opened near Trinity Center, the ores of the Altoona mine yielding the highest percentage of metal of any in the State.

TULARE.—In the high Sierra, near the border line of Inyo County, is Mineral King district, where ledges of great size exist, bearing gold, silver and lead. These ledges have not yet been sufficiently opened to test their value, their great altitude rendering them difficult of access, and the winters severe, having prevented their development. In the foot-hills are placers of limited extent, some portions of which have been worked with moderate results.

TUOLUMNE.—One of the oldest and formerly one of the most prosperous of the mining counties. The more accessible placers have now been pretty well worked out. There still remain, however, banks of hydraulic gravel, and the Pliocene channels which, with a moderate expenditure of capital, could be made to pay well. The Table Mountains, which cover the remains of these "buried rivers," are the best preserved of any in California. Quartz mining is also beginning to attract considerable attention, the Sonesby, Mount Jefferson, and various other mines of this class, being considered very valuable properties.

VENTURA.—Placer and quartz veins are known, but the interest is not fully developed. Cinnabar has been discovered, and gypsum, potters' clay, petroleum, etc.

YOLO.—Quicksilver has been discovered in the mountain region.

YUBA.—The placer mines at Sucker Flat, Smartsville and Timbuctoo, are among the most productive of their class in the State, while quartz mines have been successfully worked at various places.

Nevada.

CHURCHILL.—Silver and gold mines have been discovered in various localities, but so far have not proved remunerative. Beds of salt and carbonate of soda, of great purity, are quite numerous.

DOUGLAS.—Mines of silver and gold exist in several localities, but few, if any, have been worked with profit.

ELKO.—Mines of silver, gold, lead and copper have been located in various parts of the county, and important mining districts have been organized and are rapidly growing. The most active and important district in the county, at the present time, is Tuscarora, in which a number of mines are being vigorously worked and considerable bullion turned out. A good deal of work is being done in the several other districts, and new discoveries of supposed value are constantly reported. There are placers in the northern part of the county worked mostly by the Chinese, who make fair wages.

ESMERALDA.—Mining for precious metals is the principal resource of the county. Silver was first discovered at Aurora, in 1860, and the district of Esmeralda formed. A large number of silver and gold-bearing veins were found, and some \$2,000,000 extracted. Columbus, Silver Peak, Palmetto, Mammoth, Volcano and Wilson are all prominent districts, rapidly developing, and silver, gold and copper are found in all. At Belleville, near Columbus, is the celebrated Northern Belle mine, whose regular dividend, disbursed monthly, is quite welcome on California street. South of Columbus are inexhaustible deposits of borate of lime. Near Silver Peak is the "Great Salt Basin," sixteen miles in length by three in breadth, covered with pure salt. After an almost entire intermission of ten or twelve years mining operations are beginning to be resumed about Aurora, where, under more thorough and systematic work, it is anticipated that valuable ore deposits will be developed.

EUREKA.—The principal mining districts are Cortez, in the northwest; and Eureka, in the eastern central part of the county. The latter is a very important mining locality, making a bullion production of about \$10,000,000 per year, ranking in this respect next to the Virginia and Gold Hill districts. Besides Eureka and the Richmond, which for several years have distinguished themselves by their large bullion productions, there are a number of other promising mines here which are beginning to yield quite freely, and with every prospect that they will soon rival the above mines in their out-put of bullion. Foremost among these are the K. K., Hamburg and Jackson, with several others having an almost equally promising future.

HUMBOLDT.—The mountain ranges of this county abound in gold and silver-bearing lodes, some of them of established value. Copper, lead, antimony and other useful metals are also found in great quantity. On the desert plains and alkali flats heavy beds of sulphur, salt and

soda occur, all which are now being extensively utilized. The precious metals are also being actively and successfully mined in several districts. Rye Patch, Star, Sierra, Winnemucca and Battle Mountain being just now the most lively and productive. At the sulphur banks in this county large quantities of this mineral are being extracted and refined by the two companies owning and operating works there. The product of these refineries finds a market in San Francisco, where it is preferred for its greater strength and purity to the imported article.

LANDER.—From '62 to '68 a great many mining districts were organized in this county, and an immense number of company locations made. Long and costly wagon transportation, the great expense of working the ores and disappointment often as to the value of the mineral deposits found, lead afterward to the almost entire abandonment of most of these districts, some of which, until recently, have remained nearly depopulated, as several still do. The town of Austin, the business center of the Reese River country, the name by which this region is generally known, is to-day and for sixteen years, has been an active mining locality, most of the bullion made in the county having been turned out here. Lately new life has been infused into some of the other camps, which stand a good chance of partially fulfilling the hopes entertained of them at the time of their first settlement.

LINCOLN.—The mines in the Ely district, of which Pioche is the business town, were discovered in 1869. The Raymond & Ely, and Meadow Valley have been the two most prolific claims here, both having been outfitted with mills and hoisting works at an early day, and since turned out considerable bullion. Both of these mines continue to be worked, the former still yielding bullion in considerable quantity. The Hillside Mine, in this county, lately furnished with reduction works, is also a property of unmistakable value. Many other claims are being developed, with good prospects, and we may reasonably hope to see some of them advanced to the rank of profitable bullion producers.

LYON.—The great Comstock ledge extends or sends off branches into this county, which, in and around Silver City, are divided up into a great many mining claims and worked extensively. Here we have the Dayton, Kossuth, Amazon and Glasgow, Daney, and many other mines on which a large amount of work has been done, and which, with greater depth, promise to become remunerative properties. At Sutro is the initial point of the Sutro Tunnel, one of the most gigantic works of the age, due notice of which will be found elsewhere in this volume. Near where the town of Dayton now stands miners washed the ground for gold long prior to the discovery of the Comstock. At this point extensive mills are located, engaged principally in the reduction of ores from the Gold Hill mines, in working tailings, etc. The mining districts of Palmyra and the town of Como are in the mountains southeast of Dayton. Copper ore in abundance is found in the Walker River country.

NYE.—The precious metals are found in the numerous mountain ranges—the Shoshone, Toiyabe, Toquima, Belmont, Hot Creek, Desert, White Pine, Eagan, Snake and Shell Creek—and important developments are constantly being made. The Philadelphia, Reveille, Troy, Twin River, Jefferson, Tybo, Union, and Mammoth, are the principal mining districts of the county, though much work has been done outside of these, with fair prospects. Belmont, the county seat, is situated in the heart of a rich silver district, discovered in 1867. In Union and Mammoth districts, discovered in 1864, and afterwards nearly deserted, some very rich mines have, within the past two years, been opened up, and all of which are now paying handsomely and in some instances quite largely.

ORMSBY.—The mineral resources of Ormsby County are just beginning to attract attention. Recent developments have demonstrated the fact that at the eastern base of the Sierra and near the town of Genoa runs an independent fissure vein of mineral-bearing quartz, which has the polar strike, eastern dip, clay walls, and all the peculiar characteristics of the Comstock Lode, being rich in also both gold and silver. The productions of this lode differ materially from the base and refractory ores of the Peavine district of Washoe, being remarkably free from sulphur and antimony, and bearing traces only of copper and enough lead to work well. A great many locations were made here in 1861, and much work afterwards done upon some of them in the shape of deep lying tunnels. As the lode failed to be reached as soon as expected, all work was suspended after having been prosecuted for a year or two, or for a less period, accordingly as the means of the several companies happened to hold out. As the conviction remains strong on the minds of many good judges that this lode ought to be thoroughly exploited, there is every probability that efforts directed to that end will be made in the early future. Near Carson City, the county seat, the North Carson mine, more fully described by us elsewhere, is situated, this being the first claim outfitted with steam-hoisting works and opened with thoroughness in this section of country.

STOREY.—In Storey County lies the great mineral heart of Nevada, the Comstock Lode. The locality abounds in gold and silver. In early days placer diggings were numerous and remunerative, and placer mining is still carried on near Virginia and Gold Hill, where hundreds of acres are being held for surface washings. There are in Storey County in the neighborhood of 500 mining locations in and around the Comstock, and a thorough examination of the section warrants the assertion that there is not one of them that has not a fair prospect of finding, sooner or later, pay ore. A description of the more important or promising of these locations is made elsewhere in this work, precluding the necessity for any further mention of them here. Prior to the discovery of the Comstock Lode placers were worked on a limited scale along the

upper part of Gold Cañon and along Six-mile Cañon, in this county, this branch of mining having also been pursued since that event in a small way about Virginia City.

WASHOE.—Until recently, the principal mining district of Washoe County was the Peavine, about eight miles north and west from Reno. This section is rich in precious metals, but the ores have proved to be very refractory, being heavily mixed with sulphur, arsenic, etc. The later and more scientific methods of reduction are however, fast overcoming the difficulties hitherto encountered, and these deposits are attracting attention. During the past year, a number of rich argentiferous lodes were discovered at a point in the northerly part of the county, near Pyramid Lake. So far as opened, these lodes give promise of permanence and richness, and, being in the hands of energetic men, they will probably be explored with diligence and completeness.

WHITE PINE.—Although this district was organized as early as 1865, the movement known as the "White Pine stampede" did not occur until three years later—having grown out of the discovery of exceedingly rich silver-bearing ore in the Eberhardt mine, on Treasure Hill, in the summer of 1868. The excitement consequent upon this discovery was one of the wildest and most disastrous of all the mining "rushes" that have taken place on this coast. Though so hurtful to many in its immediate, the ultimate consequences of this movement have been, on the whole, beneficial—having led to the early exploration of the promising mineral districts scattered over Central and Eastern Nevada. White Pine itself no longer attracts attention; but the region that it was indirectly the cause of bringing to light is being rapidly populated, and already begins to make free shipments of bullion. The most productive districts of this county are Tybo, Reveille, Cherry Creek, and Robinson—the White Pine District itself also turning out a good deal of bullion.

Idaho.

ALTURAS.—Placer and quartz mines are profitably worked, and numerous quartz mills are in operation. The first silver-bearing ledges were discovered in 1863. The mines at Rocky Bar and Atlanta have obtained considerable celebrity. The veins are both gold and silver bearing.

BOISE.—This county contains the famous Boise Basin, twenty miles in length by ten in breadth, considered the richest mining district in the Territory of Idaho. The first discovery of gold was made within two miles of the town of Centerville, in August, 1862, and the placers are still worked by hydraulic process. In addition to the alluvial deposits, rich gold and silver-bearing quartz ledges have been discovered. The Gold Hill quartz mine, in this county, has about the best record to point to of any property of the kind in the territory, having been a large, steady and profitable producer of gold for over fourteen years. This result being due not less to an efficient and otherwise superior management than to the intrinsic merits of the mine itself.

IDAHO.—Rich placer mines were discovered in 1861, at the head of Meadow Creek, one of the tributaries of the Salmon River. Since that time several valuable quartz ledges have been found, and are being worked with profit.

KOOTENAI.—Gold was discovered in this county, on the bank of the Pen d'Oreille River, in 1852, but its mineral resources are entirely undeveloped.

NEZ PERCE.—Indefinite reports of rich discoveries in the Salmon River Mountains, and the knowledge of some placer mining in the vicinity of Lewiston, is all that can be said of this county.

OWYHEE.—The mining belt contained within the limits of this county was discovered in 1863. The principal mining districts are in the vicinity of Silver City, and are designated as Ruby Hill, War Eagle, and South Mountain. The ledges are gold and silver bearing. The most noted mines among the early discoveries are the Mahogany, Silver Cord, Poorman, Ida Ellmore, Pauper, War Eagle, South Chariot, Empire, Golden Chariot, Bay State, and Golconda. The discovery of the Black Jack, a very rich lode, during the past year, has served to partially revive mining in the district, work having lately been started up on several of the older claims after a long interregnum of active operations. The outlook for Owyhee is better just now than for many years past.

Arizona.

The Territory of Arizona lies in part between the Rocky Mountains and the Sierra Nevada, and is bounded by New Mexico on the east, Utah on the north in part, by Nevada on the north and west in part, and by the southern portion of California for the balance of the western line; and on the south by the Republic of Mexico. It is about 325 miles wide in both directions, and contains an area of 113,916 square miles, or 72,906,240 acres. Physically considered, Arizona consists of a series of wide plateaux, generally having a mean elevation of from 60 to 100 feet on the south-west, to from 6,000 to 7,000 on the north. These plateaux are crossed by mountain ranges, while magnificent peaks diversify the prospect. They are riven in all directions by great cañons, vast gorges, deep channels, cut by the streams and rivers which,

since the mysterious Archæan ages, have been forcing their way through this huge mass of mountain formation.

The great silver belt of Arizona, so far as yet developed, commences about forty miles south of the great bend of the Colorado, in the north-eastern part of the Territory, and extends in a line varying in width from forty to eighty miles south-easterly to the Gila River, and thence southerly to the Mexican line, in the south-eastern portion of the Territory. There is, however, a break in this line of about seventy miles to the northward of Tucson, to offset which, scattered mines and dry placers are found in the western portion of Pima County, the mineral resources of which have been but little explored. To the extreme south-eastern portion of the Territory, adjacent to the Chiricahui and Dragoon Mountains, the same remark is applicable.

The principal districts, mines, and placers located near Prescott, in Yavapai County, as reported in *Hinton's Hand-Book of Arizona*, are as follows :

HUMBUG DISTRICT.

Accidental.	Fawn.	Naiad Queen.	Silver Star.
Basin.	Fourth of July.	Omega.	Silver Vault.
Bising.	Foy.	Oneida.	Stand-by.
Black Jack.	George.	Ontario.	Swilling.
Brunson.	Georgia.	Pearl.	Taurus.
Cayuga.	Hidden Treasure.	Rescue.	Tex.
Chenango.	Highland Chief.	Robert Lee.	Tip-Top.
Clauson.	Huron.	Rodenburg.	Tonawanda.
Cottonwood.	Inca.	San Carlos.	Vandyke.
Crickett.	Isabella.	Signet.	Walsh.
Eddy.	Jefferson.	Silver Chamber.	Willow.
Eladen.	McDerwin.	Silver Jacket.	

HASSAYAMPA DISTRICT.

Adel.	Davis.	Norton.	San Gunars.
Benjamin.	Empire.	Oriental.	San Miguel.
Berry.	Jedo.	Pensacola.	Senator.
Birth-day.	King Lear.	Perry.	Storm.
Crook.	Maple Gulch.	Plug Ugly.	

WEAVER DISTRICT.

Antelope.	Don Quixote.	Marcus.	Sexton.
Bonanza.			

TURKEY CREEK DISTRICT.

Archer.	Continental.	Little Joker.	Peerless.
Ariel.	Corsican.	Mammoth.	Roach.
Bashford.	Goodwin.	Masterson.	Silver Joe.
Belzora.	Grasshopper.	McCurdy.	Sunrise.
Bertie.	Hatz & C.	Miner.	Twin Bros.
Bully.	Herbert.	Morning Glory.	Trinity.
Burmeister.	Holmes.	Nevada.	White Pine.
Cole.	Jumper.	Pearl.	Zalida.
Collier.			

BRADSHAW DISTRICT.

Ballenciana.	Eclipse.	Idlewild.	Mountain Boy.
Beardsell.	Eclipse N.	Index.	Nopal.
Benton.	Gray Eagle.	Index S.	Shelton.
Blandena.	Herbert.	Mazepa.	

BIG BUG DISTRICT.

Belle.	Clifton.	Kit Carson.	Sunrise.
Big Bug.	Dividend.	Mesa.	Ticonderoga.
Bulger.	Eugenia.	Poland.	Turkey.
Bullion.	Gen. Kautz.	Silver Belt.	Vanderbilt.
Chafford.	Gopher.	Silver Flake.	

PECK DISTRICT.

Black Warrior.	Evening Star.	Little Fraud.	Queen of Beauty.
Concord.	Jack-on-the-green.	Occident.	Silver Prince.
Doyle.	Litigant.	Peoples.	Wm. Wallace.
			Wild Pigeon.

TIGER DISTRICT.

Burton.	Grecian Bend S.	Tiger.	Tiger 3 to 6 S.
California.	Laurena.	Tiger S. 4.	Tiger 7 S.
Grecian Bend.	Thurman.	Tiger N ex.	

The principal districts, mines and placers in Pima County are as follows:

TYNDALL DISTRICT.

Abercom.	Crystal.	Khedive.	Rosaria.
Bertha.	Cochise.	Magnolia.	Saliro.
Blake.	Dora.	North Star.	Silver Star.
Bushell.	Empress.	Ophelia.	Tubac.
Braghill.	Georgia.	Pinto.	Tumacacri.

The Bushell mine, which has four old shafts—evidences of ancient workings—is a marvel in richness and beauty of ore. In a new shaft now being sunk, at a depth of twenty-four feet it displays a massive vein of high grade ore, black sulphurets, assaying as high as \$2,460 to the ton. The lode is a true fissure, with perfectly formed walls of porphyritic granite.

AZTEC DISTRICT.

Abundancia.	Inca.	La Purissima.	Saint Louis.
Almoner.	Iturbide.	Lost Mine.	San Ignacio.
Anahuac.	Jesuit.	Oro Eslampado.	San Ildefonso.
Aztec.	Joaquinata.	Plata Plata.	Sombrero.
Emma.	Josephine.	Robley.	Toltec.
Hidalgo.	Juarez.		

The St. Louis mine, which receives the junction of two immense lodes—the Empress of India and the General Craig—is a new mine, but is developing a massive vein of wonderful richness. It is also a true fissure in the same formation as the Bushell. A shaft of the same dimensions as the Bushell is being sunk on the vein, and at the depth of twenty-three feet the most satisfactory results have already been obtained. The ore is abundant, and will mill \$80 to \$100 to the ton—a better yield than the average Comstock ever furnished.

ORO BLANCO DISTRICT.

Alaska.	Louise.	Sonora.	Wyoming.
Alaska ex.	N. Carolina.	Warsaw.	Yellow Jacket.
Idaho.	Ostrich.		

SANTA RITA DISTRICT.

Bell.	Froivita.	Grossett.	San Jose.
Buenna Ventura.	Gibbons.	Mariposa.	Santa Maria.
			Sedgewick.

ARIVACA DISTRICT.

Arizona.	Black Eagle 2.	Mogul.	San Francisco.
Bell Audretta.	Buena Vista.	Ortiga.	Silver Eagle.
Black Eagle 1.	Imperial.	Relief.	

CABIBI DISTRICT.

Bahia.	Cokespa.	Providencia.	Tiger.
Cobriza.	Picacto.	Tajo.	

CERRO COLORADO.

Belmont.	Draughtsman.	Home Ticket.	Surveyor.
Bonanza.	Esperanza.	Mina del Tajo.	Twenty-Six.
Captive.	Esperanza E.	Poor.	Vazura.
Cerro Colorado.	Heintzleman.	Recorder.	

The principal districts, mines, and placers in Pinal and Maricopa Counties, are as follows:

SILVER KING DISTRICT.

Alice Bell.	Florence Adams.	Monday Morning.	Silver Chief.
Amador.	Ground Hog.	Montezuma.	Silver Cloud.
Athens.	Guanajuato.	Mountaineer.	Silver King.
Barnes.	Hamilton.	Nabob.	Silver King N.
Ben Franklin.	Hamilton S.	New Philadelphia.	Silver King S.
Bilk.	Hard Cash.	Pelican.	Styles.
Black Cloud.	Hardisty.	Pike.	Summit.
Bon Ton.	Helpmate.	Pinal.	Surprise.
California.	Hercules.	Reading.	Surprise S.
Cecelia.	Hoo-doo.	Redeemer.	Upper Crust.
Christmas.	Josephine.	Republican.	Washington.
Crown Point.	Last Chance.	Rising Sun.	Wedge.
Democrat.	London.	Ryan's.	Wild Apache.
East Union.	Moverick.	Scratch.	Wonder.
Fernandez.	Mogul.	Seventy-Six.	Wyoming.

GLOBE DISTRICT.

Almaden.	Chillson.	Lazy Bob.	Robert E. Lee.
Aztec.	Chromo.	Little Mac.	St. Louis.
Bameys.	Cook.	Little Mary Ann.	Saloma.
Bixby.	Democrat.	Meteor.	Savage.
Blue Bird.	Dickey.	Mexican.	Scott.
Blue Cap.	Duryea,	Miama.	Shasta.
Brilliant.	Ford.	Monarch.	Sherman.
Buckeye.	Friday.	Mt. Morris.	Silver Star.
Burns.	Globe.	Munson.	Stonewall Jackson.
Byron.	Grand Prize.	O'Doherty.	Susy.
Cadmus.	Hannibal.	Rambo.	Townsend.
Casket.	Helen.	Red Cross.	Treasure Vault.
Cedar Hill.	Hundred and One.	Rescue.	Webbs.
Centennial.	Isabella.	Richmond.	Wheatfield.
Champion.	Kelly.	Robert Allen.	

PIONEER DISTRICT.

Arko.	Flagstaff.	Lewis.	S. B. Farnham.
Babe.	Gem.	Morning Star.	Silver Belle.
Baldwin.	Germania.	Mun Shunk.	Silver Coin.
Baltimore.	Gift.	Ne Plus Ultra.	Silver Queen.
Belcher.	Glasgow.	Northern King.	Southern Belle.
Belladonna.	Goodenough.	Ohio.	Sunrise.
Bowman.	Grand Turk.	Peach Orchard.	Wanawhatta.
Copper Top.	Hope.	Promo.	Webfoot.
Empire.	Hyde.	Queen Creek.	Wheeler.
Essex.	Idlewild.	Ranger.	Yankee Boy.
Eureka.	Justice.	Saddle Rock.	

The principal districts, mines, and placers in Mojave County, are as follows :

CASTLE DOME DISTRICT.

Big Dome.	Cortez.	Little Willie.	McLane.
Buckeye.	Flora Temple.	Montezuma.	St. Charles.

EUREKA DISTRICT.

Bronze.	Buenna Vista.	Margarita.	Vernon.
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OWEN DISTRICT.

McCracken.	Senator.	Signal.	Silver Glance.
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GREENWOOD DISTRICT.

Burro.	Burro Ex.	Burro.	First Ex. South.
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CHLORIDE DISTRICT.

Albany.	Empire.	Pink Eye.	Senator.
Blue Dick.	Hermit.	Quaker.	Silver Hill.
Courier.	Independence.	Schenectedy.	Sunday School.
Diana.	Oriental.	Schuyllkill.	Virginia.

HUALAPAI DISTRICT.

American Flag.	Clinton.	Jones.	Niles.
Armagosa.	Dandy.	May Flower.	Sixty-Three.
Black Snake.	Fairfield.	Mocking Bird.	Tiger.
Cady.	Fontenoy.	New York.	

CERBAT DISTRICT.

Champion	Legal Tender.	New Era.	Snowflake.
Continental.	Little Chief.	O'Fallon.	Twins.
Franklin.	Lobena.	Oro Plata.	Vanderbilt.
I. X. L.	Monitor.	Paymaster.	

The foregoing list does not, probably, embrace one-tenth of the mines located in Arizona, nor one-hundredth of the valuable claims that will be located in the future. The list is published more particularly to call the attention of the merchants, and other business men, and capitalists, to the importance of securing, at as early a day as possible, railroad communication with these vast mining districts. The trade of Arizona naturally belongs to San Francisco. Our foundries and machine-shops should build its mills, furnaces, and hoisting-works; our lumbermen should furnish the material for constructing the houses, and timbering the mines; our merchants should furnish the supplies of its cities, towns, and camps; our capital should continue to own and control its mineral resources. These results can only be attained through a railroad connection. Chicago and the East are reaching out for the trade of Arizona, and

every day brings them a little nearer. The Kansas Pacific Railroad, and the Atcheson and Santa Fe Railroad are steadily closing up the gap. Will we quietly sit down and see our inheritance pass into the hands of the cities east of the mountains?—or shall we, like business men, extend to Stanford & Co., such aid as they may require, and push our Yuma road through to Tucson, with branches to Prescott and the silver fields, a year at least ahead of our Eastern rivals? This, to-day, is the paramount question with the business men of San Francisco.

THE COMSTOCK.

Years of labor and millions of money spent in prospecting, along and beneath the surface, have demonstrated the fact that the metal-bearing quartz ledges of the great basin of Nevada are distinct in all essential characteristics from the formations which inclose them. Another marked peculiarity of these mineral lodes is, that they conform, in their general trend, to the great chains of mountains which belt the State. The inference from this latter fact is obvious, that these ledges are fissure veins, which have been formed by and along the lines of these upheavals. These chains of mountains are generally longitudinal in their bearings, and hence these ledges have nearly a general polar trend. The exceptions to this general rule, which appear wherever a vein is found lying in an adverse direction, are only observable where the formations are broken, and have been contorted from their regular trend by what are called "surface disturbances." The influences which have caused these disturbances are usually traced in counter-formations of volcanic rocks, which have been thrown up from below since the great and more general lines of upheaval have had an existence. Although these fissure veins have been disturbed by these subsequent upheavals at the point of intersection of the two formations, they generally are found, deeper down and further along the line of their trend, occupying their original relative positions, and continuing on indefinitely.

These mineral-bearing quartz ledges have other well-known and peculiar characteristics. They are usually found encased in, or at least bordered on one side by, well-defined clay walls, which form distinct lines of separation from the country rock. They usually exist in formations which admit of smooth and easy lines of cleavage, and have a permanent dip to the east. Yet, exceptions to even these well-known peculiarities are sometimes found. There are what are termed "contact veins," which will be found lying between cleavage rocks and other and irregular formations; ledges with dip to the west, having their clay walls reversed; and even irregular masses of mineral-bearing quartz, without any particular trend or dip. Such will always be found to have been pushed over and thrown from their regular positions by some disturbing force, such as that above mentioned.

The Comstock Lode is a genuine fissure vein, possessing all of the necessary characteristics in a remarkable degree. The lode lies nearly north and south, has a dip of about 45 degrees to the east, and a heavy clay, hanging wall. Its length has not even yet been fully determined. From the few thousand feet which the early locators supposed it to possess, it has been traced as many miles, and each year is adding to its acknowledged extent. Another idea of the Comstock which has been tenaciously held to by the early locators along the line of its trend, and those who have succeeded them in interest, is fast being proved untenable; and that is, the existence of a single ledge only. That there are several ledge formations, similar in their essentials yet distinct in other particulars, cropping to the surface east of the original Comstock, and separated from each other by broad volcanic dykes, no one who has ever carefully examined the country can deny. The advocates of the one ledge theory denominate all these "feeders" to the main ledge, and such, indeed, most of them may become, if traced to a sufficient depth; but until that has been done, the advocates of the theory of parallel ledges have the best of the argument and the position. The fact is, what is known as the Comstock is composed of many parallel ledges, some of which, like that of the Occidental, can never be traced to a sufficient depth to unite with the "mother lode." The same is true of that on which the Lady Bryan is located. While it may be true that the ledge on which the "big bonanza" of the Consolidated Virginia and California is located, and which lies 1,000 feet east of the original Comstock, and others still further east, unite with that ledge at some point on the incline, from 3,000 to 4,000 feet perpendicularly below the surface, there are others, still further east, cropping out in parallel lines, all of which have their dip also to the east the same as the first discovered ledge, and it is very questionable, to say the least, if these, or in fact any of the eastern ledges, will ever be found to unite with the western ledge. They may all concentrate in a monster mineral deposit below, but they will scarcely be traced to the same ledge, since they present formations which are by no means identical.

The discovery of the Comstock was one of the direct results of the great influx of gold-seekers to the Pacific Coast, although it did not take place till some years afterwards. The vicinity of its croppings and the cañons leading to the south and east from the slope of Mount Davidson were prospected for gold. The early pioneer found Mexicans at work crushing the rock which cropped to the surface along the line of the early locations on the Comstock, for gold, that metal predominating near the surface. In 1853 claims were worked for gold near a Mormon settlement named Johtown, near the mouth of the cañon leading south from Gold

Hill. Among the first prospectors attracted to the vicinity by the hope of finding gold, were Allen and Hosea Grosch, better known as the Grosch Brothers, and James Finney, the "Old Virginny" of early days. The Grosch Brothers were the only ones of these pioneers who had sufficient knowledge of geology to recognize the existence of silver in any of its native forms, and they, soon after arriving in 1853, reported the discovery of a silver ledge lying east of and along the side of "Sunrise Peak," since called Mount Davidson; but it is questionable whether the first location by "foreigners," as the prospectors were called, was made by them or by "Old Virginny," but they made theirs on the Comstock, "Old Virginny" on the west or Virginia ledge. Still, placer mining held the attention of the miners almost to the exclusion of all thought of the silver lode. The first location on the Comstock, that made by the Grosches, was called the Pioneer, and was located where Virginia City now stands, and is doubtless comprised in the ground owned by the Ophir. The first assessment ever laid on the Comstock was levied on the Pioneer, and paid during the winter of 1855-6.

In the early days, of which mention is made above, the principal workings in the vicinity of the Comstock were in Gold Cañon and Nigger Ravine on the south, and in Six and Seven-Mile Cañons on the north. This continued up to and through the Summer of 1857. The diggings at Gold Cañon were carried on by some thirty or forty men, mostly Germans, among them the Grosches, who had been deterred from silver mining on their claim by the want of the mechanical contrivances and chemicals necessary for the reduction of silver ore. During the Summer of 1857 a road was built from Lake Bigler (now Lake Tahoe) over to Placerville. This promised increased facilities for the importation of machinery and other necessaries. The limited amount of water which the section afforded gave out early in the season, and the miners began to talk of quartz ledges and prospect for lodes; but they were sought for the gold that was in them. It was the intention of the Grosch Brothers to procure machinery and the necessary chemicals for working silver ores; but that Fall Hosea died from the effects of a pick wound in his foot. Allen then started for California, with the intention of passing the Winter in superintending the construction of the required machinery; he was caught in the storms of the mountains on his passage over, and was reduced to the extremity of subsisting upon his own mule; he was at length rescued, only to die at Volcano, of fever induced by his exposures. With the death of these brothers passed away all the knowledge of the nature of silver ores and the manner of their reduction, which was possessed by the early Nevada pioneers.

It was, however, of too much importance to the world that the Comstock should be discovered and its vast treasures unearthed, for the rocks to guard their valuable secret longer. During the same winter (1857-8) a Norwegian, James Thompson by name, but better known among his comrades then and to history as "Snow-shoe Thompson," was engaged in carrying the mails from Genoa and Gold Cañon on foot over the mountains to Placerville. Prof. W. Frank Stewart, the well-known Washoe geologist and mining expert, was at that time connected with the *Weekly Observer*, published at Placerville, and to him Thompson was wont to bring the news from over the mountains and information from all the intervening country clear to Salt Lake. Thompson, at that time, brought to Prof. Stewart a small package of black-looking rock, bearing free gold, and wrapped in a piece of common check shirting. He said the boys had found it over in Gold Cañon; to them it was a new kind of gold-bearing rock, and they wanted to know what it was. The professor immediately pronounced it "black sulphurets of silver," containing free gold. Some specimens were sent to Sacramento to be assayed. The result startled the world. The black stuff was rich beyond compare. The fame thereof went abroad; the great excitement followed; and the next spring thousands went pouring over the mountains into Nevada. Up to this time this ore, assaying thousands of dollars per ton in silver, had been worked by the rude appliances of the day, for the gold which it contained, while the silver was allowed to go to waste.

But even the knowledge gained as above was productive of no immediate results. Silver ores could not be reduced, and still the surface diggings in Gold Cañon and Nigger Ravine held the southern position of the section, and those to the north and east of "Sunrise Peak," near where Virginia City cemetery now stands, held the northern. These were connected by an Indian trail over the Divide, and along where the Imperial hoisting works now stand. Dis-satisfaction crept into the camp. The followers of the fickle goddess were as fickle as Fortune herself, and many left the wealth of the Comstock and went to Walker River; and so the Summer of '58 passed. Early in '59 John Bishop and Aleck Henderson discovered a "likely-looking ledge" in what was then known as the right fork of Gold Cañon. Finney, "Old Virginny," the early oracle in mining matters, thought well of the location. The ground was prospected with pick and pan, after the custom of the times. The first pan yielded fifteen cents. H. T. P. Comstock, who then kept a store in Carson, followed in several others. Water was brought in a flume from up the cañon. The boards for this flume were "backed" over from Washoe. The amount allowed to each claimant was fixed by the miner's code at fifty feet, and the place called Gold Hill because situated on a little hill just outside of Gold Cañon. Later in the season quicksilver was introduced from Johnstown, and the yield greatly increased. Some miners averaged as high as \$50 per day. In April of that year Bishop and a couple of companions located the Yellow Jacket. This was the first location made in Gold Hill, and the name was bestowed upon it in consequence of a nest of yellow jacket wasps which disputed possession with the locators.

When Allen Grosch started for California, he left the records of his and his brother's claims and the personal effects of both with Comstock, who naturally went into possession of the locations and exercised the rights of ownership over the whole. It was in this way that he became connected with the claim which has given his name to the lode, and rendered it immortal. This claim became subsequently embodied with others controlled by Penrod & Comstock, and "Old Virginny," and is now included in the Ophir. It also includes the claim of John Jessup, who was killed by Sides in Gold Hill. This claim was jumped by Reilly and McLaughlin while the most of the people were off to Carson, where Sides was taken for trial; and this is their claim to the credit of first discovering the Comstock. Had the lode been named after the true discoverer it would have been called the Grosch Lode, for the brothers unquestionably made the first location thereon. This was made before any other persons in the whole section knew anything about silver ores or their reduction.

In the year 1859 locations were made, not only along the line of the Comstock, as then known, but the entire country was dotted with them. Still milling in the vicinity was done by arastras, of which the Ophir ran one, and the Central Mining Company No. 1 another. With the advent of 1860, however, came a new era in milling. In March of that year A. B. Paul visited the locality, and at once comprehended the situation. He entered into a contract with the Succor Company for 35,000 tons of ore, and then returned to San Francisco, organized the Washoe Gold and Silver Mining Company, received the appointment of general superintendent, and set about constructing a steam mill. Others followed in his path, and thus was inaugurated the milling interest of the Comstock. Mr. Paul pushed forward his movements with an energy worthy of the occasion and the great interests hanging thereon; and on the 11th day of August the whistle of a 32-stamp steam mill woke for the first time the echoes of the surrounding mountains, as it inaugurated the alchemical process of turning dark and dirty-looking rock into shining bars of silver and gold. The first ore reduced in this mill was taken from the staple claim in Gold Hill. This "Pioneer Mill," as it was rightly named, was located just below the Devil's Gate toll-house, and occupied the same position as the Devil's Gate Mill of to-day.

This Pioneer Mill won but by four hours, however, the proud distinction of being first to herald the advent of civilization into the wilderness. The Harris & Coover Mill began the mystic art upon the same day, and gave the thunder of its stamps to swell the mighty chorus chanted over the inception of the grandest industry of the age. Then the Douglas, the Rhode Island, the Marysville and others took up the glad refrain, and joined the swelling anthem. Soon after, steam began to sing its song of deliverance, another branch of this great industry was inaugurated, and the Woodworth or Old Ophir Mill, down on the Carson River, initiated the enterprise there, which has since grown to such wonderful proportions. About the same time the Hoosier State Mill carried it over toward Virginia, and thus has the work gone on, till from the Carson to Mt. Davidson, the mighty chorus of a thousand stamps goes up unendingly.

The great advantages which are attendant upon the present facilities for the transportation of ores and their reduction will be seen from the following: In 1859 the Ophir Company had forty-five tons of the rich rock of their croppings transported to San Francisco, for reduction. The cost of transportation alone was 25 cents per pound, or \$500 a ton. They paid \$450 per ton for smelting, and yet the ore was so rich, and the return so great—over \$3,800 per ton—that a liberal margin was still left the company. At the present time the costs of mining and milling, including transportation, are from \$21.75 to \$24 per ton.

The exact amount of bullion which the Comstock has given to the world will never be known; but close calculation, aided by the various statistics at command, show the amount to be not far from \$350,000,000. It is estimated that 600 cords of wood per day are consumed in furnishing the steam necessary to run the hoisting works and steam mills reducing Comstock ore, and that not less than 90,000,000 feet of timber and lumber are yearly consumed in the mines. The question naturally arises, whence the supply necessary to meet this great and constantly increasing demand?

The timber, wood, and lumber interests of the Comstock are a separate industry, and a brief sketch of the means resorted to to induce a supply of these necessaries, cannot be devoid of interest in this connection. Originally, the supply was drawn from the immediate vicinity of the mines, but that failed long ago. In fact, the whole country has been despoiled of its growth of timber clear to and over the peaks of the eastern range of the Sierras, from a point north of Carson, to below Clear Creek. The present supply is derived from two sources: first, the great basin of Lake Tahoe; and, second, the summit of the eastern range of the Sierras, above Huffaker's. From both sources the supply is brought down the mountains in flumes. The first flume of the section was constructed in 1869, and ran from the top of the Sierras, back of the city of Carson, easterly twelve miles, to the valley below. It was built up part way, and then extended back, as needed. The forests seemed to flee before it, so rapid was their destruction; nor were they safe till three miles over the summits of the mountains. This flume brought down 250,000 cords of wood, and untold amounts of timber, but its work is done. The Bonanza Flume, which supplies the Consolidated Virginia, California. C. & C. Shaft, Savage, Hale & Norcross, Gould & Curry, Best & Belcher, and Utah, with timber and lumber, and nine mills and the hoisting works of the above-mentioned mines with wood,

debouches its supplies into the valley at Huffaker's. This was put in operation last Summer, but before closed by the snows of Winter, furnished 10,000,000 feet of square timber for those mines, besides wood in abundance. Its capacity was never tested, but it has brought down one thousand cords in sixteen hours. The company has thirteen thousand acres of the finest timber lands of the Sierras, and have bought up all the water privileges which can be made available. The principal supply is derived from Hunter's Creek, and feeders come in a distance of five miles, and enter the flume through three branches, meeting it at proper intervals. The curves are so set and adjusted that sticks forty feet long will run them readily. It is fifteen miles in length, and in some places quite steep. The company have two mills, and have constructed two hundred miles of road through the mountains. They employed five hundred and seventy men last season, of whom one hundred and thirty were choppers, who received \$2 to \$2.25 per cord for their work. The trees are mostly felled and cut by saws, and powder supercedes the wedge in splitting, it taking but \$9 worth of powder and \$4.40 in fuse to split up one hundred cords. Much of this wood is sent down to the flume in a dry chute one and a half miles long.

But by far the mightiest lumber project yet started, is that of the Carson and Tahoe Lumber and Fluming Company, which has made accessible the whole of the great basin around Lake Tahoe, with its hundreds of thousands of acres of the best timber lands. This company, with an eye to the whole situation, and the wants of the future, bought, in 1872, a flume which had been built eleven miles along Clear Creek, and was bringing down the wood and lumber of the eastern slope of the Sierras, south of Carson, and stretching out toward the Lake Tahoe divide. This was the initial step in the great design, and gave its purchasers command of the head of Clear Creek, 1,200 feet above the valley, and extending within three miles, by direct line, of the lake. This flume was extended back as the supply of timber and wood along its course was exhausted, till with its two tributary branches it compassed thirty-five miles. The south one of these branches is six miles long, and fed by Spooner's Branch; the north one ten miles long, and supplied by Marlette Lake. It has also two feeders, one four and one-half miles in length, the other one and one-half miles. Its capacity has never been tested. The highest run ever made in one month, was four and one-half millions of feet of timber, and 12,700 cords of wood. It is not too much to say that it will take down to the valley 500,000 feet of timber, and 700 cords of wood a day.

In connection with this flume, and maintaining a part of the same industry, is the narrow-gauge railroad of the company, which runs from Glenbrook, on Lake Tahoe, to the Summit and the junction of the two branches of the flume. This summit is, however, 2,800 feet below the dividing ridge, being reached through a tunnel 480 feet long. This road makes an ascent of 915 feet in four three-eighths miles. The track is in the shape of an inverted Z, and leads from the lake through Pray's Ravine. It is $3\frac{1}{2}$ miles to the middle line of the Z, along which the train switches back till again near the lake, where the direct track is again taken through the tunnel to the flume. Here are the greatest facilities for handling the wood, timber, lumber, etc., and placing it in the water, which bears it rapidly down the mountain. Some of the large, square timbers gravitate so rapidly along the steeper places as to throw all the water from the flume, and when the bottom of the pitch is reached, have to wait till picked up and carried on by the coming flood. This road has a capacity of 300,000 feet per day, running two engines only.

This road is the link which connects the wood growth of the Lake Tahoe basin with the Comstock, for it makes junction with the lake itself, which is a mighty tributary, floating across its crystal breast 5,000,000 feet of timbers every season of seven months. Of course this can be increased almost infinitely as necessity requires and facilities are offered to take it to the flume at the summit.

The company have secured, also, 50,000 acres of the fine timber land around the lake. There are along the line of the track of the road 300,000 cords of wood, which are within easy reach, and as many more can be hauled to the road. Besides all this, the company have already crossed Lake Tahoe with their projects, and started a broad-gauge railroad out after the glorious growth of pine and spruce there found. This road will be extended back six miles, and the track will sweep round as the harvest is reaped, till all is gathered into the Comstock. Although but just started, it is bringing into the lake 250,000 feet of timber per day. This is rafted and propelled by steamboat across the lake to Glenbrook, where the Company have four mills, and whence it is taken to the flume by the narrow-gauge railroad or hauled to Carson by team. From this source is derived much of the fine lumber used in building in Virginia City, Gold Hill, Silver City, Dayton, Carson, and, in fact, all through the section. This project is as yet in its infancy, the first railroad engine having sounded its whistle July 4th, 1875.

Besides all this, there are yearly floated down the Carson River, to the market, immense quantities of wood. This comes in drives of from 15,000 cords upwards, and is taken out all along the river from Empire to Dayton. This wood, together with that sent down the flumes, is all piled, dried, and then marketed. These numerous piles of wood are a feature of interest to persons visiting the section, and often cover many acres. But the amount brought down by the Carson River is decreasing rapidly each year. In 1874, it amounted to 140,000 cords; in 1875, it decreased to 75,000; and the run will doubtless be still less this year. But

the decrease in this direction is more than made up by the increased capacity of the flumes, which will bring down not less than 180,000 cords this season. At least 200,000 cords of this wood finds its way to the Comstock over the Virginia and Truckee Railroad, which runs twenty-four trains each way per day between Carson and Virginia, each train taking wood and lumber up, and ore down to the mills on the Carson River, besides the usual and natural run of travel and freight of the country; thus making it one of the best paying roads in the world. To the amount transported by this road must be added 20,000 cords, which are hauled by trains from between Empire and Dayton, and consumed by mines and mills, and 20,000 cords more used by the engines of the road, to ascertain the full amount used there yearly, which is not less than 240,000 cords.

The hillsides in the region of the Comstock were in early days honeycombed by prospecting shafts and tunnels, many of which have for years remained unworked, and more will never be used again. Men of those days did not understand so well what to do as they do to-day. The pitch of the Comstock was, near the surface, to the west; and in those days western locations were considered of most importance and greatest value. Since the permanent pitch has been to the east, locations on permanent ledges in that direction have advanced considerably in public estimation. Experience has also taught the necessity of deep mining. This can be better carried on through a perpendicular shaft. The distance to be run is very much less, and the power directly applied. Hence, the gradual gravitation of the original locations down the mountain, and the establishment of new works in that direction.

There may not be more digging, but there is more and better prospecting done along the line of the Comstock to-day than ever before; because more systematically and scientifically done, and because better directed, and to better points. Men no longer grope like blind moles under ground. They have learned to read the record of the rocks better, and the result is that the Comstock never promised so well as to-day. Strikes have been made all along the line, and fresh dumps and new works are seen at all hands. Formerly, a shaft was a long time going down. Now, a location is made or bought, a company organized, a shaft started, and it reaches 1,000 feet in depth in a single year—because men know before they commence just what they want to do. The character of the machinery being put in the works of the older locations, too, is worthy of more than a passing notice; but for the description thereof, reference must be had to the respective mines. All these things indicate advancement, and that mining in Nevada is still in its infancy. These strikes which have been made must be developed, the ore stoped out and milled. This cannot be done till the milling facilities are increased. Every mill is busy, and running to its full capacity; and hence, many mines are compelled to leave their ore unstoped, and go on prospecting on the capital of the stockholders, when, if the mills were to be had, the ore would be reduced and the mines be self-sustaining.

There are many locations made, as will be seen by reference to the maps, which have never been incorporated. Of course, such can have no place in a work of this kind. There are, besides these home incorporations, which, while worthy of a place, have failed to furnish the necessary statistics, and are hence excluded. But enough have been put in to give an idea of the immense amount of capital actually employed in mining on the Comstock. If to this is added that of the other districts on the coast, the amount is past comprehension. There are about 400 incorporations on the Comstock, employing a nominal capital of about \$3,000,000,000. This would be the actual value of the mines incorporated, with the stock at par.

VIRGINIA CITY AND GOLD HILL.

Few places have overcome more natural disadvantages while struggling into existence than have Virginia City and Gold Hill; and fewer still hold so flourishing a condition amid so much barrenness and desolation. While the two places have very much in common, having sprung into existence the same year, and being inhabited by the same class of men, following the same pursuits and living in the same general manner, they present an entirely different outward appearance. Virginia is really "a city built on a hill that cannot be hid," while Gold Hill is built in a gully, and cannot be seen till looked down upon or run into. Still, the two places have been literally built together—the only line of separation being an arbitrary one, cutting diagonally across and turning aside for neither habitation nor hill. Virginia City occupies the eastern slope of Mount Davidson, while Gold Hill occupies both slopes and the head of the ravine leading south and east therefrom, and only wanders from its natural confines to meet its wayward sister on the divide. Both are exotics, and sustained in their exalted position, and amid the barrenness of desolation, by the Comstock.

The scenery around Virginia City and Gold Hill is grand beyond description. The very air which surrounds those storm-swept mountain heights glows with a crystal clearness which almost annihilates distance, and brings out every wrinkle on the unbosked brows of the surrounding mountains with a distinctness which is as charming as it is wonderful. The sun does not shine—it glares, except when veiled in clouds. The outlook from Virginia City is to the east, and is one seldom surpassed, even in the wondrous west. The sweep of vision to the north is circumscribed by the range which makes round to the east from Cedar Hill, and forms

almost a frame for the picture presented. In the immediate foreground, the "Sugar Loaf" draws the attention from piles of kindred peaks pitched promiscuously about. To the south, the range of Como lifts itself, bowed, bent, broken, as by the burden of years, and overlooking the Carson and intervening masses of scoriated rocks, all cut and chopped by crooked cañons and irregularly running ravines. As the more elevated portions of the city are reached, the view out over the desert hills and alkali plains, although devoid of the varied features which usually attract, and destitute of verdure save the gray of the sage, is very beautiful. In the Summer time, a single running line of green relieves the dullness of the picture; it marks the course of the Carson on its way to its death in the dusty desert, where it sinks. A spot of light-brown appears conspicuously in the middle background; it seems a little thing, a cloud of dust, or a field of grain ripening for the harvest. It is the twenty-six-mile desert, and, by the road, seventy miles away. Behind the line of the bluffy range to the right, and seemingly just beyond, is seen what appears to be a straggling bluff, feathering toward a hollow; that hollow is the Valley of Death, the old forty-mile desert, where so many of the weary pilgrims to the western shrine of gold wrecked their prairie schooners and marked their way with bleaching bones and abandoned vehicles. But, beyond all, the dim and distant Humboldts mix with heaven's blue arch and fade away to sky, and form the background of the picture. The eye rests easily on their snow-capped summits, yet they stand from 140 to 180 miles away. Passing south toward the divide, and another picture is presented, grander than the former, though not so distant; there is no desert, and no dipping toward water-courses, to be seen here. It is mountains everywhere; bold, bald, beetling brows, with the snows of years upon them; wrinkled fronts, down which the tears of ages have wept themselves away.

Virginia City is more than 6,000 feet above the level of the sea, and behind it rises Mt. Davidson, more than 2,000 feet higher still. This mountain, with its attendant range, including Middle, Ophir and Cedar Hills to the north, completely shuts out the view westward, towards the Sierras. Climb these heights, and the snowy range runs along like a living panorama, showing how nature lifts "old Winter clear from earth all Spring and Summer along." When Kit Carson and his little party of whites, attended by a few Crow Indians, passed this way *en route* to California in 1833; and again, thirteen years later, when Col. J. C. Fremont, with this same Kit Carson for a guide, made his famous tour of exploration, all this barrenness around Virginia was clothed in verdure. Even as late as 1860, forests of pine covered the rugged heights and darkened the deep ravines. All this verdure and beauty has been sacrificed to the Comstock, and even the roots and stumps have all been taken from the ground for miles around, by cunning Celestials, loaded on donkeys and toted to town for firewood. Trains of these Chinese donkeys passing through the streets, with their saddle-racks filled with wood, attended by their lute-eyed leaders, form one of the peculiar features of Virginia life.

The Mormons were the earliest settlers in what was then Western Utah, but now the State of Nevada. Some of the early settlements in the vicinity of the Comstock were begun as early as 1847-8. Among the earliest of these were those at Franktown, in Washoe Valley, where a Mormon church still exists; in Eagle Valley, now Carson; and at Mormon station, now Genoa. There were no houses constructed in either Virginia City or Gold Hill, till 1859. The placer diggings, which up to that time were carried on in Six and Seven Mile-cañons, in Nigger Ravine and Gold Cañon, although respectable ventures, would not do to tie to permanently. Improvements, however, come working up from the valley of the Carson by way of Johnstown, the Mormon settlement at the mouth of the cañon, and Silver City. After the discovery of the diggings at Gold Cañon, in 1859, and the location of the Yellow Jacket, as mentioned elsewhere, the influx of miners was so great that by the first of May of that year there was neither work nor accommodations for them. Many passed over the Divide and located claims along where Virginia City now stands. About this time the chances became so good in Gold Hill, and over the Divide, that it was determined to put up a log house and establish a permanent mining camp. The campers and locaters all along the line turned in and helped to construct this, the first house in Gold Hill. After it was finished, Jessup, who had made one of the first locations on the Comstock, and Sides played cards for the drinks. A dispute arose, when Sides stabbed Jessup twice with a bowie-knife, killing him on the spot. The murderer was taken to Eagle Valley (Carson) for trial, but was never convicted; and this, the first murder, was allowed to go unpunished. Thus it was at the building for the first habitation of civilized man, was inaugurated a reign of violence which has not even yet been fully deposed. It is not all talk that they had to kill men to start a grave-yard on the Comstock, for a large number fell by violence before death by disease entered that modern Eden. Even to this day there are those there whose eyes sparkle with something of the "light of other days" at the mention of "a man for breakfast," and "a stiff to plant."

The first substantial dwelling ever erected in Virginia City was built by John L. Newman, who died in the Fall of 1861. This was situated near the corner of A Street and Sutton Avenue, and constructed some time in the summer of 1859. This structure was not erected, however, till after the second house had been built in Gold Hill. The early pioneers took easily to first principles, and became dwellers in tents and caves. Their habits were indeed primitive. The greater portion were glad to use the hay brought up to feed the mules which run the arastras, for a bed. These persons nevertheless used to boast of the wealth of their Morpheus-wooding contrivance, and tell of the head board of their bedstead, 2,000 feet high, their cots bordered

with silver and gold, their starry-decked coverings, etc. Whites, blacks, and between, all slept there together, in perfect security, during the night; but when day dawned and the sleepers arose, they found it necessary to post guards to watch their blankets.

In the fall of 1859, two arastras were running, one on Ophir rock, the other for Central Mining Company No. 1, located next south. Pearlman had, during the season, put up a house near Newman's, and the Central Mining Company had constructed an office between the two. These were the only buildings in Virginia City up to 1860, and were built of stone. Newman and Pearlman had small stocks of groceries, general merchandise, etc., including liquors, not sold, however, by the drink. Penrod, Comstock & Co. had a tent on the north side of Sutton Avenue, near A Street; Wells, Fargo & Co. one near them, run by Dave Ward, their first agent. A Street was then the business street, and at its juncture with Sutton Avenue was the point where the inhabitants, between two hundred and three hundred in number, met when the day's prospecting was over, to tell of their strikes, etc. Many of these were compelled to make beds in the sagebrush; but timber was plenty there then, and their couches were not so desolate and dreary as they would be laid there now. As the Winter came on, many made excavations in the mountain's side, and lived in what were called "holes in the wall." These were occupied very comfortably till the melting snows of Spring made them rather inconveniently moist. The Winter of 1859-60 was a very severe one. Snow fell about the middle of November to the depth of two feet, and about Christmas a fall of five feet followed, but the men made their holes larger and dug further into the mountain, and passed the season quite comfortably. One "hole in the wall," on B Street, south of Sutton Avenue, contained two billiard tables, and furnished accommodation for twelve men.

In these days, Gold Hill and Virginia kept very even paces toward civilization, while Silver City was far ahead of either. Flowery, over in Six-mile Cañon, began soon after to draw, and, in 1861, had over five hundred inhabitants. In 1860, the year after the first houses were put up in Virginia and Gold Hill, Silver City had four hotels, ten stores, two drug stores, two meat markets, three blacksmith shops, a lumber yard, and a number of good-looking cottages. Prices ruled in those days very much higher than now. Flour brought from \$30 to \$40 per 100 lbs.; sugar, 62½ cents; candles, 75 cents; shovels, \$5; picks, \$6; powder, \$1 per pound; eggs, \$3 per dozen, etc.

During the Summer of 1860, and with the advent of steam and the milling of the silver ores of the Comstock, improvements along its line jumped into being. Still, men built charily, for the old miners had seen too many thriving mining camps deserted in a day, to perform any labor not likely to tell. Thousands that season visited the locality, as they had done the Summer before, and went away, putting no faith in the Comstock. Still, the progress made was wonderful. So rapid, indeed, was the advent of the masses, that in two years from the time the first house was constructed in Virginia City, the place, with Flowery, had a population of 3,284; Gold Hill, 1,297; and Silver City, 1,022. The first house erected in Virginia City was more than a mile and a half from that built in Gold Hill, and the two were connected by an Indian trail only. To-day, the places are so built together that no one can tell from appearances where one leaves off and the other begins. Gold Hill was formerly connected with Silver City by over two miles of ravine. To-day, they are connected by a continued line of mines, mills, hotels, boarding and lodging-houses and dwellings, so that from Cedar Hill on the north, over the divide and down to the valley on the south, a distance of five miles, there runs a continued line of roofs, which give shelter to about 40,000 people, of which something more than half are in Virginia City.

It would be foreign to the purpose of this brief sketch of the settlement of Virginia and Gold Hill, to follow minutely their progress further; but there are certain interests which attach themselves to civilization which are of paramount importance with food and shelter, and among these is water. The early settlers found a few springs, the waters from which trickled out in sufficient abundance for the necessities of the few; but, with the advent of the heavy milling and mining interests of '60, and the people which attended and followed them, came demands far in excess of the supply. The want, in fact, from the first, of pure, fresh water, was severely felt. The mills generally sunk shafts and drifted for water, but a supply could not always and in all places be obtained by such a course. As the necessities in this direction became more and more pressing, water courses were tapped by the tunnels run into the mountain for the development of the mines, and the supply was increased materially from that source. A company was finally formed for the purpose of furnishing water, and their supply was chiefly obtained from the tunnels of the Santa Rita, Cole and New Granada mines, and led in pipes throughout Virginia City and Gold Hill. From this small beginning has grown the present Virginia and Gold Hill Water Company, the triumphs of which are of sufficient importance to demand a fuller notice.

Although on a steep mountain side, and 6,000 feet high, in a land of barrenness, and looking down upon shifting sands and burning alkali, Virginia City has the purest and best mountain water, and an abundance of it. This is taken from Dall's Creek, in the Sierras, at a point 2,100 feet above the track of the Virginia and Truckee Railroad in the valley below, whence it flows easterly along the crest of the mountain till received into an iron pipe. This pipe makes the descent into the valley, ascends the opposite side to the height of 1,540 feet above the track of the railroad, where it is taken up by another flume and brought on to the city. The inlet is

elevated above the outlet 460 feet, and the total length of this inverted siphon is but a trifle less than seven miles. The present supply is 2,000,000 gallons per day. The pressure and the friction caused by forcing it through seven miles of pipe, are equivalent to the force necessary to sustain a column of water 1,720 feet high. This is almost double that of which we have any account of the records of the day. The leading of such a stream of water across so deep a valley is an achievement which finds no parallel in the history of hydraulic engineering. The pipe has an orifice of twelve inches. At the point where the pressure is greatest, it is 5-16th of an inch in thickness, and riveted with 5-8ths inch rivets, in double rows. The company have, however, recently conducted across a second pipe, which is lap-welded, and which increases the capacity of their works to 10,800,000 gallons per day. This is not needed, however, at present. To increase their facilities for supplying all demands which may arise, the company are tapping Marlette Lake and tunneling 4-5ths of a mile through the intervening mountain. The outlet of this lake is 1,500 feet above Virginia, and within one mile of Lake Tahoe. The water will be conducted five miles in a flume, led under the mountain, again taken up by a flume, and led three miles, to the present head. And thus it is that Virginia City, in a land of drouth, has a full supply of better water than Lake Michigan furnishes Chicago, and the company, with this eternal supply at their command, possess a property worth more than even the big bonanza itself. Gold Hill and Silver City are also supplied by the same company, as are all the mills situated along the line of the Comstock.

Situated as are Virginia City and Gold Hill, the one on a steep mountain side, the other in the head of a ravine whose banks are not less precipitous, these places must present many peculiarities in appearance. In many places they are not laid out in streets, but built in terraces. The laid-out streets which run north and south are very close together, and in the older portions of both places the cross streets are very steep and very narrow. As a necessary consequence, the buildings, which frequently extend from street to street, are very high on one end and low on the other. Where the buildings reach from street to street, as above, by entering from the lower side and ascending one or two flights of stairs, the stranger is not a little surprised to emerge from the ground-floor entrance of the street above. This illustrates, probably better than an elaborate description could, on what steep inclines these places are constructed. At first the styles of architecture were exceedingly simple, and little order was observed in the selection of sites for buildings. The consequence is that in many of the suburbs of these places there is no regularity whatever to be found, and the buildings appear, like the sage brush, just where it happens to be most convenient. Yet there are some fine yards and splendid residences to be found in both places, and public buildings which in their styles of architecture, construction and finish, would do credit to any city.

The nerve, the vim, the pluck, the energy of the citizens of Virginia, can never be faithfully portrayed in words. It must be seen and felt to be appreciated. The average stranger, coming in contact for the first time with her business men, is very apt to stand a little straighter, and walk a little prouder therefor. He has felt the force that is in them, and it has diffused itself all through him till he is ready to dare and able to do, what before was impossible for him to accomplish. This executive ability, which is characteristic of the Kings of the Comstock, has manifested itself in the great undertakings conceived and accomplished by them, some of which are mentioned in the article on the Comstock Lode, to be found elsewhere.

The great fire of October 26, '75, swept away nearly half of the business heart of the city, and licked up the little homes of a thousand dwellers on the mountain side. 'Tis true the world rushed to the rescue, and contributions came from everywhere; but these, valuable aids though they were, could not afford shelter from the fierce Winter then almost at hand. The energy and determination of the citizens, however, aided as they were by this outside help, enabled them to overcome the difficulty, and it is the wonder of the visitor of to-day, that so much has been accomplished and so little of the ruin of the disaster remains.

Virginia and Gold Hill are exceedingly cosmopolitan; perhaps not more so than San Francisco, but it is more apparent. All shades of complexions, all national peculiarities of customs and dress are observable, and all tongues heard. It would be very singular, indeed, if, with all this gathering of peoples and peculiarities, strange expressions were not heard. Even those of our own nationality soon learn peculiar modes of expression, if they do not get peculiar thoughts. For instance, in that section where mountains lift their barren peaks into the region of perpetual snow, what more natural than to say of a bald-headed man that "he has his head above timber line." A hungry man out of coin is characterized as one with whom the "grass is short;" and of one who is continually in hard luck it is said that he is "running in porphyry." Citizens passing have only time to greet each other with "How?" If any further civilities are exchanged the next address is "Well!" What do you know!" These salutations, it will be perceived, are eminently practical, and such as could belong to a community where mysteries as well as treasures are unearthed every day. But it is not so much expressions of this kind which attract attention as the odd vernaculars which are heard. What would the fashionable world make of the following? "Comes 'long you up cab'n 'mor'r, 'bout 4 o'clock spose. Shall make plenty passty. See?" It was an actual invitation to dinner, extended by a Cornish miner to his fellow, in the writer's hearing. It may have lacked the style and finish of the conventional "compliments" extended by the fashionable Mrs. Blank to her friends, but there was a heartiness about it which seldom attaches to a ticket to soup, and it was understood.

The man who receives and accepts such an invitation may be required to sit upon a stool and dine from bare boards, and with but few dishes; the cabin may be eight by ten only, and have a bed in it at that; there may be no hand of woman to tidy up and tastefully arrange the few articles in the single room, and prepare the food, but there will be bread and meat enough, and well cooked; there will be coffee and vegetables; and when it comes to the "passty," rest assured there'll be plenty and keen relish with it, unless the extent of your capacity has been fully reached before its time.

The man who judges from the exterior only, has no business in Virginia nor Gold Hill. He will be picked up a little too often for pleasure, if not too heavily for comfort. A man can there find any game he wants, whether played with a pack of cards or a pistol; whether it comes in the shape of a big knife, or a straight from the shoulder, or in a courtesy and kindness, and from the heart. If a man wants a friendly game he will find it, and strong or mild, as best suits him. But let a new comer into that modern Zion bear the honors which are heaped upon him meekly, for interference and arrogance have given the people many "a man for breakfast," and draped a thousand eyes in mourning which were not accustomed to shed tears. It will sometimes, too, happen that men are somewhat roughly put upon and sorely tried. At such times, the man who suffers himself to be imposed upon may as well shake the alkali dust from his feet, for there's no room for him on the mountain. But let him say he's a stranger, and ask for some one to see fair play, and he will be backed by the biggest part of those present, and in most instances, the occasion will be immediately bridged for him to pass over into favor.

So far as society is concerned, Virginia City and Gold Hill openly wear the worst side out. It is not quite true, as has been said, that there are more mistresses there than wives, and more public women than either, but there are enough of both. In this respect, however, these places do not differ materially from other prosperous mining towns on the coast. But churches, though not always well attended, are flourishing, and schools are prosperous, plentiful, and excellent. There are no brighter children in the world than are found in Storey County, and they are growing up sturdy and strong. The attenuated air of the mountains, and the exercise of climbing, which is a necessarily attendant condition upon pedestrianism in any direction, gives a breadth and depth to the lungs, and a rigidity to the muscles, seldom seen on the sea level. Then there is something in the mineral emanations from the soil which stimulates the brain, excites passion, and pushes a child on toward maturity at a fearful rate. There is more individuality in some Virginia boys of a dozen years, more character and self-reliance, and, I had almost said, more of the experiences of life, than are found in the three-score-and-ten residents of some of the staid towns of the States. These youths are not hot-house plants of tender growth, but are shrewd, sharp, calculating and old in everything but years.

What, then, is to be said of the men? One word expresses it all—"Everything." One can scarcely say too much in any direction, except toward meanness, and that is little known among them. They have their failings, many of them their vices, but mean men are very scarce. It has been a favorite theme among writers, that there is a connection between national scenery and national character, and it certainly does seem as if the man who dwelt continually among the beautiful, the sublime in nature, partakes so largely of his surroundings as to become noble and grand in his life. It is certainly true with many along the base of Mount Davidson—with most, in fact; for the masses of men live heroic lives, whether in a cabin or a palace; for those who take their lives in their hands and go down into the earth to toil amid the dangers of the depths, to find and bring up the shining ores, are no less heroes than those who face danger on the deep, or death amid the din and strife of battle. The accidents at the mines, great and small, average about one a day the year around; and of these about one-fifth are fatal. The thought of being precipitated a couple of thousand feet down a shaft is no less appalling because the darkness does not allow the eye to penetrate the depth. An appetite for breakfast before going to work is not stimulated at all by the consideration that sacks and blankets are in readiness on all the levels to receive your gathered remains in case an accident hurls the life and crushes the semblance of humanity out of your body. There is no tendency to cheerfulness in the thought that, while running a drift or crosscut, or sinking an incline, shaft, or winze, a flow of water may be encountered, and your lifeless remains be found in the sump weeks afterward, when the pump has reduced the water. And yet, with all these, and a thousand other dangers lying in wait for his life, the miner plies his pick. He has done this for years, till the ground under Virginia and Gold Hill is honeycombed with his workings and wanderings to the depth of from fifteen hundred to two thousand feet; and thousands spend one-third of their lives there, the dangers around dimly disclosed by a tallow dip. Were it not for the danger which surrounds him, some of the finest traits in his character might remain forever unknown; for, when one of his comrades, less fortunate than himself, has his life snuffed out—even as he extinguishes the candle in his hand—and leaves those behind in need of care and sustenance, the next pay day finds him a ready donor with the others of a sufficient amount to make the loved ones comfortable, and sometimes independent. Thus it is that the great dangers of his path make him considerate, for he may be the next to go, and his the next to need assistance; and "do as you would be done by" is exemplified, not coldly and calculatingly, but cheerfully and from the heart.

The man who expects to find ignorance a characteristic of the Washoe miner, does not

know the material which goes to compose the lot. Ignorance there may be among some classes, but it is no uncommon occurrence to find a man of liberal education working on the lower levels. Many such have risen therefrom to wealth, and taken their legitimate stations in life. Many of the prominent men are of this class, and they are all the worthier for the experiences gained. They are representative men, and never cease to practice the lesson learned on the levels. Many are the loads of wood and provisions which find their way to the homes of the destitute through their instrumentality. Nor do they give to be seen of men, for the recipients are left to thank God rather than man for the timely relief, since they seldom find out the donor's name. Yet these men are not all fit for saints, nor would they do well for ready-made angels; but when the record of their lives is made up, the "inasmuch as ye did it unto one of the least of these" will counterbalance many transgressions.

A miner was heard arguing, not long since, against the commonly received notion that heaven is an eternal Sunday, from the fact that Virginia City is "way up," and yet no Sunday came there at all, while further down they had one once a week. His logic may have been at fault, but his facts were not. There is no Sunday on the Comstock. The mills and the mines thunder and steam on continually. A delay of one day in seven would be a disaster beyond calculation. In fact, the balance of the week could not undo the damage which would follow stopping a mining pump for a single day. The same is, in a measure, true of the mills; and so every day, at the hours for changing shifts, may be seen the mining brigade, armed with their dinner-buckets, marching to the different hoisting works. But, notwithstanding these men cannot "remember the Sabbath day to keep it holy," the citizens remember that a miner has never been known, while in the line of his companions, to insult an unprotected female; and many a belated watcher has felt safe from harm as she has followed him and his lantern through the streets.

The stranger in Virginia and Gold Hill should make it a point to visit some of the principal mines, where these shifts are changing. Such physical men as come dripping with steam and perspiration, half naked, from the depths! Such complexions, too! Such perfect health as well as perfect development! Forms that Praxiteles might worship! No wonder their hearts beat healthfully, for none are more grandly made than they! An hour afterward, those same men, after a bath, a change of apparel, and a meal, may be seen, but scarcely recognized, among the gentlemanly promenaders of the streets, so changed is their appearance. These men, clad only in a pair of drawers, perform their eight hours of labor in the depths, where the temperature is from 100 to 120 degrees Fahrenheit, for which they receive four dollars per day.

A history of Virginia and Gold Hill that omits mention of the Virginia and Truckee Railroad, which has done so much to open up the mining interests, and develop the resources of the country, would be most faultily incomplete. This road has made the things which exist in the way of developments and progress on the Comstock possible. It has conducted in every way to the prosperity of the country. The facilities which it affords for transporting ore to the mills, as well as supplying the mines and mills with wood and lumber, have doubled the bullion yield of the Comstock, if not of Nevada. This great auxiliary to the mining interests of the Comstock, and growth of Virginia and Gold Hill, was first completed from Virginia to Carson, in the Winter of 1869-70. Subsequently the connection with the Central Pacific at Reno was effected. The immense business of the road may be surmised from what is said elsewhere of the amount of timber, lumber and wood necessary to supply the Comstock, and from the fact that the road pays the C. P. R. R., on an average, \$1,000 per day for freights on goods received therefrom. The freights collected at the Virginia office run from \$60,000 to \$90,000 per month, while that at Gold Hill is but little less.

The business connection between Virginia and San Francisco is very close, all sales of mining stocks being made therein; and the travel between the places is very great. The distance is 345½ miles, and is now made in sixteen hours, although the Sierras have to be crossed, and the ascent of Mt. Davidson made. As this trip is made in the night both ways, the round journey can be accomplished and a day's business transacted, in either place in two nights and one day.

Since writing the foregoing, the following account of the way Virginia City received its name, has been handed in by Almarin B. Paul, who built the first mill ever constructed in Nevada, and who is the inventor of the Paul process for dry-working ores. Mr. Paul writes:

Among the many characters with whom I became acquainted in the early days of Washoe was "Old Virginny," as he was called. What his real name was I never took the trouble to inquire. When you spoke of "Old Virginny," every one knew whom you meant, and that was enough. "Old Virginny" was a great admirer of enterprise, and when building my first mill, he frequently came down from Virginia City, and would hang around, dropping now and then a complimentary remark, and, as a contrast of what the past had been and the future was like to be, would tell some story of his early trials. Had I noted them all down then, they would now be very interesting. Perhaps you do not know how Virginia City received its name. I have the following from "Old Virginny" himself:

"Well," said he, "McLaughlin, Comstock, one other, and myself had been working up near Spanish Ravine, and got out of everything to eat. So one day we concluded to take a trip to Chinatown (near where Silver City now stands), down Gold Cañon, where there was a trad-

ing post. We were very hungry when we started, and knowing we must have a meal before getting back, took our coffee-pot and frying pan with us. Getting along down below, where now Gold Hill is, Pat espied a lonely crow, and we soon made up our minds to capture him, which we did. We then built a fire, and, after plucking his feathers, crammed him into the coffee-pot, and I think the meal we made on that old black crow the best one I ever ate. We all relished it, and it made the balance of our journey down the cañon quite easy. At the trading post we laid in our flour, coffee, bacon and beans, and started back to Virginia. It was not Virginia then, but Silver City. Comstock called it Silver City, but others said it should be called 'Virginia City,' after me. Well, we laid in, among other things, some whiskey. We all had a liking for whiskey, and going back, lightened up all the bottles except one, and that I held on to. Going along, we got into a dispute about the name of the contemplated city—all of us a little sprung. The dispute was waxing warm, when an unlucky boulder happened to be in my way, and over it I stumbled, and away went the bottle, whiskey and I. That settled the question! There was something ominous about it, and the place was baptized 'Virginia City.'"

THE PROSPECTIVE SUPPLY OF SILVER AND GOLD FROM THE COMSTOCK.

There is no industry on the Pacific Coast more important to consider than that of mining for the precious metals. The production of these metals is especially important, in view of the demand for them for monetary purposes—the very highest service they are capable of rendering to man. A nation possessing in great measure these very desirable resources must be considered doubly fortified in stability and power, and, under a wise policy pursued by the Government, may be considered exempt from those exigencies and trying vicissitudes which sometimes put the credit of the nations in peril. Holding that, to be prosperous and strong financially, a nation should encourage every industry which calls into activity and properly utilizes its laboring arms, it would seem to be a wise policy to pursue to give to the mining branch of its industry every facility, protection, and encouragement possible. Evidently inspired by this purpose, Congress has made a law by which a title to mines may be obtained, and thereby remove the hazard of holding the same without a title. This law could be much improved if it were so amended that the hardy and indefatigable mining prospector may obtain title to the property upon which he spends his energies with less tax upon his pocket.

The assistance which the Government extended to the Sutro Tunnel enterprise will certainly prove in the end a wise action; and it may be confidently predicted that such similar enterprises will be, in various ways, encouraged by our Government in future.

The brief space allowed for this article precludes the possibility of giving an extended review of the mining interests of this coast; and therefore, as the great Comstock belt is and has been the center of attraction for many years, we will briefly refer to its present promises. The line of mineral claimed by the "Julia," the "Ward," and extensions southerly, are coming into favor, because of the development of ore in the lower drifts of the first named; and it is believed that a body of ore exists in that region of the Comstock belt, which will command attention of operators at no distant date. Near to, but lying west from, the "Julia" development, the "Bullion," "Alpha," "Imperial," and "Exchequer," have from time to time come in contact with streaks of ore in their several drifts of a promising character, and afforded sufficient encouragement to the holders of the stock in each to induce the payment of assessments, and push with some diligence their prospecting drifts and winzes. At the present writing, the stock of each of these companies named is advancing in value with a rapidity which indicates the finding at last of an ore body of more than usual significance.

Further south, the claims of the "Yellow Jacket," "Kentuck," "Crown Point," "Belcher," "Seg. Belcher," and "Overman," begin to attract very positive attention, and, if rumor for once be true, not without the development of unusual merit.

There are some other mines on the Comstock belt, at the south end, in high favor with dealers in stocks, and, very likely, based upon meritorious developments, but the impression of the writer is, that those at the south end, here named, give the most decided promise, and hold out, at the present time, the most encouraging hopes.

Turning to the series of mining properties, designated as the "North End," we are led to make some statements, which may partake of the character of *prediction*. Touching the future of this end of the Comstock, while we may appear speculative, it is to the careful observer, very full of promise. The great depth at which ore bodies have been found (as in the case of the present Bonanzas, as they are called), lead to a belief that many bodies of ore exist in grounds that give no surface indications, or croppings whatever—and to say that any claim along the Comstock belt is of little worth, presupposes the most thorough and extensive explorations without finding any ore body. There are indications developed in the lower east drift of the Savage, which, upon examination, lead us to conclude that the great bonanza of the Comstock lode is yet to be found, and that its location may now shortly be determined. It will be remembered that about three years ago, there was struck in the Savage 2,200-foot shaft a stream of very hot water. The flow of this water increased rapidly, until it was ascer-

tained that the machinery of the Savage, Hale & Norcross and even Gould & Curry combined, could not keep the water below the 1,700-foot level. Other machinery, of power never before seen upon the Comstock belt was erected upon these three mines, one after the other, and every appliance which money and engineering-skill could provide, were set in motion to drain this new found-water supply. For nearly three years the pumps have been run with the mightiest power that has ever been utilized in mining, and an enormous flood has been raised from 1,500 to 2,000 feet, and delivered upon the surface, and yet the fissure which supplies this vast volume of water could not be reached. Finally, it was determined to make a connection with the Sutro Tunnel, and discharge the water there, through at a depth of 1,500 or 1,600 feet below the surface. At this writing, the work is being done to this end, and when the machinery shall be so changed as to utilize all its power in raising water only to the tunnel level, this tremendous water supply will be turned into that great tunnel, and find its discharge upon the deserts of the lower Carson.

Just at this time, when the public are impatient for results, it is not strange that they admit more freely the great advantage of this tunnel, and feel to award to Mr. Sutro the highest praise for conceiving and carrying out to a successful issue the most important mining enterprise ever undertaken in America. The possibilities of the future in the locality drained by the Sutro Tunnel can scarcely be estimated. Especially if we consider the full meaning of this water development referred to. Permit us to speculate a little upon this mystery. When the Con. Virginia and California mines were discovered, water was found in them, which, by the aid of the Ophir and Gould and Curry works, effected a discharge in a few months, and the introduction of cooler air, so that drifts could be run, and shortly after ore could be raised. The water which was found in these supposed-to-be "greatest mines of the world," was repeatedly analyzed, and the character and components carefully noted. We have seen what the Con. Virginia and California mines amounted to, and at this day can approximate very nearly to the yield of gold and silver. Now, it may not be generally known, but it has been stated to the writer of this article repeatedly, that the water which for three years has been pumped from the Savage lower east drift, has been analyzed at intervals during that period and found to be the same as that analyzed from the bonanza mines.

Those who study the laws of nature, and find that "like conditions produce like results," are prepared to expect a development of mines marvelous in their extent as well as richness, when this great fissure shall be explored.

They reason as follows: Mines (they hold) are found in fissures. Water in the earth finds and fills these fissures, and the ores so coveted by man, are there formed. That water of a high temperature indicates long confinement in mineral areas, and naturally afford evidence of the minerals with which they were held in contact, and consequently when drained from these minerals, will carry some part of them in solution. This lies in proof, as revealed by the waters analyzed, coming from the bonanza mines. This is the ground upon which some anticipate the finding of ores of a like character in the fissure where this immense volume of water has lain, until tapped by the Savage drill. Now, the inference to be drawn from these analyses is, that there must be a very much larger fissure whence this water comes, than that of the Bonanza mines. The fissure may be very wide and not very long, but nature is chargeable with such eccentricities but rarely. It is safer, therefore, to conclude that this fissure of water will be found to extend to a great distance, northerly or southerly; how far southerly we know not; how far northerly we know not. If the water could be measured which has been raised therefrom, added to that which remains to be raised, we would behold a sea of it.

Were the Imperial or Jacket companies to press their drifts from their lowest levels eastward, and this water belt found, the conclusion would be that it extended south. But the writer has not the impression that this is the case. He does not believe that this particular water channel extends to the Hale & Norcross line. That it runs northerly from near the point where it was tapped is the more natural belief. That it has never been probed except by the Savage, and is a new line of mineral, must be conclusive, from the fact that none other have had to encounter the expense of drainage. It has for a long time, for various reasons, been the belief of some, that a valuable line of mineral lay embedded on the line of locations, of the "Mint," "Red" and "White" Cross, "Plutus," "Shamro," "North Con. Virginia" and thence in the direction of the "Wells Fargo," "Troy Con.," etc. still further north. It is possible that this water flow comes from the line of locations made by the "Jo Scates" company, but the development at the lowest east drift of the Ophir does not sustain such a supposition. The "Sierra Nevada" and the "Union" may have pushed their lower drifts so far east as to strike the "ragged edge" of the coming great bonanza. The North Con. Virginia, now sinking upon the line named, will also be in a fair way to strike this great ore body, and strike an attitude of defence against the invading forces of the "Sierra Nevada" and "Union." Great interests, however, are found to unite and compromise, while lesser interest expend themselves in litigation. One word of the bonanza firm and we have done. It is well known that this firm have, for the last three years, held steadily to the purpose of acquiring control of the Virginia mines. The Savage, Hale & Norcross, Gould & Curry, Best & Belcher, Con. Virginia, California, Ophir, Mexican, Union, North Consolidated Virginia, Utah, Ward (north) and Independence, are supposed to have passed to the control of these shrewd and far-seeing men. It cannot be supposed that they would have bent their efforts during the last three

years to the end of acquiring these properties if, in some way, *they had not been convinced of the practicability of the theory here stated.* If it shall prove a true theory, the bonanza firm have barely commenced to count their millions.

San Francisco, August 15th, 1878.

PACIFICUS.

ORE-WORKING PROCESSES AND IMPROVED MINING MACHINERY.

The discovery of the Comstock silver mines has led to the most extensive study of metallurgy and mining machinery, and has evolved methods for the treatment of both gold and silver ores quite in keeping with the valuable mechanical inventions and scientific discoveries adaptable to use in other branches of industry. True, as it is, that we have been often startled with the announcement of some new secret process which for causes the discoverer could best explain, never found fruition in either favor or profit, yet substantial progress has been made, and to-day the American miners and ore-workers occupy the foremost rank in these departments among all who make these matters a study, in every part of the world.

The metallurgical process of smelting ores is not new—indeed, it is very old; but only within the last fifteen years have absolute improvements been made, which greatly reduced the cost and added facilities to the operation. The Patio process is as old as any process for working silver ores—slow, very slow, and not very expensive—but alas! impracticable in this age of speed, and had to retire before methods which utilized the Patio principle in appliances which would admit of the expeditious treatment of large quantities. In the one case we smelt hundreds of tons of ore per day; in the other we chloridize and amalgamate with quicksilver in like quantity. Improvements in furnaces for smelting, not particularly designed to increase the per cent. of yield, but to lessen the expense and increase the quantity treated, appears to be the general object. Chloridising furnaces, greatly improving the method of roasting ores, are being brought forward until we are at a loss to see how it is possible to further add improvement; and the discovery of chemical solvents and re-agents in use with the metallurgist keep even pace with invention. Quite recently a discovery has been made which will be so cheap and effective in the working of ores—especially those of a rebellious character—that the chlorination methods of treatment must pass out of use altogether. Not only this, but under this method the use of stamps will no longer be required. We asked for an explanation, and were told by the inventor that a \$750 rock-breaker, which would reduce 75 tons of ore per day to the size of hickory-nuts, was the first requirement. Pass this ore into a common and cheap furnace, subject it to a red heat for one hour, draw from furnace and deliver while hot into a chemical bath, which renders the hardest ore friable, and so soft that it crumbles under the pressure of the foot; then pass the ore into grinding-pans, where in one hour it is reduced to a fine pulp, and afterwards amalgamated in thirty minutes. The estimated cost per ton of such treatment, we are told, will not exceed \$5 per ton where wood can be had at \$6 per cord. This process is called the "Eureka," discovered by R. F. L. Hallock, who is treating ten tons per day in this manner, at a point about two miles above Alameda. He claims that the most refractory ores can be treated successfully; that is, to produce from 80 to 95 per cent. of their assay value. We draw attention to this lately-discovered process because of the representations of some very practical workers of ore who declare, from personal observation of its working, that the method and result is a marvel in metallurgy. If this new process will do what is represented, Mr. Hallock will have effected more for the success of our mining industry than all the men and processes that have preceded him. Great reduction in the cost of works, less expensive methods of working ores, adaptability to work all classes of ores—excepting perhaps those which carry a very large per cent. of galena—constitute improvements that must meet with general favor.

We may allude to another improvement in crushing and amalgamation, known as

PAUL'S DRY PROCESS,

By which system the ore is reduced and amalgamated dry, the ore having, before amalgamation takes place, all atmospheric dampness expelled, and also imparted to it a very low temperature of warmth. The system is a radical change in the amalgamation of ores, so radical, that like all new methods, it is making its way into use. As a cheap system of amalgamating the precious metals, it clearly possesses some advantages over all others, trials made on a scale of hundreds of tons, as well as in a small way, proving it to be highly effective. Gold so fine that it will not settle in water, in ten minutes after agitation is, by this plan, as readily amalgamated as the heavier particles. A large sum of money has been expended in perfecting this process, and the machine for operating it. To describe the process we will say the ore is first dried, then reduced coarsely by stamps or other crushing machinery. It then is passed into a cylinder, and there reduced to an impalpable powder by quartz attrition. The large pieces of quartz pulverizing the finer. From this cylinder, which is self-feeding and self-discharging, the ore is passed to the amalgamating barrel, where 15 per cent. in weight of mercury to ore is added, chemicals in the case of some ores being also added. The cylinder is then revalved till the precious

metals are all amalgamated, after which they are transferred to a settler-cylinder, where hot water is introduced, and the amalgum gathered at will into a safe. The whole operation, besides being simple and practical, is exceedingly efficient. In short, there are constant improvements being made throughout the whole line of the mechanical department of mining, as well as in metallurgical treatment, and we may justly congratulate not only the miners, but the whole country on the progress that has been made in this department of applied science whereby this great industry can hereafter be prosecuted with success not heretofore attained.

The past few years' scientific investigation has developed many improvements in the mode of handling mineral ores, with a view of more perfectly extracting the gold and silver therefrom. The direction more especially calling for improvements has been for the better reduction of the ores; and many very ingenious machines have been invented to accomplish this result, and, although partially successful, have not come up to the standard of the required want. The Davis Pulverizer comes the nearest to filling that required want, because it pulverizes the rock dry, and to any required fineness. The machine bids fair to supersede the old-fashioned stamps, on account of its simplicity of construction and lightness of parts, and ease of setting up—not requiring any other foundation than a few cross-sections of timbers laid on the ground. The best mill-men of the State, who have examined it, pronounce it a success, and, while they do so, think the inventor, Mr. John T. Davis, will continue to improve in the direction he is working, until the unwieldy and cumbersome stamps are laid aside as a thing of the past. The Pulverizer is a remarkable machine, in the fact that it does a larger amount of work with the same power developed than a stamp mill, and much better, with a much less cost of wear and tear, besides the first cost being less than one-half.

The inventor has spent much time in perfecting the machine and giving the reduction of ores much attention, with a view of developing some mechanical arrangement in the way of a mill that will turn the vast bodies of gold quartz on our Pacific Slope into mines of wealth. The problem, then, is to reduce the rock to an impalpable powder, set the gold free, and collect it without the loss of either the gold or the mercury—all of which can be done by pulverizing the ore dry and amalgamating it dry. In the latter process, the fine gold that floats away in the water is secured, and at a much less expense than the wet way. Large bodies of ore exist throughout this country, that contain gold in paying quantities, but, owing to its extreme fineness, cannot be collected by the use of water, but is quite easily amalgamated dry, when the ore is reduced to a sufficient fineness to set the gold free; and this is accomplished by the Davis Pulverizer.

THE COLLOQUY OF THE OLD TIMERS :

Wherein two veteran prospectors, meeting after a long separation, relate their adventures and inquire about their former companions. This quaint and original production, replete with so much that is peculiar to California and especially characteristic of the miner's life, is from the pen of Dr. Henry Degroot, himself a well known prospector and explorer, he having been a pioneer in almost every mining camp from Carriboo to Mexico. This, with other effusions of a like kind, was written by him merely as a pastime and with no idea that it would ever get into print; which it would not have done, only that these lines falling accidentally under the notice of John M. Foard, then editor of the *Golden City*, that gentleman appreciating its excellence, published it in that paper with the following introductory remarks: "This poem is the best of the kind we have ever seen in print. For rhymes that are queer and phrases that are peculiar, it beats Bret Harte's 'Heathen Chinees' all hollow. It entirely exhausts the nomenclature of the present as well as the early mining towns and camps of California, and for this reason it should be carefully placed among the archives of the Pioneer Association and be pasted in the scrap book of every Forty-niner. If any aspiring poet can write a better 'descriptive poem' than this, the *Golden City* would be glad to purchase it at any price."

That this is the most truly representative poem ever published on the subject treated of, admits of no question. Of the parties to the dialogue, one, as will be seen from his style of speech, is supposed to be from the South, while the other is presumably a northern or western man. Their manner of salutation on meeting is perfectly characteristic of this class of men, being abrupt, rough and boisterous, but sincere and hearty. The topics of conversation, the questions and answers, the whole phraseology are true to nature. It is miners' talk throughout. The names of the mining camps alluded to all have, or at least had, an actual existence, some few of them having latterly given place to others more in accordance with modern taste and notions of propriety.

"Hello!" "Hel-lo!" "Why, Jim!" "Why, Dan!"
 "Good Lord! I want to know!"
 "Well, well! old fell, give us your han'—
 But Jim, how does it go?"
 "Oh! sometimes gay and sometimes rough—
 And how's it go with you?"
 "Well, times jus now's a little tough
 Up here in Idaho."

"But where ye been, Jim, ever since
 We left the Stanislaw;
 And pulled up stakes down there at Dent's—
 Now eighteen years ago?"
 "Wal, since the time that we put out
 On that stampeo from Stoney,
 Been mos' the time knockin' about
 Down into Air-e-zony."

Only been back a month or so,
And thought I'd take a tramp
Through the old diggin's long with Jo,
Who stops at Nigger Camp.

Started from Alpha on our trip,
And passed up the Divide,
Through Tangle-Leg and Let-Her-Rip,
Red Dog and Whisky Slide.

Then after leaving that we went
Down by the Tail-Holt Mill,
'Crost Greenhorn Mountain to Snow Tent,
And up to Gouge-Eye Hill.

From Gouge-Eye down to Esperance,
Slap Jack and Oro Fin;
Through Deadwood over to Last Chance,
Root Hog and Lost Ravine.

From Petticoat to Shirt-Tail Flat,
And on by Murderer's Bar,
Crost Bloody Run and thro' Wild Cat,
To Poker and Lone Star.

From Angel's Camp down by Rawhide
We took a run one night,
Through Chinese Roost and Satan's Pride.
Acrost to Hell's Delight.

Then came along to Poverty,
Dead Broke and Bottle Ridge,
By Hangtown, Poor Man and Lone Tree,
Garrote and Smash-Up Bridge,

Through Nip and Tuck and Old Bear Trap,
Coon Hollow and Fair Play,
Along by Scorpion and Fir Gap,
Kanaka and El Rey.

We stopped one day at Never Sweat,
Another up at Ophir,
Then moved our boots on to You Bet,
And struck across by Gopher

To Sucker, near Grass Widow Bend,
Whar as 'twas getting late,
We brought our journey to an end
Down by the Devil's Gate."

"Well Jim, you must uv seen a heap;
I'd like to make the rounds
As you have done, and take a peep
Through the old stamping grounds."

"Y-a-s, but I tell you what it is,
The times they ain't no more
In California as they was
'Way back in Fifty-Four.

'Hits swarming with them Chinese rats,
Wots tuk the country, sure,
A race that lives on dogs and cats,
Will make all mean or poor.

"But 'bout the girls and Schneider's frow,
And Kate and Sal MaGee?
I 'spose they've all got married now—
Leastwise they ought to be."

"Married! You can buck high on that;
Some of them, two, three times;
First fellows they just had to get—
They didn't have the dimes."

"Well! well! do tell! is that the way
The gals is going on?
But how's the boys and old man Ray,
And Ike and Steve and John?"

And whas become of Zacheus Wade,
Who run the big mule train?"
"Wal, Zach he made his pile, they said,
And then went back to Maine.

And so did old Pop Ray and Steve,
And Ike and Johnny Yates—
All made a raise at last, I b'lieve,
And went home to the States."

"And Slater, him that took the trip
With us to Yazoo Branch?"
"Wal, Slate he kind o' lost his grip,
And settled on a ranch."

"And Jackass Jones that came about
With whisky on the Bar?"
"Wal, Jackass, too, he petered out,
And went—I don't know whar."

"And tell me, where is Jerry Ring,
Who kept the Grizzly Bear,
Jes' down forinist the Lobscouse Spring,
And kilt the Greaser there?"

That Greaser Jesus don't you know,
That stabbed Mike at the ball,
The time we had the fandango
At Blood and Thunder Hall?"

"Oh Jerry didn't do no good,
Got crazy 'bout a woman,
And tuck at last to drinkin' hard,
'Cause she got sort o' common—

Y-a-s, was by nature low inclined,
And went clean to the bad,
Which worked so on to Jerry's mind
Hit almost made him mad.

Dick went one day up Pike Divide,
And thar lay Jerry dead,
A navy pistol by his side—
A bullet through his head."

"Tight papers them on Jerry Ring,
But, Jim, as sure as you live,
Them women is a dreadful thing—
For a man to have to do with.

But Plug Hat Smith that kept a stand—
Sold pens and ink and sich?"
"Wal, Plug he helt a poorish hand,
And never struck it rich.

Got sort o' lunny and stage-struck,
Cut up a heap o' capers,
And final went below and tuck
To writin' for the papers."

"And Jolly Jake, that drove so long
There on the Lightnin' Line,
And afterwards from One-horse Town
To Webfoot and Port Wine?"

"Got hurt on Bogus Thunder Hill—
Threw on his horses' necks—
Was carried up to Coyoteville,
And thar hant in his checks.

"'Twas kind o' queer; but these they said,
War the last words of Jake
Wal, boys, I'm on the down-hill grade,
And cannot reach the break."

"And Butcher Brown that used to boast
He'd killed so many men?"
"Ah, Butch, he met his match at last—
Van Sickle settled him;

Went out to Washoe, kilt three thar—
Found it gettin' hot;
Health required a change o' air,
And so got up and got.

Said how he'd sent a baker's dozen
Acrost lots to the grave—
Would like to make the number even
Before he took his leave.

So went for Van and came blamed nigh
A gettin' him, they say,
Then on his horse that stood near by,
He jumped and rode away.

Now Henry ain't no hand to blow,
But jes' that sort o' feller
On which its always safe to go
Your very bottom dollar.

Said to himself, like: 'Now this whelp,
To get his even tally,
Will very likely go and skelp
Some neighbor up the valley.

Reckon I'd better block his game,
And do the thing at onc't—
Besides, I don't much like this game
Rough way o' being bounced.'

When Sam had got off 'bout a mild,
He heard a Minnie hum,
Looked round and thar war Van well heeled—
Just coming after him.

Not fancying much that Minnie's tone
Sam put off on a run,
Like he would rather save his own
Than raise the ha'r o' Van.

And so they rid—wal, I suspect,
Nigh on a three mild race—
Exchanging shots without effect,
When Van gave up the chase—

Leastwise lay off, for about midnight,
When Sam came back to Lute's,
He let him out in a squar fight,
Jes' standin' in his boots.

Next day the jury found deceased,
His name was Samuel Brown,
And further that they all believed
He had been taken down

By one Van Sickle, and somewhat
About Lute Old's last night,
And on their solemn oaths did swar
He sarved the d—d cuss right!"

"Bully for Van! He's hard to beat—
And for the jury, too—
Though most a shame that way to cheat
The gallows of his due.

Where's Sailor Jack, that used to cruise
With Alabam and Yank,
Them chaps that bilked the boarding house
And burst the faro Bank?"

"Jack left the country on a ship,
And t'others, I don't know as
They ever got back from a trip
They tuck to Barbacoas."

"Learn anything 'bout Teddy Kearns,
Or Bruise Bob Magoon?"
"Both down thar at the Bay, I hearn,
Keeping a 'Bit Saloon."

"And him that wore the big moostache?"
"You mean that rich French Cunt—
He's down thar too—a slinging hash
At the Miners' Restaurant.

Yas, Frisco's lousy with them sorts
And bums of all condition,
Some of them capping for the sports,
Some playing politician."

"But tell me, Jim, about the sights,
And what you've done and seen;
Reckon you had some 'Pache fights,
Down yonder where you've been?"

"Y-a-s, got us in a rocky pass—
And thar corralled one day,
They had a dead sure thing on us—
Couldn't fight nor get away.

And 'fore our party could back out,
They shot poor Fred McKean;
The arrers flying thick about,
But not a varmint seen.

And when I found that Fred would die,
I felt almighty bad,
And jist laughed out, I couldn't cry,
I was so thundering mad.

And then I said, now look here, boys,
Ef you would save your lives,
You jist put up them shootin' toys,
And sail in with your knives.

And raisin' quick the 'Pache whoop,
I started on ahead—"
"And did the t'others back you up?"
"Yes, Dan, you bet they did!

And when the cusses seed us come,
They raised a scrouging yell,
To which our boys sang out each one,
'Wade in and give 'em—fits!

And of our band I b'lieve the whole
Was wounded more or less;
But we made good Ingens of them all,
And they'll stay good—I guess.

Poor Fred, when I came back to him,
Though trying hard to speak,
Could only say: 'tell mother, Jim,'
He was so powerful weak.

And the next day we made his grave
Upon a little knoll,
Under the shade of a mesquit grove,
On the road to Cristoval.

We had after that another fight,
With them yar pesky fellows,
Down at Arroya Saucelite,
Among the little willows.

But thar they didn't get us foul—
We'd larrit their sneaking ways—
And you can swar we made 'em howl,
And git between two days.

As for their names, why, Dan, sich frights
You never come across—
'Espiritu Santo,' which the whites
They call the 'Holy Ghost.'

'Las Mariquitas,' 'Jua de Dios'—
These names they seemed so funny,
We christened one the 'Runtty Marias,'
And t'other 'Pious Johnny.'

We altered heaps o' Greaser names—
'Los Ojos de Inez,'
'Sierra Blanco,' 'Sebastians,'
'El Cobra' and 'La Paz.'

So, too, we changed 'mongst other things,
'San Pedro' to 'St. Pat,'
'The Eyes of Inez' to 'Mud Springs,'
'La Paz' to 'Quaker Flat.'

'El Pajaro' we called 'The Bird,'
'La Reina,' 'Gypsy Queen,'
'Salinas' and 'El Rio Verde,'
'Salt River' and 'The Green.'"

'San Nicholas' we dubbed 'Old Nic,'
'Moreno' 'Dirty Dun,'
'Arroya Muerto,' 'Murder Creek,'
'Puero,' 'Ground Hog Run.'

We cut our names on every cross,
And burnt some to the ground,
To let the natives know their boss,
The white man, had been round.

Warm thar! Why, Dan, 'twas jes' that hot
That beans were cooked well done,
And we always biled the coffee-pot
Hit standing in the sun.

Soldiers who died they nearly froze—
Least that's the story they tell—
And sent right back for their underclothes
The moment they got to—well

Not to the land of the holy ones,
'Whar blodd shall cease to flow;
And thar being no use for these sons of guns,
They're not very apt to go.

"But, Dan, how has it been with you,
Off on some wild-goose chase?"
"Yes, took a trip to Carriboo
And over on the Peace:

Staid there three years and then turned south,
Came back to Camp McPhail,
And so on down to Quesnelle Mouth,
And cross the La Hache Trail

To Kamloops and Okinagane,
And through the Grand Coule,
By way of the Samilkameen,
Clean round to Cootenai.

Stopped till I made a raise again,
Then started out anew,
And striking cross by Cœur d' Alene,
Came on to Idaho."

I'd a close call at Tete l'June,
In May of Fifty-Seven,
A little more and there'd have been
Another saint in Heaven.

A half-breed Brule, a vicious set,
There—with a fishing spear—
The broken point is in me yet,
The scar, you see it here.

A well-aimed shot from Johnny Noon,
And at a single bound
That savage passed from Tete l'June
To the happy hunting ground.

"Well, Dan, you've been about some, too—
But tell me, if you know,
What has become of Ned McGrew,
And whar is Sleepy Joe?"

And Poker Pete and Monte Bill,
And—I forget his name—
What used to run the whisky-mill,
And keep the keno game?"

"Well, as for Ned, can't 'zactly say,
But 'bout the t'other three,
The last we heard, were up this way
A hanging on a tree—

Went into the Road Agency
Along with Texas Jim;
The Vigilants of Montany
Likewise also got him.

Sleepy was drowned at Upper Dalles,
And so was Al La Tour—
Went in a skiff over the falls,
And we didn't see 'em no more.

Some think that Ned was eat by bears,
And I most think so, too,
Cause didn't one gobble up Nic McNares,
On the trail to Cariboo?"

Cold up North! I've known a name
To congeal in my mouth,
And that is how the saying came
About the 'frozen truth.'

Yes, and I've seen still stranger feats,
You know, Jim, I'm no liar,—
The flames freeze into solid sheets,
As they rose up from the fire."

"Sure that's right cold! But tell me, Dan,
How goes the mining game,
And what's the chance here for a man
To strike a paying claim?"

"Well, jest 'bout here it's rather slim,
But I've got one that pays,
So pitch right in here with me, Jim,
And when we've made a raise,

We'll put off north with a good rig,
For yesterday I seen
Gus Gape, who said they'd struck it big,
High up on the Stickeen.

Or if you rather like the south,
Why, then, it's south we'll go;
The only drawback is the drouth,
Down that ar way, you know."

The next we hear of Dan and Jim
May be on the Youkon,
Or in the forests, damp and dim,
That shade the Amazon;

Or what's more likely still, we shall
Hear of them on their way
To the Diamond Fields beyond the Vaal
In Southern Africa.

And if there be no mines up there
For them to prospect, then
They'll surely leave the Heavenly shore
For the Pacific Coast again.

THE LIVE MINES OF THE PACIFIC COAST.

OFFICIAL MINING DIRECTORY.

ACCIDENTAL CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIGEL DISTRICT, STOREY COUNTY, NEVADA.

Office, Safe Deposit Building, 323 Montgomery Street, room 20. Seth Marshall, Jr., president; Otto Metchke, secretary; Seth Marshall, R. Pennel, R. Pahl, Geo. W. Deitzler, W. O. Gould, trustees. Annual meeting, 13th day of December. No. of shares, 72,000. No. of feet, 3,000. Shares per foot, 24. No. of assessment, 1. Amount per share, ten cents. Levied August 21, 1876. Total assessment, \$7,200. Listed on California Stock Exchange Board.

ADAMS HILL CONSOLIDATED.

EUREKA DISTRICT, NEVADA.

Office, Room 37, Nevada Block. S. P. Dewey, president; J. C. Powell, superintendent; S. P. Dewey, Wm. P. Dewey, S. Middleton, W. W. Traylor, W. B. Murray, trustees. Annual meeting, third Monday in May.

This property takes its name from the hill on which it is located, being an eminence lying contiguous on the north to Ruby Hill, on which the Eureka, Richmond, and other well-known mines are situated. The estate of this company is made up of a number of pioneer claims, of which the General Lee, S. P. Dewey, Wide West, Alabama, Consul, and Webfoot are the most prominent; the tract here secured comprising several acres of mineral land. Of these claims, the General Lee, Wide West, and Alabama are patented. While the ore belt of Ruby Hill strikes north-west and south-east, that passing through Adams Hill bears nearly north and south, being, like its neighbor, permeated with ledges, large and small. The country here is composed of limestone, through which the principal lodes run mostly with the main mineral belt, the smaller appearing to be in many instances mere feeders of the larger lodes. This is especially the case on Adams Hill, where this system of concentration points to a heavy ore body about the middle of this Company's ground. Before these several claims came into the possession of the present Company, there was a good deal of work done upon them, the most of it in the process of taking out the surface ores. For several years past, operations have been conducted here with more system—a central shaft having been put down, and ore extraction mostly carried on from it. A great deal of rich ore has in times past been taken from these claims; nor has extraction suffered any curtailment under the new ownership. The company, with a view to keeping down expenses, have adopted the plan of leasing the mine,

whereby they insure its systematic exploration, the work being performed under the directions of their own Superintendent, without cost to themselves. Steam hoisting works, adequate to present demands upon them, have been put up here, and not for some time will their capacity have to be increased. As the ores here contain a greater percentage of quartz than those on Ruby Hill, the large companies on the latter buy them for fluxing. While the Adams Hill ores carry comparatively little lead, they still contain too much of this metal to be worked by amalgamation. They are, as a general thing, of high grade—carrying from \$45 to \$250 per ton of silver, and in some instances a good deal of gold. The main shaft sunk on the Wide West ground is now down 450 feet, and is believed to be in close proximity to a large ore body. This mine is in excellent hands, and will be worked in a business-like way and on its merits; wherefore it would seem to offer a good chance for investment to parties desirous of holding interests in a property so conducted.

AJAX GOLD AND SILVER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 1, 309 California Street, San Francisco. Robert Barton, president; A. F. Main, secretary; Capt. Thomas Buckley, superintendent; Robert Barton, Manuel Sherwood, E. B. Rail, W. F. Myers, W. S. Lyle, trustees. Annual meeting, first Wednesday in September. No. of shares, 50,000. No. of feet, 750. Shares per foot, 66 $\frac{2}{3}$.

This one of the pioneer locations of Bodie, lies in the very centre of the richest claims in the district, adjoining the Mono on the south and the Concordia on the north. It lies west of the Goodshaw, and east of the Champion—all the above claims being now in course of active exploration. A large, double-compartment shaft is being put down on the Ajax, under a contract, to be sunk to a depth of one hundred feet, over half of which has already been made. Should not the shaft itself cut the ore body existing here, drifts will be run to intersect it, it being the purpose of the company to explore the ground with system and completeness. The company is made up largely of men of means, and whose habit it has been to make a success of this class of undertakings.

ALBION MINING COMPANY.

EUREKA, EUREKA COUNTY, NEVADA.

Office, 327 Pine Street. L. L. Robinson, president; D. F. Verdenal, secretary; E. N. Robinson, superintendent; L. L. Robinson, Clinton Gurnee, Francis Cutting, Geo. N. Hopkins, Thos. Findley, J. H. Williams, E. N. Robinson, trustees. No. of shares, 100,000.

The following intelligent article, from the *Eureka Leader* of August 7th, 1878, will explain to our readers the Albion situation:

"By invitation of Superintendent E. N. Robinson, of the Albion, we this morning paid a visit to the Albion Mine and Charter Tunnel. At the Albion work is progressing finely. The new hoisting works and machinery, made especially to the order of the company, works to a charm, and is of sufficient capacity for doing the hoisting of a shaft 1,500 feet deep. The works are inclosed in a substantial building, and everything on top betokens system and order. The double compartment shaft, neatly and thoroughly timbered, is down 335 feet, at which point a station was made and a drift started in a southeasterly direction, which is now in 70 feet. The first fifty feet was run through hard limestone, but after that commenced to work easier, and show mineral stains. At present the face of the drift is in decomposed metamorphosed limestone, which has evidently been shattered and broken up by movement, and which carries a great deal of iron and lead stains, a formation that is always met with on Ruby Hill in close proximity to ore. The indication of the close presence of a large deposit is increasing every day, and it is the opinion of all practical miners and experts who have lately examined the formation in the face of the drift that an ore body will be encountered in a short distance. Progress is being made at the rate of six feet every twenty-four hours. That the Albion will soon wheel into line as a bullion producer, no one doubts.

"The systematic manner in which the mine is worked, and the intelligence displayed in carrying on the work, speaks volumes as to the ability of those who have it in charge. Our acquaintance with Messrs. Robinson and Potts dates back over twenty years, to the early days of California gold-quartz mining, and we can remember that at that time both gentlemen were considered authority in everything pertaining to that industry, a claim that they established by their success. Mr. Potts was in charge of the famous Princeton Mine, Mariposa County, and his able work enriched Trenor W. Park and his associates. What he does not know about mining is not worth learning, and the same may be truthfully said of Superintendent Robinson. Messrs. John Williams, Doolan, Parker and Davis are also thoroughgoing and expert miners, and probably have as extensive a knowledge of Ruby Hill and its peculiarities as any men in the district. This knowledge they are turning to account in their work at the Albion, and with every prospect of triumphant success."

ALEXANDER MINING COMPANY.

UNION DISTRICT, NYE COUNTY, NEVADA.

Office, Room 4, 328 Montgomery Street. James B. Cooper, president; Manuel San Pedro, superintendent; A. B. Cooper, secretary; James B. Cooper, Manuel San Pedro, Peter Leifer, William G. Barrett, John McNeil, trustees. Annual meeting, second Monday in September. Capital stock, \$5,000,000. No. of shares, 50,000. No. of feet, 4,500. Listed on California Stock and Exchange Board.

This is a mine that pays its own way from the start without an assessment, working to this date, July 1, 1878, only the one taken out in driving tunnels and drifts and sinking winzes. Gross yield of bullion to July 1, 1878, \$87,000. This speaks whole volumes as to the solid merit of the property. The developments show an immense contact vein, having a foot-wall of porphyry and a hanging wall of limestone, with a heavy lining of clay. The croppings of the lode are massive, and are traceable for miles. The Alexander mine lies very favorable for drainage, the present working being through tunnels, and it can be worked to a depth of 600 feet before reaching water level, and it now has an ore body exposed to view, and lying above the water lines, large enough to employ a first-class 40-stamp mill, which the company is now building, for over three years. The ores are free-working chlorides, and are very easily crushed, and yield a profit of over \$40 per ton. The mine being located at Grantsville, Nye County, Nevada, is in a country well provided with wood and water, and is near the well-known and fertile Reese River Valley. The mine is open to the inspection of all comers, and has all the indications of one that will come in strongly as a dividend-paying mine, and come to stay.

ALLEN CONSOLIDATED MINING COMPANY.

CEDAR HILL, VIRGINIA, NEVADA.

Office, 310 Pine Street, room 15. M. J. McDonald, president; J. M. Pew, secretary; Fred. Jones, superintendent; M. J. McDonald, S. Heydenfeldt, Jr., Ferd. Vassault, T. J. Owens, Joseph Clark, trustees. Annual meeting, first Monday in October. No. of shares, 50,000. No. of feet, 660.

The Allen Consolidated is a relocation of the old Allen Company, lying between the Sierra Nevada and Utah mines, made on the first of January, 1875, and comprises 660 feet of the Comstock Lode, for which a patent has been applied. The old Allen Company had sunk a shaft years ago to a depth of 450 feet, and struck the ledge with results varying from \$12 to \$20 per ton, but abandoned same in 1867, the present location having been made under the United States laws. It is proposed to merge this company with the Peytona Company, immediately adjoining it on the west, and thereby settle all disputes between these two companies, and that portion of the Comstock lying between the Sierra Nevada and Utah mines.

ALPHA CONSOLIDATED MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 29, Nevada Block. J. D. Fry, president; William Willis, secretary; A. C. Hamilton, superintendent; J. D. Fry, C. L. Weller, A. K. P. Harmon, W. M. Lent, Lewis Gerstle, trustees. Annual meeting, third Monday in June. No. of shares, 30,000. No. of assessments, 9. Amount, \$1.00. Levied, March 21, 1878. Total assessment, \$240,000. Listed on San Francisco Stock and Exchange Board.

This mine is located between the Exchequer and Con. Imperial grounds, where the deepest workings on the Comstock Lode are now in progress. This claim has been explored not only to a great depth, but also with great thoroughness, the work now going on upon the 2,400-foot level of this mine, being conducted through the shaft of the Con. Imperial, and a combination drift run for the development of Exchequer and Bullion grounds. Crosscut No. 2 west, on the above level, is at this time advanced a distance of 135 feet, its entire face in solid quartz, and very near to the ledge cut in Crosscut No. 1. A crosscut on this level has also been extended east 112 feet, the face of which is in soft vein porphyry and quartz carrying low assays. In a geological point of view, the excavations made in this level are of the most encouraging kind. The drift north on the 2,400-ft. level has been carried to the south line of the Exchequer, where the company will continue it on through their ground, the three companies here mentioned co-operating in the work of deep exploration. With the flattering prospects now presented in the lower levels of the Alpha and the developments recently reported in the immediate vicinity, this mine is likely to be the site of the next important ore find recorded on this section of the Comstock.

ALTA SILVER MINING COMPANY.

GOLD HILL MINING DISTRICT.

Office, 302 Montgomery Street. Daniel Cook, president; W. H. Watson, secretary; Ed. Boyle, superintendent; Daniel Cook, Seth Cook, R. N. Graves, Monroe Thomson, W. F. Myers, trustees. Annual meeting, third Tuesday in August. No. of shares, 108,000. No. of feet, 600. Shares per foot, 180. No. of assessment, 12. Amount, \$108,000. Levied, July 18, 1878. Total assessments, \$883,553.62½. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine, which covers a number of early locations on the south end of the great mother lode of Washoe, has been in course of active development for a series of years. It has from the first been regarded as a location of great promise, and has always had the benefit of a wise and energetic management on the ground. While under the supervision of Col. C. Derby, operations were conducted with especial vigor, this gentleman having in two years accomplished as much in the way of sinking on this property, as was effected upon some others in the vicinity in a period of ten or twelve years. The vein matter on this ground connects itself on the north with the Gold Hill group of mines, and on the south with the ore developments made in Silver Hill and other claims on the south. The Alta is the leading mine on the south end, or Devil's Gate District, on the Comstock Lode. Its shaft is now down 1,580 feet, having cut through the vein at the depth of 1,300 to 1,400 feet. Lateral drifts have been run on the 1,050, 1,150, 1,250, 1,350, 1,450 and 1,550-foot levels, with improved prospects on each successive level.

On the 1,450 level, the north lateral drift has penetrated good ore at a distance of seventy or eighty feet, running with the vein, and gaining in that distance a depth or width of twenty feet without as yet cutting the ore. Assays show \$150 to \$170, average ore. On the 1,550 foot level, lateral drifts are progressing both north and south, showing bunches of rich ore, and a drift is being pushed east direct for the ledge, which will be reached in a few days, when it is confidently expected developments will be made that will very shortly place this mine among the paying mines of the Comstock. The formation and character of the ledge matter and ore having greatly improved on the two lower levels, fully warrants such expectations. Considerable good ore has already been developed on the various levels, and the company will soon commence milling it, the prospect now being that this mine will in a few months be paying dividends. Like all other prospective bonanzas, it has suffered greatly from litigation with adverse claimants, having expended about half a million dollars in compromising with them. At length, however, all adverse claims have been disposed of, and its title is now perfect and no longer liable to be questioned. The shaft and hoisting and pumping machinery of this company are among the best on the Comstock Lode, and the work of development will be pushed forward to greater depths with the same energy and economy that has characterized the management during the past two years.

ALTAR GOLD AND SILVER MINING COMPANY.

ALTAR, SONORA, MEXICO.

Office, Merchants' Exchange, San Francisco, room 32. Fred. R. Webster, president; F. A. McGee, secretary; O. F. Gehricke, superintendent; F. R. Webster, W. B. Wiltshire, D. W. F. Bisbee, F. B. Webster, F. A. McGee, trustees. Annual meeting, second Monday in February. No. of shares, 100,000. No. of feet, 2,200. Shares per foot, 45½.

This company was incorporated February 6th, 1878, in City and County of San Francisco, to mine for gold and silver in the District of Altar, State of Sonora, Mexico. Since its incorporation, the company has been vigorously working the mine, sinking shafts, drifting and crosscutting. Very rich bodies of ore have been laid bare; and the company has purchased a thirty horse-power engine and ten-stamp mill, complete, to work either gold or silver, and will at once ship them to their mines, and expect to be able to pay dividends at an early date. The stock of the company is nearly all owned by Eastern capitalists. The company has recently sent an expert of skill and experience to inspect the mine, and he found quite a large vein of rich silver ore, and, taking samples from the vein, found them to assay from \$100 to \$1,000 and over per ton. This is said to be the largest and most important mine in the famed Altar Mining District, Sonora, Mexico.

ALTOONA QUICKSILVER MINING COMPANY.

CINNABAR.

Office, 438 California Street. M. Zellerbach, president; Charles Allenberg, secretary; C. A. Lawrence, superintendent; M. Zellerbach, Charles Allenberg, I. Frowenfeld, William Goldstein, S. I. Katz, trustees. Annual meeting, fourth Saturday in September. No. of shares, 50,000.

ALTURA MINING COMPANY.

HOPE VALLEY, ALPINE COUNTY, CALIFORNIA.

Office, Room 80, Nevada Block. B. W. Mudge, president; Daniel Buck, secretary; Edward Barnes, superintendent; B. W. Mudge, Edward Barnes, E. F. Bivins, M. G. Cobb, Daniel Buck, trustees. Annual meeting, last Friday in March. No. of shares, 100,000. No. of feet, 1,500 by 600.

AMADOR CANAL AND MINING COMPANY.

AMADOR COUNTY, CALIFORNIA.

Office, 318 Pine Street. J. S. Emery, president; J. W. Clark, secretary; F. M. Brown, general manager; J. S. Emery, Abner Doble, C. Temple Emmet, F. M. Brown, Thomas Bell, trustees. Annual meeting, first Wednesday in August.

The Amador Canal and Mining Company is one of the great mining interests of California. The works are located in Amador County, and consist of a canal forty-five miles long, with the necessary reservoirs, pipes, side ditches, etc., for supplying water from the Blue Lakes, and the North Fork of the Mokelumne River, to the mines of the mother lode in Amador County, embracing the vicinity of Sutter Creek, Jackson, Amador, Drytown, etc., for mining purposes, and used as a motive power for quartz mills and other mining machinery, also, for supplying water to hydraulic mines. This is proving a great saving in the cost of reducing the ores, the companies estimating that they greatly increase their capacity for milling ores by using a good head of water in place of steam. The cost of running is greatly reduced by the use of water, thus enabling companies to work a lower grade of ore than when the motive power is steam, at the present and increasing price of fuel.

The works of the company have been pushed to completion, at a cost of over \$500,000, and are supplying the following companies with water for motive power and other purposes, viz.:

Keystone Con., 40 stamps; Oneida, 60 stamps; Amador Con., 40 stamps; Lincoln, 40 stamps; Original Amador, 30 stamps; Bunker Hill, 10 stamps; Gover, 20 stamps; Crown Point, 10 stamps; Talisman, 10 stamps; Pennsylvania, 10 stamps; Kennedy, 20 stamps; Monterichard, 10 stamps; Potosi, 10 stamps; Pine, 10 stamps; Rising Sun, 5. Also, the Newton Copper Mine, Amador Reduction Company, Gage Reduction Company, Sutter and Amador Water Company, Mannon Foundry, Sutter Creek; Knight's Foundry, Sutter Creek;

St. Mary's Hydraulic Mine, Bluxome Hydraulic Mine, Mehan Hydraulic Mine, Fulcher Hydraulic Mine, Amador Lumber Company, sawmill.

The capacity of the company's works is at least 100,000,000 gallons per day, and after using the water for supplying the mills and mines as above, it is taken up and used a second and third time for hydraulic mining and irrigating. The main canal is also used for floating mining timbers, lumber, wood, and lagging directly from the forests to the mills and mines.

New enterprises are continually springing up all along the route, and many sections of mining lands are getting ready for operations, which have heretofore lain idle on account of the limited supply of water necessary to separate the gold from the soil.

The works of the company are the only sources through which this supply can be obtained, and no other water rights exist which can injure or lessen the demand.

AMADOR LUMBER COMPANY.

AMADOR COUNTY.

Office, Room 6, 318 Pine Street. George R. Adams, president; J. W. Clark, secretary; F. M. Brown, superintendent; George R. Adams, J. S. Emery, F. M. Brown, J. L. Wetmore, J. M. Morton, trustees. Annual meeting, second Wednesday in November.

The Amador Lumber Company was organized for the purpose of manufacturing and selling lumber. Its sources of supply are the valuable forests in the eastern part of Mokelumne. Lumber and timber is floated from the mills by the Amador Canal to a market in Jackson and Sutter Creek, in Amador County. There is an extensive market in all that region, which cannot be so cheaply supplied from any other source. The company is in the successful prosecution of this business.

AMAZON CONSOLIDATED MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. Geo. B. Congdon, president; John Crockett, secretary; D. H. Jackson, superintendent; Geo. B. Congdon, J. P. Page, G. W. Osborn, H. S. Tibbey, F. P. Foster, trustees. Annual meeting fourth Tuesday in November. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. No. of assessments, 5. Amount, \$6,000. Levied, February 11, 1878. Total assessments, \$45,000. Listed on San Francisco Stock and Exchange Board.

This mine is being developed conjointly with the Glasgow, by a vertical shaft now sunk to a depth of 430 feet. This is a two-compartment shaft, and well timbered throughout. Over it have been erected steam hoisting works with capacity to do the lifting and pumping to a depth of 1,500 feet. Powerful pumping gear, extensive building shops, with full supply of tools, etc., have been provided, everything in and about the mine being of a substantial kind, and in first-class order. The length of drifts run, nearly all timbered, amount to nearly 500 feet. The lode of which this mine forms a section, is one of the most remarkable ever opened up in Western Nevada. Geologically speaking, it is the acme of perfection, of great thickness and surface exposure; it stands between its nearly upright walls like a piece of masonry. The linings of the walls consist of a heavy clay selvage, often more than a foot in thickness, which, separating the vein matter from the country rock, admits of the former being easily broken down and removed, thereby greatly reducing the cost of ore extraction. These walls are not only well lined, but they present, wherever uncovered, smooth, regular and unbroken faces, denoting here one of the best marked and well preserved fissures in nature. In the fracture and filling of this fissure powerful dynamic and magnetic agencies have been at work, and if it shall fail to be both persistent and fertile, nature will fail to have fully effected an obvious purpose. But this will not happen—there are ore bodies in this fracture. They may lie deep, but they will be found somewhere below in great power. Already much ore of medium grade has been developed in this mine. At the depth of 100 feet in main shaft, a cross drift has been run easterly fifty-four feet to the hanging wall of the vein. From here a drift was run to foot wall, fifty-five feet, showing a large amount of low grade ore. Lateral drifts were run each way thirty-five feet, and a winze sunk sixty feet, the ore not showing improvement. Sinking main shaft was continued until the 200-foot level was reached. At this depth a shaft penetrated vein. From this station drifts were run each way on the vein, one north sixty-five feet, and one south twenty-four feet. The ore at this level shows great improvement, but is badly broken and mixed with vein material. The walls are of smooth, blue clay and well defined. Sinking of the main shaft was then resumed, and at the depth of 300 feet, much water was encountered. From this point a cross drift was run westerly thirty-five feet to east or foot wall of the vein. Lateral drifts were run each way 100 feet; south drift showing ore in bunches the entire distance. The drift north toward the Glasgow ground cut a fine streak of ore two feet in thickness, giving good assays and entirely free from worthless vein material. This ore is on the line between Amazon and Glasgow mines. A winze was sunk on this vein twenty feet, and found to widen as it went down, water coming in such quantity as to impede work. Sinking main shaft was again resumed, and at a depth of near 400 feet a stream of water was found that drove the miners out of the shaft, and necessitated the putting in of the present pumping machinery. This occurred nearly two years ago, but the mine being then owned mostly by men of small means, they were unable, after putting in the new machinery, to resume active operations, wherefore work for a long time was intermitted. Recently the mine has gone into other and financially abler hands, who will now push its exploration with system and vigor. The Amazon and its mate, the Glasgow, are the coming mines on the southeasterly sweep of the Comstock.

AMERICAN MINING AND DREDGING COMPANY.

Office, 323 Montgomery Street, room 20. George W. Deitzler, president; E. Moreau, secretary; E. Moreau, superintendent; George W. Deitzler, E. Moreau, W. O. Gould, E. Chaquette, Charles A. L. Laplante, trustees. Annual meeting, second Monday in March. Number of shares, 60,000.

AMERICAN FLAT MINING COMPANY.

AMERICAN FLAT, STOREY COUNTY, NEVADA.

Office, 331 Montgomery Street. W. B. Boyden, president; C. A. Sankey, secretary; E. Strother, superintendent; W. B. Boyden, A. Stern, A. K. Grim, E. Strother, F. G. Smith, trustees. Annual meeting, first Wednesday in August. No. of shares, 30,000. No. of feet, 500. Shares per foot, 60. No. of assessment, 7. Amount, 25c. per share. Levied, May 13, 1877. Total assessments, \$172,500.

ANDES SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 2, Nevada Block. George S. Dodge, president; M. Landers, secretary; Jno. F. Egan, superintendent; George S. Dodge, Jno. Landers, R. F. Bunker, R. G. Brown, George W. Brittan, trustees. Annual meeting, 18th December. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessments, 10. Total assessment, \$325,000. Bullion yield, \$52,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine is situated directly west of the Consolidated Virginia and California. It was originally located in 1859, but re-located on 17th August, 1872. The company has a United States patent for its ground, dated 18th October, 1873. The work of development has been actively carried on since the re-location. The company has a three-compartment shaft six hundred feet in depth, with powerful hoisting and pumping machinery. It has expended \$325,000 in the development of the mine, a great deal of work having been done. Extensive drifts have been run on the 150, 300 and 450-foot levels. The ground of this company is that formerly owned by the Old Virginia and Burning Moscow companies, and is about three hundred feet west of the Comstock croppings.

ANDREWS MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. C. L. Weller, president; D. L. Thomas, secretary; C. L. Weller, A. P. K. Harmon, E. V. Robbins, Julius Jacobs, B. D. Simpson, trustees. Annual meeting, second Wednesday in May. No. of shares, 120,000. No. of feet, 600. Shares per foot, 200.

ARGENTINA GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Silas Selleck, president; Thad. S. Fitch, secretary; Silas Selleck, Henry S. Fitch, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, third Saturday in September. No. of shares, 100,000. Shares per foot, 133 $\frac{1}{2}$. No. of feet, 750.

The Argentina is one of a series of locations which have been made on a double line of croppings lying to the south and east of Florida mine, marking the course of two broad and well-defined mineral-bearing ledges, and named the Vivian and San Fernando Lode. These ledges, where they crop to the surface, and when cut by a tunnel on the San Fernando claim, are 300 feet and 200 feet broad, respectively, and filled with genuine matrix and carrying ore in bunches. A three-compartment working shaft has been commenced on the line between this claim and the Aureola, which adjoins it on the north, the expense of which is to be borne conjointly, and from which both claims are to be prospected.

ARGENTA MINING COMPANY.

TUSCARORA DISTRICT, BLKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. L. Brown, president; B. H. Brown, secretary; John E. Dixon, superintendent; J. L. Brown, G. W. Grayson, M. Herman, Henry Williams, E. M. Hall, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 2. Amount, 15c. per share. Levied, December 11, 1877. Total assessments, \$20,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

ARGONAUT MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, 511 California Street. H. H. Wood, president; J. Pentecost, secretary; F. A. Wilder, superintendent; J. F. Cassell, H. H. Wood, T. F. Palmer, J. Pentecost, Ira G. Hoyt, trustees. Annual meeting, fourth Tuesday in September. No. of shares, 60,000. No. of feet, 1,500.

ARMAND GOLD AND SILVER MINING COMPANY.

DEL NORTE COUNTY, CALIFORNIA.

Office, 240 Montgomery Street. A. W. Mann, president; J. L. Fields, secretary; A. B. Barnard, superintendent; A. W. Mann, A. B. Barnard, Jno. D. Gray, J. L. Fields, B. C. Jackson, trustees. Annual meeting, March 27th. No. of shares, 100,000. No. of acres, 440.

ARIZONA SILVER MINING COMPANY.

UNIONVILLE, HUMBOLDT COUNTY, NEVADA.

Office, Room 29, Nevada Block. P. H. Kramer, president; William Willis, secretary; John C. Fall, superintendent; P. H. Kramer, John C. Fall, H. L. Coye, George S. Dodge, Thomas Sunderland, trustees. Annual meeting, first Tuesday in June. No. of shares, 48,000. No. of assessment, 3. Amount, 25c. per share. Levied, February 15, 1877. Total assessments, \$108,000. Bullion yield, \$169,635.43.

ARIZONA UTAH GOLD AND SILVER MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, 408 California Street. Thos. J. Kerr, president; O. H. Spencer, secretary; John M. Rice, superintendent; Thomas J. Kerr, John R. Krouse, Thomas Arthur, Warner Buck, A. H. Brooks, trustees. Annual meeting, fourth Friday in February. Number of shares, 100,000. Number of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Number of assessment, 1; amount, three cents; levied September 10th; total assessment, \$3,000.

This property consists of 1,500 feet on a heavy, well-marked lode, and lies half a mile southerly from the celebrated "Mexican" mine, and about one and a half miles in a northerly direction from the "Blue Bird" mine, also well known for the rich character of its ores. The claim was taken up in July, 1877, since which time a shaft has been started and is now being put down on the ledge. This ledge has a north-easterly and south-westerly strike, is from four to eight feet in width, and crops out the entire length of the claim. From an open cut in the croppings, ore has been taken that assays at the rate of \$321.78 per ton. This ore is of the same kind as that taken from the "McMillan" mine—also in the Globe District—being composed of rich sulphurets, and chlorides carrying much horn-silver and native metal, and assaying all the way from \$1,000 to \$25,000 per ton. The gangue is also similar to that in the "Mexican" and "McMillan" mines, consisting largely of spar. The country formation is a stained granite, general throughout this region. This Company is made up of well-known San Francisco business men and working miners, who intend to open up the vein in a systematic and thorough manner, it being their purpose to hold the property and work it for what it is worth, and not manipulate it for a market. At a depth of about 125 feet they expect to develop a heavy body of good ore. To that level the shaft will be put down with expedition, there being funds on hand for the purpose. This mine is situated six miles from Globe City, and two and a half miles from the Miami mill, where they expect to have their ore worked. We may reasonably expect that this property will make a good ore exhibit in a very short time.

ATLANTIC CONSOLIDATED MINING COMPANY.

DEVIL'S GATE DISTRICT, NEVADA.

Office, Room 21, 328 Montgomery Street. C. X. Hobbs, president; David Wilder, secretary; John Yule, superintendent; C. X. Hobbs, James J. Green, W. P. Dougherty, W. M. Lubbock, M. Mayblum, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 1,800. Shares per foot, 55.5-9. No. of assessment, 1. Amount, \$25,000. Levied October 31, 1877. Total assessment, \$25,000. Bullion yield, \$750,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange.

The Atlantic Con. is a pioneer. It is situated a mile west of Silver City, and is reached by the way of the south bank of American Ravine. The old Atlantic Company was located in 1860, and, from 1861 to 1863, took out not less than \$750,000 in bullion. The ledge was cut in three places by tunnels, called respectively the 120, 220, and 320-ft. levels, and the ore, which was milled at the Brooks, Swansea, and Franklin mills, averaged from \$38 to \$40. It was taken from a vein 15 feet in thickness. A winze was sunk from the 320-ft. level, and some valuable ore taken therefrom. More recent developments have been made by a new tunnel, cutting the ledge lower down, and on what is called the 420-ft. level. At a distance of 530 feet from the mouth this tunnel cut the vein, and exposed an ore body which, on the adit level, was 30 feet in width and of good milling quality—the assays running from \$30 to \$100. This ore body is found at the intersection of two veins—one known as the red ledge, which carries gold, and a white ledge, bearing silver in chlorides and sulphurets. This adit level cuts the ledge 100 feet below where it was cut on the 320-ft. level above mentioned, and the space between the two is known to be filled with good ore. In estimating the value of the Atlantic Con., and of the ledge on which it is situated, one fact is worthy of consideration. For ten years the 320-ft. level of the mine supplied Silver City with water; but when the Overman struck the heavy flow of water last winter, the supply was cut off, and the mine has been perfectly drained since. This shows both mines to be on the same vein, and that the Overman will drain the Atlantic Con. at least 1,000 feet.

This is one of the few early Comstock locations that has a continuous record reaching down from the very inception of the Washoe movement to the present time. It has a history, and a good one. It has been more than self-sustaining throughout the entire period of its active development. It is an explored, productive property—not a mere prospect-hole, but a mine. The lode here is powerful, well marked, and fertile—carrying large deposits of good ore even in its upper workings. It has been opened enough to establish for it a most promising future. It occupies a locality traversed by the great southerly arm of the Comstock, and only requires a vigorous management, such as it now enjoys, to be speedily advanced to a prominent position. The most of the shares of this Company have recently been bought up by John P. Jones and other men of large mining experience and great financial strength, who purpose to put the mine in first-class shape and work it in a thorough and systematic manner. Bullion shipments will be in order here as soon as the new directory, just installed, can get supplies and a working force on the ground.

AURORA TUNNEL AND MINING COMPANY.

BODIE DISTRICT.

Office, 304 California Street. R. N. Graves, president; A. Baird, secretary; H. M. Yerington, R. N. Graves, A. J. Ralston, N. K. Masten, W. E. Hale, trustees. No. of shares, 60,000. No. of assessment, 1. Amount, 15c. per share. Levied, August 12. Total assessment, \$9,000. Listed on San Francisco Stock and Exchange Board.

This is another of those deep driven adits designed to explore the great metalliferous zone

of Bodie far beneath the surface. It was among the early projects so significant of the abiding faith entertained by the pioneer miners in the permanent wealth and ultimate outcome of the district; these resolute men having with their slender means pushed it forward nearly a thousand feet towards its objective point. In the construction of this tunnel they had a double purpose—having in view the opening of a passage-way for draining and working the tier of veins already taken up in the ridge between Bodie Bluff and Silver Hill, and the discovery and locating of any blind lodes that the tunnel might intersect in its course. The surface claim taken up is 3,000 feet in length, extending clear across the mineral-bearing belt that here traverses the country. The tunnel enters the hill from the east, passing through the "Goodshaw," "South Standard," and such other parallel claims as lie in its path. For the purpose of aiding ventilation, an air-shaft has been opened from the surface to the tunnel level, and 500 feet in from its mouth a prospecting winze has been sunk to a depth of 100 feet. Several blind veins have already been intersected by the tunnel, all of which have been duly secured by the Company, who will in good time proceed to explore such other favorable mineral indications as this work has partially laid open. Among the lodes cut by the tunnel is one situate 765 feet from its entrance, that consists of fully 15 feet of solid vein matter, the whole of it sufficiently rich to warrant its thorough exploration. This enterprise can hardly fail of good results; the names of the Trustees being in themselves a sort of guarantee of ultimate success. The construction of this tunnel, which is to be pushed straightway to completion, will soon be supplemented by other work, designed to further develop the property and bring it into a productive condition.

AUREOLA GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Silas Selleck, president; Thad. S. Fitch, secretary; Silas Selleck, Henry S. Fitch, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, last Saturday in September. No. of shares, 100,000. Shares per foot, 133½. No. of feet, 750. No. of assessment, 1. Levied, June 26, 1876. Total assessments, \$10,000.

The Aureola is one of a number of claims which have been located on the Vivian and San Fernando lode, a broad mineral-bearing, double ledge, lying to the south and east of the Florida. The ledges crop to the surface together here, and are 600 feet in width, while further south they appear as separate and distinct formations. These croppings are rich in sulphurets, and where the ledges were intersected by a tunnel run into the San Fernando claim, both veins were found to be possessed of the true gangue, and to bear ore in bunches and streaks. A three-compartment, combination shaft has been started on the line connecting this claim with the Argentina, and when this reaches the depth of 200 feet, cross cuts will be run and the vein opened up. The prospects are really excellent.

AYRES AND HOPKINS SILVER MINING COMPANY.

CARSON, ORMSBY COUNTY, NEVADA.

Office, 313 Pine Street, rooms 32 and 33. J. I. Ayres, president; J. W. Morgan, secretary; A. S. Gould, superintendent; J. I. Ayres, J. F. Place, L. B. Jewell, P. D. Barnhart, S. C. Backus, trustees. Annual meeting, third Monday in June. Number of shares, 100,000. Number of feet, 1,500. Shares per foot, 663.

The Ayres and Hopkins occupies a position on the Ayres Lode, between the Ayres Con and the Loretta, and possesses all the valuable characteristics which distinguish that formation. It was the original location on the lode, and was made early. The ores from the croppings of the ledge, when exhibited in San Francisco, and at the Nevada State Fair, at Reno, attracted a very large share of attention, and much wonder was excited as to whence they came, as at that time the locality of the lode which produced them was kept a secret. They present a beautiful and peculiar appearance, resembling somewhat peacock copper, being stained on the exterior by that metal, but are remarkably free from all base metals. One peculiarity of the ore is that in the same piece will be found sulphurets, chlorides, bromides, ruby and native silver, and free gold. The poorest rock yet taken from the vein yields assays of \$120, while selections have been made which returned upwards of \$7,000. The average of the ledge is about \$350, and about five hundred tons of this ore have been already extracted and piled on the ground. The location is about two and one-half miles from Carson, and is easily accessible, and a good wagon road, which leads through Dry Cañon to the workings. There is an abundance of water near at hand, and wood is plenty and cheap in the vicinity. Ore can be mined and reduced on the Ayres Lode for about one-half the cost of mining and milling on the Comstock. Everything considered, this promises to be one of the most valuable mining sections of Nevada.

BALTIMORE CONSOLIDATED MINING COMPANY.

AMERICAN FLAT, STOREY COUNTY, NEVADA.

Office, 331 Montgomery Street. George Congdon, president; C. A. Sankey, secretary; E. Strother, superintendent; George Congdon, S. Heydenfeldt, E. Strother, W. B. Boyden, M. Stern, trustees. Annual meeting, first Thursday in October. No. of shares, 84,000. No. of feet, 1,050. Shares per foot, 80. No. of assessment, 19. Amount, 50c. per share. Levied, April 30, 1878. Total assessments, \$936,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

This was the pioneer mine of American Flat. It is situated south of the Caledonia. Since our last report, the shaft has been sunk to the 1,450-foot level, or about 200 feet deeper than it

was at that time. The hoisting and pumping works of the company are ample for the proper exploration of their mine. The works on the Caledonia drain this mine to a great extent. The work of development has been delayed during the past two months, but will shortly be resumed.

BALTIMORE MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA TERRITORY.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; C. Gurnee, Fred. W. Hadley, J. H. H. Williams, A. Thomas, E. F. Stone, trustees. Annual meeting, third Monday in December. No. of shares, 100,000. No. of feet, 1,500.

BARCELONA CONSOLIDATED MINING COMPANY,

SPANISH BELT DISTRICT, NYE COUNTY, NEVADA.

Office, 320 Sansome Street. Benj. Flint, president; Benj. Flint, Richard Homfray, F. A. Benjamin, H. K. Moore, trustees.

The Barcelona Con. is situated as above, and on the Tecoma range of mountains. The lode upon which this, with other locations, is made, is a genuine fissure contact vein, having a foot wall of porphyry and a hanging wall of slate, and is easily traceable for twelve miles along the range. The ledge through the Barcelona Con. crops heavily to the surface, having a width of 200 feet, the ore taken therefrom assaying remarkably high. The vein has been prospected by a shaft 175 feet in depth, and by levels from the 85 and 175-ft. stations, and by winzes and crosscuts therefrom. The crosscut on the lowest level has intersected a body of solid ore 14 feet in thickness. This ore, accordingly as it is assorted, will mill from \$50 to \$150 per ton, the mass of it averaging perhaps \$85 per ton. Steam hoisting works have been put up over the shaft, at a cost of about \$15,000. As the mine makes a good deal of water, this company, in conjunction with the South Barcelona, has commenced a tunnel, to be driven in from the east, which will strike the ledge at a depth of over 600 feet. Over 300 feet of this tunnel, which is to be 1,300 feet in length, is already completed. A great deal of the ore taken from this mine is of an excellent quality—several lots sent to San Francisco having been sold for over \$400 per ton. This district receives its name from the broad mineral range or belt that here strikes across the country in a north and south direction, and which is so called because it was first discovered by some Spanish-speaking miners. This belt carries two parallel lodes, one very heavy and the other light. The union of their two claims—one on each of these lodes—has added to the name of this Company the term "Consolidated." After a considerable intermission, they are about to resume active operations on their mine, which is considered one of the most promising in Central Nevada.

BAY STATE SILVER MINING COMPANY.

BRISTOL, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. R. H. Minister, president; J. W. Pew, secretary; Frank Wheeler, superintendent; R. H. Minister, E. B. Dorsey, M. J. McDonald, J. M. Day, C. B. Gould, trustees. Annual meeting, fourth Wednesday in December. No. of shares, 100,000. No. of feet, 1,236½.

BECHTEL GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, New Stock Exchange, Pine Street. Wm. M. Lent, president; Wm. H. Lent, secretary; Wm. M. Stewart, Wm. M. Lent, B. B. Minor, F. K. Bechtel, W. B. Carr, trustees. No. of shares, 60,000. The location embraces several parallel ledges.

This is an old location, owned and worked in early days by Judge Bechtel and the late Jas. Stark, the well known actor, who for some time gave his personal attention to the development of the property. Since the revival of operations in the district, the work of development has been carried on at first with good success, but latterly it has been under a cloud, owing to the coming in of a porphyry "horse" at a depth of 300 feet that continued for about 300 feet additional depth, but which has since been gradually giving way to ore that is now increasing in quantity and quality as depth is gained. The shaft has reached a depth of about 700 feet. Considerable bullion has been taken out from the upper levels, but the ore is of low grade compared with Standard and Bodie ores. No doubt richer ore will be found as developments progress.

BELLA UNION QUICKSILVER MINING COMPANY.

NAPA COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. C. H. Simpkins, president; C. H. Simpkins, H. C. Robinson, J. M. McDonald, A. C. Head, trustees. Annual meeting, third Tuesday in January. No. of shares, 50,000. Total assessments, \$36,236. Bullion yield, \$22,481.91.

BELLE ISLE MINING COMPANY.

TUSCARORA DISTRICT, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. G. W. Grayson, president; R. H. Brown, secretary, Jno. McNally, superintendent; G. W. Grayson, M. Herman, Milton Lambeth, Stephen Roberts, D. Crittenden, trustees. Annual meeting, fourth Thursday in September. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

BELCHER CONSOLIDATED GOLD MINING COMPANY.

BIG OAK FLAT, TUOLUMNE COUNTY, CALIFORNIA.

Office, 501 Sansome Street. G. Onesti, president; John Connor, secretary; A. Deferrari, superintendent; A. Deferrari, G. Onesti, L. Valente, G. Paravagna, L. Paravagna, trustees. Annual meeting, third Wednesday of March. No. of shares, 25,000. No. of feet, 4,050. Shares per foot, 67-100. Bullion yield, \$30,000.

The Belcher Consolidated Gold Mining Company's property is situated in Tuolumne County, near Big Oak Flat, and is a consolidation of the Deferrari, Diamond Gulch and Speranza mines. The property is in working operation, having a shaft, sunk on very heavy croppings on the ledge, to a depth of 195 feet, all the way in very good ore. About 125 feet below the surface a tunnel has been run to the ledge and connecting with the shaft. From the point of intersection drifts have been run 300 feet to the north and 200 feet to the south, respectively, showing a well-defined ledge of about four feet average width. A crosscut run in this level discovered, further to the west, another parallel ledge of great value, averaging from four to five feet in width. The ledge, in the incline below this level, is from four to five feet wide, giving splendid assays. The ore taken from above the tunnel level has by mill process averaged \$39, in free gold, carrying also a very high percentage of sulphurets. The company own about 400 feet east. Another ledge, averaging three feet, has been opened. A ten-stamp mill in perfect order, and also a two-stamp patent mill, worked by compressed air. The formation is slate one of the best formations to be met with, which proves itself in this property by the developments and improvements daily made. Assays lately made give \$55.12, \$67.77, \$89.18, in free gold, and \$616.25, \$842.32, \$586.56, per ton in sulphurets.

BELCHER SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. James Newlands, president; John Crockett, secretary; W. H. Smith, superintendent; J. D. Fry, A. K. P. Harmon, J. H. Dobinson, James Newlands, R. F. Morrow, trustees. Annual meeting, last Tuesday in January. No. of shares, 104,000. No. of feet, 1,040. Shares per foot, 100. No. of assessments, 14. Amount, \$104,000. Levied, May 14, 1878. Total assessments, \$1,234,400. No. of dividends, 38. Amount, \$104,000. Declared, April 5, 1876. Total dividends, \$15,397,200. Bullion yield, \$34,238,839.26. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Belcher location lies between the Crown Point and Overman. The hoisting works are beside the track of the Virginia and Truckee Railroad, where the greatest facilities are afforded for the reception of wood, lumber, and machinery, and for the shipment of ore. For several years, a large amount of ore was extracted from this mine—for a time as much as 500 tons per day—all of which was shipped for reduction. The most of this ore was taken out between the 1,000 and 1,500-ft. levels, near which latter the main ore body became exhausted. Since that event, the company have prosecuted their search for a new bonanza at greater depths; and now, below their 2,300-ft. level, have been rewarded by almost conclusive evidence of the presence of a new and valuable ore deposit at that point. In sinking to these profound depths, the entire ground has been thoroughly prospected by means of numerous drifts, crosscuts, and winzes, driven on the various levels—the whole of this work having been performed in accordance with the most approved modern methods of mine exploration. In the furtherance of this work, and with a view to meet the future requirements of the mine, powerful hoisting and pumping machinery has been placed over the main shaft, jointly sunk by this and the Crown Point Company, for exploring and working both mines. On the 2,360-ft. level, the lowest opened in the Belcher mine, a drift has been run north, connecting with the Crown Point. A drift has also been run south on the 1,600-ft. level, connecting with the Overman works. The north incline being sunk from the 2,360-ft. level of Belcher has now reached a depth of 100 feet—constituting the lowest point to which exploratory work has as yet been carried, on the Comstock.

Up till the time that it was superseded by the Consolidated Virginia and the California, the Belcher took the lead as a bullion-producer on the Comstock Lode—the amount of dividends disbursed having been large for the gross production made. What the Belcher has accomplished in this way can be seen at a glance by consulting the artistically drawn pen chart made by Mr. D. L. Thomas, giving a comprehensive exhibit of the total product, dividends, etc., of the mine—this chart having been hung up in the office of the company for general inspection. This mine, in its prosperous days, stood well in the estimation of all classes, the rich and the poor alike; and we doubt not it will soon again pass into bonanza, and again be restored to popular favor—neither the mine nor the management ever having lost the confidence of the public.

BELMONT MINING COMPANY.

PHILADELPHIA NYE COUNTY, NEVADA.

Office, 310 Pine Street, San Francisco. D. L. McDonald, president; J. W. Pew, secretary; J. J. Falkingham, superintendent; D. L. McDonald, Stephen Roberts, S. L. Stanley, M. J. McDonald, C. B. Gould, trustees. Annual meeting, second Friday in July. No. of shares, 50,000. No. of feet, 3,000. Shares per foot, 16 $\frac{2}{3}$. No. of assessment, 17. Amount \$12,500. Levied, May 6th, 1878. Total assessments, \$510,000. Bullion yield, \$325,151.42. Listed on San Francisco Stock and Exchange Board.

The Belmont claim, named after the town near by, is among the earliest taken up in this part of the Philadelphia District, having been made in 1865. Very thorough and systematic work has been done here, the mine being opened by a main shaft to a depth of over six hundred feet, with usual levels run north and south on the ledge. A body of good milling ore has been

opened up between the 200 and 300-foot levels north, that is estimated to contain some sixteen or eighteen hundred tons, and which is now being extracted. From a point between the 500 and 600-foot levels south, some fine ore is also being taken out. In the Highbridge ground, adjoining the Belmont on the north, an ore strike has recently been made, that gives additional importance to this and other mines in the vicinity. The Belmont company are owners of about three thousand feet on the dominant lode of the district, their claim being covered by United States patent. They also own one-half of the Monitor-Belmont mill and hoisting works, the former used for crushing their ores, and the latter for working their mine. On the 600-foot level in this mine, a strong, compact ledge has been developed, having the smooth, shapely walls characteristic of the masterly vein on which this series of claims is situated. With such a good exhibit of ore, Belmont shareholders may count on few and light assessments from this time on, if, indeed, they shall not find themselves wholly relieved from these burdens hereafter.

BELVIDERE GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 312 California Street. N. K. Masten, president; Andrew Baird, secretary; Porter Holmes, superintendent; R. N. Graves, J. P. Martin, A. J. Ralston, H. M. Yerrington, N. K. Masten, trustees. Annual meeting, first Thursday in November. No. of shares, 50,000. No. of feet, 1,500. No. of assessments, 1. Amount, 15c. per share. Levied, May 14th, 1878. Total assessments, \$9,000. Listed on San Francisco Stock and Exchange Board.

The Belvidere mine lies south of and next to the McClinton, and immediately west of the Bulwer. The company's claim covers an area of 1,500 by 300 feet, and embraces several parallel veins. Considerable work has been done toward developing the property, and very good results obtained. Messrs. Yerrington, Bliss, Haynie, and others, are the principal owners. They have a considerable quantity of good milling ore upon their dump, and no doubt further exploration will open up extensive deposits of a highly remunerative kind, as such have been already developed all around it. Of the old locations that now compose this property, the Washington, Yellow Jacket, and Savage have all, in times past, yielded quantities of high grade ore, that from the Washington having milled between \$200 and \$300 per ton. The company have recently put up steam hoisting works, and are pushing their main shaft with all diligence.

BENTON CONSOLIDATED MINING COMPANY.

GOLD HILL, NEVADA.

Office, 302 Montgomery Street. W. F. Myers, president; W. H. Watson, secretary; C. Derby, superintendent; Seth Cook, Daniel Cook, R. N. Graves, Jno. Skae, W. F. Myers, trustees. Annual meeting, second Thursday in March. No. of Shares, 108,000. No. of feet, 600. Shares per foot, 180. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The situation of the Benton will be best understood and appreciated when it is known that it is a recent segregation from the Alta. The ledge, etc., is more particularly mentioned under that head, as the developments have all been made on the Alta ground.

By a still later arrangement between the Benton and the Lady Washington Consolidated Company, one half of the ground covered by the claims of these and various other parties has been assigned to these two companies, the former receiving the south half lying next the Alta and the latter the other half, each getting one-half of the 108,000 shares of the stock formerly issued to the Benton Company. Into the Benton claim the valuable ore deposits already developed in the Alta are supposed to extend. The company will open up and work their ground wholly through the Alta shaft, thereby securing the means for its deep exploration at a mere nominal expense, the question of cost having been adjusted between the two companies.

BEST AND BELCHER MINING COMPANY.

VIRGINIA CITY, STOREY COUNTY, NEVADA.

Office, Room 29, Nevada Block. Robert Sherwood, president; William Willis, secretary; F. F. Osbiston, superintendent; Robert Sherwood, Geo. R. Wells, Geo. Wallace, George Congdon, S. Heydenfeldt, trustees. Annual meeting second Monday in July. No. of shares, 100,800. No. of assessment, 12. Amount, \$100,800. Levied, April 16, 1878. Total assessments, \$438,592. Listed on San Francisco Stock and Exchange Board.

The Best & Belcher is situated between the Consolidated Virginia and Gould & Curry mines, and is worked through the shaft of the latter company. The mine has been thoroughly prospected to the 1700-foot level, which has been opened up by a drift running the entire length of the mine. The position of the Best & Belcher, together with the developments which exist in the Consolidated Virginia, and the prospects in the Gould & Curry, on the same level, have their bearing upon the present and prospective value of the mine. The lateral drift has been run entirely outside the vein, for the reason that the rock worked better and allowed of more rapid progress than inside the ledge. In running this drift frequent heavy stringers of rich quartz were found coming into the vein. This company, in connection with the Gould & Curry, commenced sinking a new three-compartment shaft on the 21st September, 1878. Each company defrays one-half the cost of sinking. This new shaft is commenced considerably to the east of the ore body, which they expect to strike before reaching the 1700-foot level.

BLACK BEAR QUARTZ MINING COMPANY.

SISKIYOU COUNTY, CALIFORNIA.

Office, Room 13, 323 Montgomery Street. Thomas Bell, president; Wm. Letts Oliver, secretary; F. Harland, superintendent; Thomas Bell, S. Heydenfeldt, T. C. Wedderspoon, Alpheus Bull, John Daggett, trustees. No. of

shares, 30,000. No. of feet, 4,500. No. of dividends, 68. Total dividends, \$700,000. Bullion yield, \$1,500,000 in gold.

Not a quartz mine in California presents a better record, everything considered, than the Black Bear; this property, having been for thirteen years a steady and profitable bullion producer, and never having levied an assessment. During this time it has disbursed numerous dividends, a procedure it is likely to keep up for many years to come. This prosperity has been due chiefly to the inherent excellence of the mine itself, but in a large measure, also, to a capable management and a faithful administration of its financial affairs. That these latter have been ably and honestly cared for, the names of the men composing the directory is a sufficient guarantee.

For the past six years, this property has been mostly owned by well-known San Francisco mining men and capitalists, who have developed and outfitted it in a superior manner. The lode, which is a strong one, varying in width from 15 to 25 feet, has been explored to a depth of 430 feet in the shaft, and 1,100 below the croppings. It is enclosed in slate, has a northerly and southerly strike, and an inclination of about 45°. The ores have, most of the time, average from \$25 to \$30 per ton, but are not yielding at present over \$8 or \$10. As they can be worked cheaply, even this affords a good profit. For working the ores, the company have a 32-stamp mill, capable of reducing about 60 tons per day. Connected with the establishment is a foundry, sawmill, apparatus for treating the sulphurets, shops, houses, etc. As the ore here occurs much in chimneys, there is every likelihood that the grade will greatly improve in a short time.

BLUE JACKET MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 25, Nevada Block. A. Hemme, president; G. C. Pratt, secretary; W. Skyrme, superintendent; F. D. Bullock, Thomas R. Hayes, James Phelan, A. Hemme, W. Skyrme, trustees. Annual meeting, second Tuesday in October. No. of shares, 100,000. No. of feet, 900. Shares per foot, 1-9. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is situated between the Utah and Sierra Nevada, and is one of the old locations on the Comstock, but was not incorporated till September 4, 1878. The new company have commenced sinking a new three-compartment shaft, in place of the old one in use years ago. This shaft is being put down about 400 feet to the west of the croppings of the Comstock. The company believe they will strike that lode at a depth of less than 2,000 feet. They will erect hoisting and pumping machinery as soon as necessary.

BODIE GOLD MINING COMPANY.

BODIE, MONO COUNTY, CAL.

Office, New Exchange Building, Pine Street. Wm. M. Lent, president; Wm. H. Lent, secretary; Stephen Moore, superintendent; Wm. M. Lent, C. A. Burgess, Lewis Teese, Jr., John F. Boyd, Thomas Bell, trustees. No. of shares, 50,000. No. of dividend, 3. Total dividend, \$850,000. Listed on San Francisco Stock and Exchange Board.

The Bodie mine is the south extension of the Standard; but the continuation of the main vein of that mine into Bodie ground proved barren, and no good ore was found until they ran a prospecting drift west and struck a new ledge, now called the Bruce, over 200 feet from their shaft; and, continuing on 100 feet further, the Burgess ledge was struck, which is believed to be an extension of the West Bullion (Standard) ledge. These veins have both proved extraordinarily rich, and quite extensive, though as yet but little developed. The product of this mine in a twenty-stamp mill for the month of August last was over \$600,000—a yield unprecedented in California quartz mining. This could not be expected to continue long, and the bullion yield has been reduced probably one-half for September. And the winze has encountered a "horse," and, the south drift not looking as well, holders of the stock got frightened, and the price suddenly dropped from \$50 to \$15, but subsequently recovered somewhat, on assurances that there was ore enough in sight to pay three-dollar dividends for months to come. As the appearance of "horses" in the vein is not a very strange thing, this mine will doubtless be found to be a good mine for years to come, notwithstanding a "horse" now and then should come in. Most if not all ledges in Bodie, thus far developed, have encountered barren porphyry or "horses" at about the depth of 300 feet. The Standard did so, and found good ore below. The Bechtel, Red Cloud, and Bodie have encountered them, and will each succeed, no doubt, as did the Standard, in finding good ore below them. This Company, like all new bonanzas, is threatened with litigation, but undoubtedly have a good title to their mine.

BODIE TUNNEL AND MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 309 California Street, Room 1. Robert Sherwood, president; A. F. Main, secretary; Capt. Thomas Buckley, superintendent; Robert Sherwood, H. F. Cutter, F. Tagliabue, A. F. Main, George Daly, trustees. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33½. No. of assessment, 1. Amount, 1c. Levied, March 13, 1878. Total assessment, \$1,000.

The advantages of exploring a series of parallel veins, where these are eligibly situated for the purpose, by means of tunneling, are so manifest that they will never fail to be availed of by the experienced mining engineer. Perceiving the natural facilities that existed for cross-cutting the Bechtel belt at a considerable depth, by driving a tunnel in from the West, the pioneer miners here commenced a work of this kind at an early date in the history of the

district. As the cost of driving through the solid rock was then very great and the means of these men were limited, they were compelled to suspend this work, after having advanced it some 500 feet. Recently a company, made up mostly of San Francisco capitalists and mining men, was organized for the purpose of completing this enterprise, which they expect to do in a very short period, nearly one half of the tunnel being already finished. The cost of driving an adit of this kind will not at the present time exceed \$8 or \$9 per foot, scarcely more than a third of what it was seventeen years ago, when this work was commenced; and, what is of more importance, the time required for excavating it may, through the employment of machine drills, be curtailed in nearly the same ratio as the cost. This tunnel will intersect the Bechtel and other parallel lodes about 600 feet below the surface, affording facilities for prospecting them at that depth, as well also as for cheap ore extraction and drainage, as the company own a mill site at the mouth of the tunnel, including living springs. They will ultimately, no doubt, put up here extensive works for ore reduction. Taken altogether the company's several franchises constitute a first-class property, its value being considerably enhanced by the large means and well known energy of the men who own it.

BOOKER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 2, San Francisco Stock Exchange. C. A. Burgess, president; W. H. Lent, secretary; Joel Kay, superintendent; C. A. Burgess, C. X. Hobbs, J. G. McClinton, Wm. M. Lent, Lewis Teese, Jr., trustees. Annual meeting, third Wednesday of December. No. of shares, 100,000. Listed on San Francisco Stock Exchange Board.

The Booker is one of the new names in the old mining camp of Bodie. The claim has about 1,500 feet, and has a shaft about 200 feet in depth, which shows a three-foot vein, which assays well. The mine is southwest of the Bodie claim, and is near University tunnel. Present indications are highly satisfactory.

BRILLIANT MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 309 California Street. Robert Sherwood, president; Wm. A. M. Van Bokkelen, secretary; Sam. T. Curtis, superintendent; Robert Sherwood, Sam. T. Curtis, J. R. Middlemiss, Wm. A. M. Van Bokkelen, trustees. Annual meeting, third Wednesday in April. No. of shares, 100,000. No. of feet, 875. Listed on the San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This company is located on the Alta Company's ledge, next north of the Boyle Company, and has a width of 1,481 feet east and west. Active work is being done on the claim. A three-compartment shaft is being sunk on the claim, and a drift being run from the New York shaft at the 1,000-ft. level. The Sherwood Consolidated Company, next north, comprises 725 feet, and the Curtis Consolidated Company, 1,250 feet, is next north of the Sherwood. These three companies comprise the claims originally incorporated under the Brilliant.

BRUNSWICK GOLD MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, Room 12, Cosmopolitan Hotel. Warren T. Lockhart, president; D. L. Thomas, secretary; J. T. Lockhart, superintendent; Warren T. Lockhart, John Hanyes, E. C. Mahew, Samuel Osborn, R. D. Wade, trustees. Annual meeting, second Tuesday in January. No. of shares, 100,000. No. of feet, 1,600. Shares per foot, 62. Bullion yield, \$14,345.89.

BUCKEYE MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, 331 Montgomery Street. John S. Gray, vice-president; C. A. Sankey, secretary; C. C. Stevenson, superintendent; John S. Gray, C. C. Stevenson, A. H. Rutherford, W. L. Palmer, trustees. Annual meeting, last Friday in March. No. of shares, 4,800. No. of feet, 3,000. Shares per foot, 16. No. of assessment, 18. Amount, 50 cents. Levied, May 4, 1877. Total assessment, \$308,000.

BULLION MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 418 California Street. Wm. H. Sharp, president; Joseph Gruss, secretary; E. W. Schultz, superintendent; Wm. A. Schultz, N. Richard, J. W. Allyne, F. B. Taylor, Wm. H. Sharp, trustees. Annual meeting, second Thursday in January. No. of shares, 100,000. No. of feet, 947. No. of assessment, 6. Amount, \$1 per share. Levied, January 22, 1878. Total assessment, \$1,000,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine was located in 1859, immediately south of the Chollar, and known as the Cosser Claim. The company was originally incorporated under the laws of the Territory of Nevada. The Wellington and East Hope were incorporated with the foregoing, and still later the Fair View was bought and added. The principal place of business was for a long period in Virginia City. During its corporate existence in Nevada, there were levied forty-five assessments, aggregating \$1,802,000, and since then there have been six additional assessments, amounting to \$1,000,000, or a total of \$2,802,000. The first work done was to run a tunnel from near the site of the old Imperial works. This was pushed northerly 1,000 feet, but was directed too far toward the west to strike the ledge. This tunnel has since been used as a drain for that portion of the mine above its level, and receives the water pumped up from below. After the abandonment of the tunnel, the present shaft was commenced. It cut stringers of quartz near the surface, and when 300 feet down encountered a body of paying ore. Two hundred feet below this,

the hanging wall of the vein was struck. The shaft passed through a stratum of ledge matter 200 feet further before the foot wall of the ledge was reached. Low grade ore was found in a crosscut made from a lateral drift on this level, but the formation was found broken by the surface disturbance which had thrown up the divide between Virginia City and Gold Hill. A hundred feet below, however, this seemed to have been passed through, for the vein was followed to the Chollar line, and found to be better defined, and from 60 to 250 feet in width. Here 75 feet of low grade ore was cut through. From this level the incline commences, which runs to the 1400-foot level. This has recently been retimbered, and put in excellent order. When it was run, some streaks of very rich ore were found, and that suggested the idea of running under the formation from the 1700-foot level of the Imperial, which was accordingly done. A drift is being run north on the 1400-foot level, cutting a promising formation of clay, quartz and porphyry. The incline is being continued down toward the 1700-foot level. A winze is also being sunk from the 1400 to the 1700-foot level, and an upraise made from the latter level to meet this winze. Both winze and upraise, as well as the incline, are cutting good vein matter. A combination drift for the purpose of prospecting the Alpha, Exchequer and Bullion is being run from the 2,000-foot level of the Imperial shaft, and is cutting a stratum of dyke which contains stringers of quartz, and other indications of a near approach to an ore body, and gives promise of immediate and important developments. On the 1700, 1800 and 2,000-foot levels crosscutting has been prosecuted steadily, and a large body of quartz has been found in each, but nothing of value, or that would pay to extract, although sufficient is not known to pronounce the work a failure. At these depths the heat is excessive, and the progress necessarily slow.

BULWER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, Nevada Block. Daniel Cook, president; William Willis, secretary; William Irwin, superintendent; Daniel Cook, John F. Boyd, Monroe Thompson, H. G. Blasdel, R. N. Graves, trustees. Annual meeting, first Tuesday in June. No. of shares, 60,000. No. of feet, 3,000—three parallel ledges. No. of assessment, 1. Amount, 50c. per share. Total assessment, \$30,000. Listed on the San Francisco Stock and Exchange Board.

This is said to be the oldest location in the district, known in early days as the Homestake, from which at least a quarter of a million of dollars was taken out near the surface. It was the property of ex-Governor Blasdel, of Nevada, for ten or twelve years prior to its incorporation, June 29th, 1877, by Seth and Daniel Cook and John F. Boyd, principal owners of the Standard mine, who bought the controlling interest from the Governor. The latter bought it from the late William C. Ralston, who sunk some thousands in attempting to work it. The property consists of the original locations of the Homestake, Stonewall, and Potosi, the latter having been re-located by the present company as the Ralston No. 1 and Ralston No. 2, extending fifteen hundred feet each way from their main shaft. The Ralston vein is one of the largest in the district, and stands nearly perpendicular, carrying comparatively low grade ore; but the Homestake and Stonewall are veins of two and a-half and five feet in width, of high grade ore, similar to that of the Standard and Bodie mines, which are parallel veins lying immediately to the east. They have been prospected to the depth of four hundred feet, revealing the existence of large bodies of rich ore, lacking only milling facilities to be able to pay dividends for an indefinite period. A considerable amount of rich ore is already mined and ready for milling, and it is expected that a mill will be provided for very soon. The new vertical shaft of the Standard mine is near the ground of the Bulwer company, and is to be used for working both properties. The Bulwer tunnel, which is already advanced over eight hundred feet, will soon connect with the Standard shaft on the 400-foot level, after crosscutting the ledges of the Bulwer company. From the present outlook this mine, which now ranks third in the district in market value, will soon become at least the equal of the Standard and Bodie.

BUNKER HILL GOLD MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 320 Sansome Street. Benjamin Flint, president; Warner Craig, secretary; A. Heath, superintendent; Benj. Flint, A. Heath, C. P. Tinkham, F. P. Cooper, Warner Craig, trustees.

This is what is known as a drift claim, consisting of those deep-lying gold deposits that occupy the channels of the ancient rivers. This claim has been opened by means of two tunnels, one sixteen hundred and the other eighteen hundred feet in length. The claim itself, which is two thousand by seven thousand feet, is located on the famous "Blue Lead," at the old mining camp of Howland Flat. The gravel here is very rich, paying at the rate of \$2 to the car-load. The gold is coarse and easily saved, one chispa weighing over one hundred ounces having been taken out here. This company, having their claim well opened, will soon commence drifting out gravel with a full force of hands. The property is a very valuable one, and cannot fail to yield large net revenue for many years to come.

BUSHELL GOLD AND SILVER MINING COMPANY.

TYNDALL DISTRICT, PIMA COUNTY, ARIZONA.

Office, Room 14, 302 Montgomery Street. C. S. Benedict, president; Chas. Cranz, Jr., secretary; John E. Magee, superintendent; C. S. Benedict, John D. Graham, John Haynes, W. G. Graham, E. S. Irvin, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

The Bushell Mine is located on the Hamilton Lode, Santa Rita Mountains, nearly half a mile north of Salero Hill. The claim is 1,500 feet by 600, and consists of two parallel veins about forty feet apart; on the northerly vein are extensive ancient workings, showing that in the past the deposits here were sufficiently rich to invite special attention. The Bushell is the Boustillo, or "Old Tumacacori Mine," famous in the history of Northern Mexico, of which Southern Arizona was formerly a part. Reference is made to it in the works of Ward, Wilson, Pumpelly, Cozzens, Conklin, J. Ross Browne, and Col. R. J. Hinton in his recent work on that country. Extended references to it are also found in the civil and ecclesiastical archives of Sonora. The old Padres of the Tumacacori Mission, whose ruins are still seen in the Santa Cruz Valley, found it so rich in mineral and so full of promise, that they gave to it the name of their establishment. They, however, were not permitted to develop it to any great extent, as shortly after they had made preparations to thoroughly work it, they were slain by the Apache Indians, who have infested and overrun that whole section up to the 1st of May, 1877, preventing up till that date any successful mining operations being carried on there. On the west end of the mine are four shafts, sunk at that early period, from eighteen to twenty-five feet deep. These are now partially filled up. The surface of the vein, for a space of 235 feet, having been dug off to the depth of several feet. From these old workings, which are all irregularly stoped, large amounts of good ores have been extracted in the crudest manner, the richest then having been transported to the Tumacacori Mission for reduction. The old dumps, however, still contain sufficient good ore to pay largely for the labor of reduction. The formation, country rock, walls and casings of the vein are all that could be desired, indicating, as they do, true fissures. There are, also, strong indications that at a depth of 250 to 300 feet, these veins will come together, making a large vein from twenty-five to forty feet in width. On the surface these veins measure in width respectively, twenty-eight feet and four and a half feet, while at a depth of fifty feet, to which they have been opened, they show a large increase in width. The facilities for economical mining, and for reduction of the ores, are excellent, cheap and reliable labor being always at command, while wood and water are in ample supply. The management of the company is made up largely of well-known San Franciscans, who have increased the chances of a successful issue to the enterprise, by appointing Col. John D. Graham, Managing Director in the field. The reduction works of the company will soon be in course of erection, work on the mill site, flumes, etc., being now vigorously pressed.

CALABASAS LAND AND MINING COMPANY.

PIMA, PIMA COUNTY, ARIZONA.

Office, Room 32, Merchants' Exchange. John Currey, president; Francis A. McGee, secretary; Chas. P. Sykes, superintendent; John P. Jones, John Currey, Eugene L. Sullivan, George C. Perkins, Chas. P. Sykes, trustees. Annual meeting, second Tuesday in August. No. of shares, 100,000. No. of feet, 9,000. Shares per foot, 11 1-9.

The property of this company consists of the valuable mines of Buena Vista, San Xavier, Patterson, Arizona King, Arizona Queen, and the Democrat, with the important town site of Calabasas. These are all situated in the county of Pima, Arizona Territory, and are admirably located as to accessibility and convenience of transportation to and from the mines, while the site of Calabasas has an historic record as an old trading ranch, and for its commercial significance and possibilities. It is situated in the valley of the Upper Santa Cruz River, within ten miles of the Mexican frontier, and on the direct line of travel between Tucson and Sonora. The region in which these properties are located is now justly attracting great attention, not in California alone, but throughout the United States. Arizona is without question, as to mining possibilities, *the coming country*.

This enterprise is remarkably simple, yet unusually comprehensive. Indeed, it would be difficult to find one based upon safer principles, the intention being to rate the price of the shares mainly upon land values. And if it be that the value in the near future of the lots in the Calabasas town site, will be equal to the price asked for the shares, then it is plain to be seen that the outcome of the mines will be to the shareholders practically a *bonus*, or a premium offered to stockholders. A little inquiry, then, into the facts, by reading the interesting prospectus issued by the company, and consulting the company's officers, will determine this.

As to the character of the directors of this company, it must be said that they possess the confidence of the public, and but one opinion can be entertained for these men whose names, for the past twenty or twenty-five years, have been connected, not only with the political history of the State, but with legitimate and solid business and landed enterprises. The prospectus of the company must be read to properly understand the significance and value of Calabasas as a practical site for a mining and agricultural business in Southern Arizona. This name, "Calabasas," is found on all the old Spanish maps for the last 250 years, and it is claimed that the Santa Cruz River, near the Potrero, and approaching Sonora, fashions a soil of modern "Valley of the Euphrates," for commerce and travel; that it will be in the future as in the past 300 years, the great longitudinal pathway for railroads, travel, and commerce between the two Republics; that it will permanently control the Mexican continental freight and fare interests that terminate and belong to San Francisco and the Upper Pacific Coast; and that according to Col. Hinton's "Hand Book of Arizona," page 71, "by the Valley of the Santa Cruz, Mexico will be knit to us, and the entire section of the Union will be connected by this roadway with the growing Pacific Coast."

When we consider that for three centuries this route by the Calabasas has been traversed by cavalier, soldier, and priest, and that it was in its glory when the "Mayflower" landed at Plymouth Rock, and that it has been for long years the stronghold of the Apache, and that no valley, or spot on the American continent has half so tragic and bloody a history, any candid reader must admit that the locators of the new Calabasas are justly pardonable for the pride they take in offering its advantages to the public, and in prophesying as they do, that civilization, good government, and great wealth are soon to hold their seat in that wild and wondrously fertile "Gateway of the Mountains."

As to the value of the mines belonging to the Calabasas Land and Mining Company, the reader can best judge by the developments of the western extension of the San Xavier Mine—the claim now owned and worked by the San Xavier Mining and Smelting Company, which at the time of its purchase, did not present any more favorable or promising indications than the other on this extensive lode, all of which belong to the Calabasas Land and Mining Company. The same bold outcrop and favorable surface indications for the entire distance of over 7,000 feet was so prominent, that it was with great hesitancy the San Xavier Company decided to purchase the Western Extension, they having at the time the privilege of a choice of location on the lode. The development upon the Western Extension has been going on for about six months to this date, September 10, 1878, and in sinking two shafts to the depth of about eighty feet, and 250 feet apart, and at an expense of not to exceed \$4,000. The company have sufficient ore upon their dumps to pay for the erection of reduction works, of the capacity of forty tons per diem. With such a safe financial outlook, the company have no hesitancy in declaring that the public never had a better prospect presented for a safe and remunerative investment, and they therefore invite the most thorough examination, being confident of a favorable result. All information will be cheerfully furnished, and all facilities will be extended by the company's officers in San Francisco, and Arizona, and prospectus sent by mail to anyone seeking information, by addressing the company at their office, 32 Merchants' Exchange, San Francisco, California.

CALEDONIA SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 414 California Street. Geo. W. Beaver, president; R. Wegener, secretary; Chas. Farman, superintendent; Geo. W. Beaver, Robt. F. Morrow, John Skae, W. S. Hobart, L. S. Adams, trustees. Annual meeting, third Wednesday in August. No. of shares, 100,000. No. of feet, 2,188. Shares per foot, 45. No. of assessment, 24. Amount, 50 cents. Levied, Sep. 16, 1878. Total assessments, \$1,495,000. Bullion yield, \$345,215.26. Listed on San Francisco Stock and Exchange Board.

The Caledonia lies between the Overman and the Justice, in both of which valuable ore bodies have been developed, and both of which have stepped to the front as bullion-producing mines. The shaft of the Caledonia is now nearly on a line with those of the Comstock, as one after another has been located further to the east. The mine has in the past produced considerable ore, which has yielded to date \$345,215.26, in bullion. Lately the new works have received particular attention as well as the new shaft. Ample buildings have been erected, and powerful machinery put in operation.

Letter from the superintendent, dated September 21st, 1878, says: "Since last report the lateral drift, 1400-foot level, has been extended 35 feet; face in hard vein porphyry. North drift, 1600-foot level, has been extended 28 feet, and the crosscut 26 feet. Face of south drift shows some stringers of quartz, but most of the material is clay and porphyry. Crosscut is in very hard porphyry. The water is nearly all out of joint winze, and I think we will be able to resume it next week."

The main north drift on the 1600-foot level is still advancing, the face in lively vein matter. The east crosscut from this drift is also making good headway, the face in blasting rock. The south drift, on the 1400-foot level, is also being pushed vigorously forward, the face in quartz and vein-matter.

CALIFORNIA GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; C. Gurnee, J. M. Walker, C. Reis, R. F. Bunker, R. G. Brown, trustees. No. of shares, 100,000. No. of feet, 1,500.

This claim, which covers an area of 1,500 by 100 feet, lies between the Standard and the Spaulding, both noted mines in Bodie. The California is situated on the same ledge as the Belvidere and Bulwer, and is one of the earliest locations made in the district. A shaft has been carried down to a depth of 100 feet, following the vein, which inclines at an angle of about 85 degrees. The ore streak, which was but eighteen inches thick at the surface, has expanded to four feet at the bottom of the shaft. It is an auriferous ore, yielding at the rate of \$25 in gold to the ton. This ore, which is being reduced, surrenders its gold freely under the simple mill process, the cost of extraction and milling being small. The position of this ground, as will be seen by an inspection of the map, is most favorable, and there is not a claim in the district that makes a better showing for the work done upon it than the California.

CALIFORNIA MINING COMPANY.

VIRGINIA MINING DISTRICT, NEVADA.

Office, Room 23, Nevada Block, San Francisco. George Wallace, president; C. P. Gordon, secretary; W. H. Patton, superintendent; George Wallace, R. H. Follis, S. Heydenfeldt, Cornelius O'Connor, Thomas H. Williams, directors. Annual meeting, third Wednesday in January. No. of shares, 540,000. No. of feet, 600. No. of dividends, 23. Total dividends, \$29,160,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The California has proved to be one of the most important mines on the famous Comstock Lode. The average value of the 127,540 tons of ore extracted during 1876, was \$105.07, which was only 73½ per cent. of the assay value. The total product of bullion during that year, was \$13,400,841, of which \$6,488,640 was gold and \$6,912,203 silver. The 217,432 tons of ore extracted during 1877, averaged \$88.49½ per ton, at 73 3-10 per cent. of assay value. The bullion produced amounted to \$18,924,850, of which \$9,386,745 was gold and \$9,538,105 was silver. The dividends paid to stockholders during the year, amounted to \$12,960,000.

During the past year a great deal of work has been done on the 1400-foot level, but owing to the crushing of timbers in drifts and crosscuts, the extent of the ore body was not fully ascertained.

A large working drift has been run in the solid west wall on the 1550-foot level, extending the whole length of the mine, connecting with the main shaft on the south and with the Ophir mine on the north. All the crosscuts will be continued to this drift, and from it access will be had to all parts of the level. This great work has been done, owing to the swelling and settling of the ground adjacent to the ore body. Winze No. 3, on this level, extends to the 1650-foot level, by which men and material are conveyed down to that and the 1600-foot levels.

The east clay of the ore body has been followed northeast from this No. 3 winze for one hundred and twenty feet. Alongside this clay is a seam of ore eighteen feet thick, and of fair quality. It is east of what has heretofore been considered the east clay of the lode. This valuable body of ore widens as developed to the north. The east wall of the ledge has not been reached on this level.

The sill floor of the 1600-foot level has been extended from the north to the south boundary of the mine. There is a space of fifty feet on the east, and nearly forty feet on the west, on winzes 5 and 6 on this level, that contain poor ore, but above and around it the ore is of good quality. A large drift on this level connects with the Ophir shaft, which affords good ventilation for a large part of the mine. The east wall of the lode has not been reached in any of the crosscuts in the northern four hundred feet on this level. All these crosscuts terminated in a solid body of poor quartz. The greatest extraction of ore has been on this level, where the ore body is very wide and heavy, and had to be worked rapidly, to avoid crushing of timbers and consequent great loss of ore.

On the 1750-ft. level the ore body is very wide, and the vein well defined, with regular walls. The greatest part of the ore is of too low a grade to pay for mining and milling. The good ore is confined to the east wall, and its greatest width does not exceed 28 feet.

In addition to the operations on the several levels, an immense expense has been incurred in maintaining the underground works in good condition, owing to the fact that, in working such large bodies of ore, the constant pressure of the ground surrounding the worked-out stopes is so great, that it requires a large force of men to keep the drifts and winzes in a condition for the extraction of the ore. This expense will hereafter be avoided by running all lateral drifts outside of the ore body, away from the swelling and settling ground.

The main shaft (the Consolidated Virginia) has been sunk to the 1850-ft. level. The heavy flow of water has continued throughout the year, and remains unabated—amounting to 43 to 45 inches, miners' measurement, about 10 inches of which issues from the C. & C. drift on the 1500-ft. level. The mine is, however, comparatively dry on all its levels. Each hoisting compartment of this C. & C. shaft is fitted with three cages, one over the other, by which means three tons are hoisted in each compartment, at each trip. Two of these cages are loaded at the same time, and are also unloaded simultaneously. The floors and tracks leading from the surface station to the ore-houses are laid one over the other, to correspond with the cages.

All the arrangements of this shaft, such as the main building, ore-houses, hoisting and pumping machinery, pumps, water-tanks, etc., have been kept in first-rate condition; and a large air-compressor, at an expense of \$25,000, has been added. A branch track of the Virginia and Truckee Railroad passes on two sides of the Company's works, and enables it to transport materials and ores cheaply and expeditiously. All the bullion is melted and assayed on the ground.

According to the report of the Secretary of the Company, the ores extracted and worked in 1877 (213,683 tons) cost an average of \$25.70 4-10 per ton. The gross product of the mine for that year was \$18,924,850.27. The labor for the extraction of each ton of ore averages \$3.57½. Hoisting it out of the mine costs 85 7-10 cents. Its reduction at the mills cost \$10.33 9-10 per ton, and is now reduced to \$9 per ton. The silver extracted during 1877 weighed 464½ tons. The gold weighed about 83 tons. The value of the gold was \$9,386,745.47, and of the silver \$9,538,104.80. The wages paid for labor during that year amounted to \$776,362, of which \$712,536 was to miners at \$4 per day, \$11,756.50 for laborers at \$3.50 per

day, and \$7,173 for mechanics at \$6 per day. The average wages of every man employed on the mine is \$4.33 6-10 per day.

The following table gives the list and amounts of dividends paid by this Company :

NUMBER.	DECLARED.	AMOUNT.	PER SHARE.	AMOUNT PAID.	TOTAL.
1876.					
First.....	May 8	\$2 on 540,000 shares.	\$ 2	\$1,080,000	
Second.....	June 8	" " " "	4	1,080,000	
Third.....	July 8	" " " "	6	1,080,000	
Fourth.....	Aug. 8	" " " "	8	1,080,000	
Fifth.....	Sept. 8	" " " "	10	1,080,000	
Sixth.....	Oct. 7	" " " "	12	1,080,000	
Seventh.....	Nov. 7	" " " "	14	1,080,000	
Eighth.....	Dec. 8	" " " "	16	1,080,000	\$3,640,000
1877.					
Ninth.....	Jan. 8	" " " "	18	1,080,000	
Tenth.....	Feb. 8	" " " "	20	1,080,000	
Eleventh.....	March 7	" " " "	22	1,080,000	
Twelfth.....	April 7	" " " "	24	1,080,000	
Thirteenth.....	May 7	" " " "	26	1,080,000	
Fourteenth.....	June 7	" " " "	30	1,080,000	
Fifteenth.....	July 7	" " " "	30	1,080,000	
Sixteenth.....	Aug. 7	" " " "	32	1,080,000	
Seventeenth.....	Sept. 7	" " " "	34	1,080,000	
Eighteenth.....	Oct. 6	" " " "	36	1,080,000	
Nineteenth.....	Nov. 7	" " " "	38	1,080,000	
Twentieth.....	Dec. 7	" " " "	40	1,080,000	12,960,000
1878.					
Twenty-first.....	Jan. 7	" " " "	42	1,080,000	
Twenty-second.....	Feb. 7	" " " "	44	1,080,000	
Twenty-third.....	March 7	" " " "	46	1,080,000	
Twenty-fourth.....	April 6	" " " "	48	1,080,000	
Twenty-fifth.....	May 7	" " " "	50	1,080,000	
Twenty-sixth.....	June 7	" " " "	52	1,080,000	
Twenty-seventh.....	July 8	\$1 " " "	53	540,000	
Twenty-eighth.....	Aug. 7	\$1 " " "	54	540,000	7,560,000
					\$29,160,000

CHALLENGE CONSOLIDATED MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; Thomas G. Taylor, superintendent; A. K. P. Harmon, J. D. Fry, William Sharon, J. H. Dobinson, C. L. Weller, trustees. Annual meeting, third Thursday in November. No. of shares, 50,000. No. of feet, 90. Shares per foot, 555 5-9. Listed on San Francisco Stock and Exchange Board.

CHAMPION MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 21, 419 California Street. H. Epstein, president; John Crockett, secretary; Lee H. Newton, superintendent; H. Epstein, A. P. Williams, R. G. Brown, John Wagner, Robert Harrison, trustees. Annual meeting, second Tuesday in July. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 666 $\frac{2}{3}$. Listed on San Francisco Stock and Exchange Board.

This mine was incorporated July 25th, 1878. Adjoins the Bodie on the south; has a two-compartment shaft down to the depth of 110 feet; has a well-defined ledge three feet in width, giving high assays. Work on this property will be pushed in a very vigorous manner, the management having on the ground a first-class 12-horse-power donkey engine, capable of sinking to a depth of 800 feet, and which has been already set up and commenced operations. In view of the developments made near by, a paying mine is almost sure to be opened up on this ground in a very short time, as it lies directly on the mineral belt that has so enriched the Bodie claim. The very position of this ground, even were no exploring work done, ought to invest it with great intrinsic value.

CHEROKEE FLAT BLUE GRAVEL COMPANY.

CHEROKEE FLAT MINING DISTRICT.

Office, Room 6, 318 Pine Street. E. B. Pond, president; J. W. Clark, secretary; Charles Waldyer, superintendent; E. B. Pond, H. E. Robinson, L. Veraria, H. Kozminsky, E. D. Morgan, trustees. Annual meeting, first Saturday in September. No. of shares, 31,200. No. of acres, from 600 to 700. No. of assessment, 39. Amount, 5c. Levied, April 17th, 1878. Total assessments, \$29,640.

The Cherokee Flat Blue Gravel Company own a valuable track of gravel-bed, located at Cherokee Flat, Butte County, California. This property adjoins the claims of the Spring Valley Company, which have been worked profitably for many years. As soon as satisfactory arrangements can be made for a water supply, this company will proceed to develop the ground held by it.

CHEROKEE MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; N. C. Hall, superintendent; A. K. P. Harmon, W. S. Hobart, Joseph Trench, W. E. Dean, Martin White, trustees. Annual meeting, last Thursday of June. No. of shares, 60,000. No. of feet, 544. Shares per foot, 110 2-5. Listed on San Francisco Stock and Exchange Board.

CHOLLAR-POTOSI MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; J. L. Requa, superintendent; A. K. P. Harmon, J. D. Fry, J. H. Dobinson, C. L. Weller, Alpheus Bull, Wm. Norris, A. P. Wade, trustees. Annual meeting, second Monday in July. No. of shares, 28,000. No. of feet, 1,400. Shares per foot, 20. No. of assessment, 15. Amount, \$5. Levied, Sep. 5, 1878. Total assessment, \$1,750,000. No. of dividend, 44. Amount, \$1. Declared, February 5, 1872. Total dividends, \$3,080,000. Bullion yield, \$14,677,031. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Chollar-Potosi holds the long stretch of the Comstock lying between the Hale & Norcross and the Bullion, constituting a sort of middle ground between the Gold Hill and the Virginia group of mines. The Potosi croppings were among the most prominent on the mother lode, and, as they made a fair showing of good ore, work was commenced here as early as the Fall of 1859. Two years later, Governor Blasdel put up a mill for reducing the ores from this ground, and which yielded such handsome profits that he was soon enabled to retrieve his fallen fortunes. From that date until quite recently this mine has yielded ore at the rate of about 150 tons per day, and which for a long time averaged \$40 to the ton. At a later period the ore here deteriorated somewhat, averaging not over \$18 or \$20 per ton, at which rates it held until some six months ago when it finally gave out, leaving the company without further reserves in their mine. During the year ending June 1st, 1877, there were extracted 39,439 tons of ore from this mine, the quantity raised the following year having amounted to but 13,201 tons.

During the past year, the tax on the ore yield of this mine for prospecting and repairs has been at the rate of \$3.84 per ton—the proportion contributed towards expense of the Chollar-Norcross-Savage, or combination shaft, having been at the rate of \$6.50 per ton—making a total on account of these two items of \$10.34 per ton. This heavy expenditure, coupled with diminished revenues, has, as a matter of course, rendered assessments necessary to keep the mine running. But these may well be borne, in view of the good history presented by this property, which has disbursed over three million dollars in dividends to the shareholders; and from the further fact, that a resumption of ore extraction is likely to occur at any moment. The Chollar main incline has now reached a depth of 1,785 feet, the entire sinking for the greater portion of the past year having been in hard granite. The incline engine has power to do the lifting for a further distance of 500 feet or more. In January last, the drift east on the 1,785-ft. level was connected with the new combination shaft, greatly promoting ventilation in both. This drift, which is 1,390 feet long, was for 125 feet in west-country rock and clay, the remainder being in vein material, affording evidence of proximity to ore at various points along it. Upon the completion of this drift, deep prospecting from the Chollar incline was suspended, except running the pump a small portion of the time to keep the lower works free from water. Further exploration of the ground in depth will hereafter be carried on from the combination shaft, the drift being meantime kept in repair for purposes of ventilation, which will be attended with but little expense.

THE CHOLLAR-NORCROSS-SAVAGE, OR COMBINATION SHAFT.

As the Chollar-Potosi Company were the prime movers in the inauguration of the above enterprise, a brief description of this work becomes proper in connection with these remarks upon their mine. In speaking of this shaft, the initial letters C. N. S. are, for the sake of brevity, frequently used instead of the full name. This work was projected and its construction commenced early in 1875. When it is considered that the dip of the Comstock is to the east, and that work through inclines is always prosecuted at a disadvantage, and with a loss of power besides that expended on the increase of distance; and, above all, that depth is now the great requisite to success on the Comstock, the wisdom of going nearly a mile to the east of the original croppings, and sinking a perpendicular shaft which shall at once overcome all these obstacles and the more readily gain the desired end, is apparent. The work has been commenced on a plan commensurate with the great objects to be attained. In its prosecution, the wisdom gained by the whole past is being applied. The site possesses all the advantages sought. It is central to the companies, convenient of access, and has all the dump-room that will be needed. It is connected with the Virginia and Truckee Railroad by a side track. The slope of the hill is taken advantage of in the construction of the building, and placing the machinery so that the hoisting engines are on a level with the sheaves, which are on the top of a wall of hewn stone, 30 feet in height, and carry the cable over to the center of the shaft. This is the largest shaft yet sunk on the Comstock. It has four compartments, the three hoisting compartments being each 5x6 feet, and that for the pumps 6x7 feet. These are being timbered with 14x14 mountain spruce, which outlasts other wood for such purposes. To construct this shaft requires an excavation about 9x30 feet. The character and quality of the permanent machinery placed at this shaft may be inferred from the following statistics of the pumping apparatus: The engine is a vertical compound of 700-horse power, and capable of

running a double column of 15-inch pumps, at least 4,000 feet. These pumps are equivalent to a single column of 18 inches. The engine is controlled by the Davy differential valve, and made to make one stroke in 15 minutes, or 12 strokes per minute, or any number of strokes between the two extremes, as may be required. The stroke is made in the same length of time, whether the engine be running fast or slow—the engine consuming no steam when not running. The attachment is direct to the bishop-head of the bob, thus doing away with all unnecessary friction and liability to break of intermediate gear. The initial cylinder is 32 inches in diameter, and has a stroke of 10 feet 10 inches. The expansion cylinder is 65 inches in diameter, and has 8 feet stroke. These cylinders are placed vertically, side by side, the attachment from the larger one being made nearer the shaft of the bob. The cost of this engine, equipped with its double columns of pumps, 2,000 feet, was \$400,000. The works are supplied with water by the Virginia and Gold Hill Water Company, through a 10-inch main. It is unnecessary to enlarge upon this, the greatest mining project of the age, which is calculated to reach and tap the Comstock 4,000 feet below the surface, and to go the full depth of a mile if necessary, in order to accomplish the purpose sought. That the project is feasible and warranted, no person familiar with deep mining on the Comstock can doubt.

The entire expenditure upon this shaft to date amounts to upwards of a million dollars, of which the following compose the more considerable items, viz: Machinery, pumps, etc., \$400,000; labor, tools and supplies, \$250,000; timber, lumber, etc., \$100,000; wood, \$40,000; foundations, \$25,000; a large sum in the aggregate having been paid out on account of buildings, reservoir construction, water, interest, taxes, insurance, etc. This shaft has now reached a vertical depth of 2,400 feet, and is being sunk at the rate of about three feet per day. At the 2,000-foot level the eastern country was passed through and the regular Comstock vein material entered, and in this the shaft is still continued. Water has been found to increase steadily with depth, coming in now at the rate of 150 tons per day. Heretofore it has been raised with skeets. But preparations are now being made to bring it up with pumps, the excavations for the pumps in the main shaft below the 1,600-foot level being in progress, and near completion, and in a short time the great iron tubes will be in place ready for service. On the above level the north drift is now being advanced at the rate of five feet per day towards the Sutro Tunnel, with which it is to be connected for drain purposes. When this connection is made and the pumps in position the water will be lifted no higher than the 1,600-foot level, being there emptied into the tunnel. So far, sinking has been carried on without air compressors or power drills, all of which will soon be required. Tolerable ventilation, even on the lower levels, has heretofore been secured through connections with the Chollar drift on the 1,700-foot level. All the machinery connected with this great pit is in perfect order and working well, having capacity for all duty required in sinking to a depth of 3,500 feet. It is likely that all operations in Chollar, Norcross and Savage will, within the year, be carried on through this shaft, these companies beginning already to realize in part the many advantages to be derived from its construction.

CHRISTY MILL AND MINING COMPANY.

HARRISBURG DISTRICT.

Office, 310 Pine Street. O. F. Giffin, president; Geo. R. Spinney, secretary; H. S. Lubbock, superintendent; O. F. Giffin, J. H. Wise, W. H. Graves, W. M. Lubbock, R. N. Graves, trustees. Annual meeting, third Thursday in September. No. of shares, 60,000. Bullion yield, \$200,000.

COLORADO RIVER COPPER AND GOLD MINING COMPANY.

EMPIRE FLAT, YUMA COUNTY, ARIZONA.

Office, Rooms 6 and 7, 211 Sansome Street. I. C. Bateman, president; H. Augustus Whiting, secretary; Joseph Richards, superintendent; I. C. Bateman, H. H. Allen, Oliver Smith, H. F. Smith, T. C. Lampe, trustees. Annual meeting, second Monday in May. No. of shares, 50,000. No. of feet, six mines of 1,500 feet each—total, 9,000 feet. Shares per foot, 5 5-9. No. of assessment, 1. Amount, \$12,500. Levied, April 11th, 1878. Total assessments, \$12,500. Bullion yield, \$808.

There is a five-stamp mill on this mine, which has just commenced work, the production to date consisting of one bar of gold, of the value above stated.

COMANCHE GOLD MINING COMPANY.

BENTON, MONO COUNTY, CALIFORNIA.

Office, 37 Nevada Block. Geo. B. McAneny, president; W. W. Traylor, secretary; Al Morgan, superintendent; Geo. B. McAneny, W. M. Lent, Jno. F. Boyd, J. B. Fargo, E. McGary, trustees. Annual meeting, first Monday in May. No. of shares, 50,000. No. of assessment, 1. Amount, 50 cents. Total assessment, \$25,000. No. dividend, 4. Amount, 20 cents. Declared October 20, 1877. Total dividend, \$47,500. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is one of a number belonging to the same company. It is an old location, but was purchased by the present company about two years ago, and was incorporated in 1877. Its ores are silver and copper, and produce what is known on this market as base bullion, ranging from 350 to 800 parts of silver to the 1,000. It produces no gold. This bullion is all purchased by European smelters and refiners. The company have first-class hoisting and pumping works, and extract their ores by means of a two-compartment shaft, sunk to the depth of 400 feet, in which there are drifts every 70 to 100 feet.

COMANCHE GRAVEL MINING COMPANY.

COMANCHE, CALAVERAS COUNTY, CALIFORNIA.

Office, Room 6, 240 Montgomery Street. R. D. Hopkins, president; A. W. Robinson, secretary; Hiram Peasley, superintendent; R. D. Hopkins, S. W. Howland, E. F. Dennison, J. Q. Garfield, A. W. Robinson, trustees. Annual meeting, April 29. No. of shares, 50,000. No. of feet, one mile on the river.

CONCORDIA MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; Wm. M. Stewart, Wm. F. Herrin, Sherywood F. Gorham, Frank Pugliabue, F. K. Bechtel, trustees. Annual meeting, first Monday in March. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

This mine is located in Bodie District, next to the Good Hand and Red Cloud. It contains 1,500 feet, and has been developed to the depth of 112 feet, or thereabouts, on the incline. Prospecting is continuing with good indications of valuable developments.

CONFIDENCE SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY NEVADA.

Office, 414 California Street. R. F. Morrow, president; R. Wegener, secretary; Robert F. Morrow, George W. Beaver, J. H. Dobinson, A. K. P. Harmon, L. S. Adams, trustees. Annual meeting, second Friday in November. No. of shares, 24,960. No. of feet, 130. Shares per foot, 192. No. of assessment, 11. Amount, 50c. Levied, April 10th, 1878. Total assessments, \$256,320. Total dividends, \$78,000. Declared, May 1st, 1865. Bullion yield, \$910,618.36. Listed on San Francisco Stock and Exchange Board.

CONSOLIDATED AMADOR MINING COMPANY.

AMADOR COUNTY.

Office, 426 California Street. David D. Colton, president; Frank B. Latham, secretary; David T. Davies, superintendent; D. D. Colton, E. J. Crane, M. S. Latham, J. D. Fry, Chas. E. Green, trustees. Annual meeting, first Monday in February. No. of shares, 30,000. No. of feet, 4,989. No. of dividend, 32. Amount, 20c. per share. Declared July 9, 1878. Total dividend, \$6,000. Bullion yield, \$1,334,530. Listed on San Francisco Stock and Exchange Board.

CONSOLIDATED DORADO MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.—Incorporated, May 27, 1878.

Office, Room 4, 309 California Street. John McDougall, president; Charles A. Harris, vice-president; Pacific Bank, treasurer; J. M. Buffington, secretary; Phillip Corcoran, superintendent; John McDougall, Charles A. Harris, C. H. Silliman, John Wilmshurst, Phillip Corcoran, trustees. Capital stock, \$10,000,000. No. of shares, 100,000. No. of feet, 3,900. Shares per foot, 26. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This company own and are developing the Baldwin, Holmes No. 1 and Holmes No. 2, contiguous mining claims, deeded to the company by the original locators. These claims are located in the most promising portion of the Gold Hill district, being entirely surrounded by active and well-known mining enterprises. On the northeast corner the Overman company are sinking their new shaft, which is the largest on the Comstock; on the east the East Alta company are making arrangements to prospect on an extensive scale; and the well-known Succor and Silver Hill mines bound this property on the south; the Alta and Benton Con. are but 200 feet distant on the west. The three-compartment shaft on the Baldwin is in good easy working ground of a favorable character, being in ledge matter giving good assays. Ample hoisting works and machinery have been erected, capable of thoroughly developing the mine. The control is in the hands of capitalists and men of large business experience, recently from New Orleans. They have set aside as a working capital 3,500 shares of the capital stock.

CONSOLIDATED IMPERIAL MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; A. C. Hamilton, superintendent; A. K. P. Harmon, J. D. Fry, J. H. Dobinson, C. L. Weller, Alpheus Bull, William Norris, A. P. Wade, trustees. Annual meeting, first Wednesday in May. No. of shares, 500,000. No. of feet, 468. Shares per foot, 1,068 $\frac{3}{4}$. No. of assessments, 6. Amount, 20c. Levied, April 9th, 1878. Total assessments, \$675,000. Bullion yield, \$126,287. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Consolidated Imperial now embraces all the claims between the Yellow Jacket and Bullion, except the Confidence and Challenge. It includes the Imperial, 183 $\frac{3}{4}$ feet; Bacon, 65; Empire, 75; Eclipse, 70; Trench, 20; Bowers, 20; Consolidated Gold Hill Quartz, 3 $\frac{1}{4}$. This consolidation was effected April 1st, 1876, at which time the capital stock was increased to its present amount. All of the above locations have yielded more or less ore, which has been taken from near the surface, and along the line of croppings. The Imperial and Empire ground has been prospected by means of a vertical and incline shaft, sunk to a depth of 2,400 feet, and much drifting and crosscutting carried on in the various levels opened above. The west cross-cut, No. 3, on the 2,400-foot level, has lately entered some fine-looking quartz mixed with porphyry. Cutting into this formation released so much water that, with only small donkey pumps to keep down the flow, it was deemed advisable to suspend work at this point for the present. The appearance of the rock exposed, justifies the hope that ore will soon be encountered in that direction. The face of the east drift, on the same level, is being advanced in vein matter of a promising character, while the north drift on this level, running in Alpha ground,

is in quartz mixed with clay and porphyry—the prospects on this level being on the whole very cheering. Many of the levels in this mine have been connected by incline winzes, which have served to prospect the ground and promote ventilation. Through these various passages and the connection established with the Yellow Jacket mine, on the 2,400-foot level, the lower works of the Imperial are cool and comfortable, and everywhere free from foul air. Recently, the main shaft of this mine has been retimbered for a distance of eight hundred feet, all the defective portions of the machinery having been overhauled or replaced by new. As the mine makes a good deal of water, over one hundred thousand gallons every day, the pumping apparatus has also required extensive repairs and additions, the whole being now in excellent order. The machinery here is, in fact, first-class, while the prospects of the company are full of promise, the several claims embraced in the consolidation having, in times past, been among the most prolific on the Comstock Lode.

CONSOLIDATED VIRGINIA MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 26 and 27, Nevada Block, 309 Montgomery Street. Charles H. Fish, president; A. W. Havens, secretary; W. H. Patton, superintendent; Charles H. Fish, George Wallace, S. Heydenfeldt, George R. Wells, Cornelius O'Connor, trustees. Annual meeting, second Thursday in January. No. of shares, 540,000. No. of feet, 710. Shares per foot, .604. No. of assessments, 15. Levied, June 11, 1873. Total assessments, \$474,600. No. of dividends, 48. Amount, \$540,000 (\$1). Declared, June 7th, 1873. Total dividends, \$41,040,000. Bullion yield, \$59,613,961.30. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, California Stock Exchange Board.

The Consolidated Virginia mine passed into the present management January 11th, 1872. For five years, from 1867 to 1872, a company worked the ground all the time, expending \$161,340.41 upon the property without realizing one dollar in return. At last it was forced to give way. The new management expended \$277,150.12 before it yielded them anything. It was a stubborn fight against the heat and barren porphyry—a steady pouring out of gold upon a hope, which continued altogether eight years, and which would have been abandoned in any other country but this, and by any other class of men in the world except Nevada miners. The old stock (only 108,000 shares) was worth but \$2 per share, and some who perforce accepted it for services rendered, bewailed their hard fortune. Since then, it has made them richer than they ever dreamed of being; and their word is held in great estimation because of their shrewdness in purchasing Bonanza Stocks when they were very low. At last, in a drift which was run from the Gould & Curry shaft, through the Best & Belcher mine into the Consolidated Virginia, the crest of the bonanza was cut. Explorations followed, and the more work that was done the more ore was exposed, until at length, in the Autumn of 1874, it was fully revealed that an ore deposit had been discovered, exceeding in extent and richness anything ever before found in a mine.

The fame of the Big Bonanza has, during the past four years, been spread throughout the civilized world. History has been searched in vain for the record of the discovery of a mineral deposit of such magnitude and richness. The developments and unprecedented yield of the Consolidated Virginia Mine have demonstrated to the world that neither the treasures of the Duke of Monte Cristo, nor the wealth of the diamond-gemmed caves of Golconda, are to be compared in value with this part of the Comstock. When, nearly four years ago, the local papers of Virginia City began to give partial accounts of the extent and richness of the ore body which was being developed in the Consolidated Virginia, men were incredulous. They could not get a rational conception of the millions which such a deposit contained, and refused to believe in its existence. One mining expert after another visited the mine and were shown through the levels. They went away and were compelled to give but partial accounts of what they had seen, for fear of being disbelieved if they told only half the truth. And even now there are thousands in the East and Europe who cannot be brought to a realizing sense of what has been proved to exist there. Still the problem was simple of solution, and the managers gave the public every opportunity of solving it. The Big Bonanza, so far as its extent was known, was cut up by drifts, crosscuts and winzes, into regular cubes, measuring 100 feet each way. It is well known that thirteen cubic feet of ore make a ton. Average assays were made of each cube, and hence the value of the deposit was ascertained as low down as the cubes extend. The statements made by the managers and visiting experts have been fully verified, and thousands in this country and in foreign lands who believed in the honesty of the statements made, and the integrity of the management, are to-day enjoying fortunes from moderate to princely, as the result of their early investment. If the stock reached a figure beyond its intrinsic value, the fact may be attributed to the excitement of speculation, and not to any misstatements on the part of those who developed the mine and dealt out the stock. For at all times, and under all circumstances, the fullest and frankest investigation was invited. The portions of the cubes which have thus far been stoped out, have fully verified by their returns, the calculations made of their value.

On the 26th day of October, 1875, Virginia City was visited by a terrible conflagration, which swept away nearly one-half of the city, destroying the fine and extensive hoisting works and buildings of the Consolidated Virginia mine, together with its splendid 60-stamp mill, and a vast amount of supplies of various kinds. The (then) President of the mine, Mr. Edward Barron, in his annual report, under date of December 31, 1875, said:

“This misfortune compelled the stoppage of nearly all underground work and ore extraction,

and necessitated the cessation of bullion shipments until the hoisting works and other necessary buildings could be replaced. This has been done, and new works and buildings, superior to those destroyed, were erected in the short space of two months. To the great executive ability and indomitable energy of the Superintendent, Mr. James G. Fair, you are indebted for so early a replacement of the numerous and extensive buildings necessary to the proper working of the mine; and when the many and formidable obstacles which had to be overcome are taken into consideration, too much praise cannot be awarded."

The annual report of the Superintendent, Col. James G. Fair, of even date with the foregoing, said:

"The entire hoisting works, with ore house, have been rebuilt on an enlarged scale, with many improved conveniences in the various departments. A two story building, 100 feet by 50 feet, is in the process of erection, to be used for the assay and bullion department, and it is now about one-half completed. When finished there will be room and facilities for melting and assaying \$5,000,000 of bullion per month."

"A large extent of ground around and in the vicinity of the hoisting works has been purchased to give ample space for the storage of wood, timber and mine materials. By the acquisition of this ground the hoisting works now stand in a comparatively isolated situation, so that there will be but little danger from any fire except that which might originate on our own premises."

"For security against all fires, the works are surrounded by hydrants, with a good supply of fire hose, and there is an ample supply of water under a heavy pressure. I will also add that the City of Virginia is constructing a perfect system of water works. These works will surround us and give additional protection against fire."

"The Virginia and Truckee Railroad encircles us on three sides, so that our mine supplies are conveniently landed on the west, or upper side, and our ore is expeditiously shipped from the east, or lower side of the works."

"At the C. & C. shaft, buildings complete in every respect have been erected, and machinery for pumping and hoisting has been put in place and is now in full operation. In addition to the main building there is a blacksmith shop, a rope house, two large carpenter shops and one machine shop. The carpenter shops are supplied each with an engine and machinery—one of these shops being intended for the use of the Consolidated Virginia mine, and the other for the California mine. The machine shop is fitted up with engines, lathes, tools, etc.—one side of which is for the use of the Consolidated Virginia mine, and the other side for the California mine."

"A large area of ground immediately surrounding the site of this shaft has been secured, having been purchased at a heavy outlay. This shaft is situated 1,040 feet east of the Consolidated Virginia shaft."

The following extracts from the annual report of the President, Mr. Charles H. Fish, dated January 1, 1878, shows the total amount of bullion produced up to that time:

	Gold.	Silver.	Total.
1873	\$ 314,288.68	\$ 331,293.49	\$ 645,582.17
1874	2,063,438.13	2,918,045.92	4,981,484.05
1875	7,035,206.54	9,682,188.22	16,717,394.76
1876	7,378,145.76	9,279,504.11	16,657,649.87
1877	6,270,518.68	7,463,500.39	13,734,019.07
			<hr/>
First half of 1878			\$52,736,129.52
			6,877,831.78
			<hr/>
Total			\$59,613,961.30

Inventory of property at Virginia City:

CONSOLIDATED VIRGINIA MINING COMPANY.		
Real Estate		\$ 35,000.00
Hoisting Works		25,000.00
Assay Office and Superintendent's Office		60,000.00
Machinery		230,000.00
Supplies		19,988.51
Assay Supplies		1,069.89
		<hr/>
Total		\$371,058.40
C. AND C. SHAFT.		
Real Estate		\$ 25,000.00
Hoisting Works, Pumps and Machinery		320,000.00
Supplies		29,526.54
		<hr/>
Total		\$374,526.54

The work of re-timbering the shaft was commenced early this Spring, and the hoisting of ore necessarily almost entirely discontinued. The July and August dividends were in consequence passed.

The Consolidated Virginia and California joint shaft has been sunk to the depth of 2,000 feet, and a station set preparatory to opening the 1,950-foot level. The heavy flow of water has continued throughout the year, and remains unabated. This heavy flow of water, amounting to from 43 to 45 miners' inches, all comes into the shaft at a point 37 feet above the bottom of it, with the exception of about 10 inches that issues from the C. & C. drift, on the 1,500-foot level. The bottom of the shaft is now dry, and in very hard blasting rock.

Each hoisting compartment of this shaft is fitted with three cages, one over the other, which enables us to hoist three tons each trip in each compartment. A fourth cage is in readiness to be added to each compartment whenever required. Two of these cages are loaded at the same time, and they are also unloaded simultaneously, as the floors and tracks leading from the surface station to the ore houses are laid one immediately over the other, corresponding to the height and position of the cages.

All the appurtenances to this shaft, such as the main building, the ore houses, the hoisting and pumping machinery, the pumps, pump bobs, water tanks, etc., have not deteriorated in condition since my last annual report, but have rather been made more complete by such additions and changes as circumstances required; one of which is a large new air compressor, which has been constructed and put in place at a cost of at least \$25,000. Everything connected with this shaft has been constructed on a scale and in a manner commensurate with the large future requirements of the two mines. A branch track from the Virginia and Truckee Railroad passes on two sides of the works, in close proximity to them, and this enables us, in the most convenient and expeditious manner, to land wood, timber and other mine supplies, and to ship to mills the ore which is raised through this shaft; the former being landed on the upper side, and the latter being shipped from the lower side of the works.

The assay department, which has been in operation for nearly two years, has fulfilled the highest expectations as to its capacity for work and for economy in expense. In it has been melted and assayed, all the bullion which has been produced from this mine and from the California mine; and in the same time 40,484 assays of ore samples have been made for both mines.

The mine has disbursed in dividends the sum of \$41,040,000, as follows:

NUMBER.	DECLARED.	AMOUNT.	PER SHARE.	AMOUNT PAID.	TOTAL.
1874.					
First	May 7	\$3 on 108,000 shares.	\$ 3	\$ 324,000	
Second	June 6	" " "	6	324,000	
Third	July 7	" " "	9	324,000	
Fourth	August 7	" " "	12	324,000	
Fifth	September 7	" " "	15	324,000	
Sixth	October 7	" " "	18	324,000	
Seventh	November 7	" " "	21	324,000	
Eighth	December 7	" " "	24	324,000	
					\$2,592,000
1875.					
Ninth	January 7	" " "	27	324,000	
Tenth	February 6	" " "	30	324,000	
Eleventh	March 6	\$10 " " "	40	1,080,000	
Twelfth	April 7	" " "	50	1,080,000	
Thirteenth	May 7	" " "	60	1,080,000	
Fourteenth	June 7	" " "	70	1,080,000	
Fifteenth	July 7	" " "	80	1,080,000	
Sixteenth	August 7	" " "	90	1,080,000	
Seventeenth	September 7	" " "	100	1,080,000	
Eighteenth	October 7	" " "	110	1,080,000	
Nineteenth	November 5	" " "	120	1,080,000	
Twentieth	December 4	" " "	130	1,080,000	
					11,448,000
1876.					
Twenty-first	January 5	" " "	140	1,080,000	
Twenty-second	February 5	" " "	150	1,080,000	
Twenty-third	March 4	" " "	160	1,080,000	
Twenty-fourth	April 4	\$2 on 540,000 shares.	34	1,080,000	
Twenty-fifth	May 4	" " "	36	1,080,000	
Twenty-sixth	June 5	" " "	33	1,080,000	
Twenty-seventh	June 30	" " "	40	1,080,000	
Twenty-eighth	August 4	" " "	42	1,080,000	
Twenty-ninth	September 4	" " "	44	1,080,000	
Thirtieth	October 4	" " "	46	1,080,000	
Thirty-first	November 3	" " "	48	1,080,000	
Thirty-second	December 4	" " "	50	1,080,000	
					12,960,000
1877.					
Thirty-third	May 7	" " "	52	1,080,000	
Thirty-fourth	June 7	" " "	54	1,080,000	
Thirty-fifth	July 7	" " "	56	1,080,000	
Thirty-sixth	August 7	" " "	58	1,080,000	
Thirty-seventh	September 7	" " "	60	1,080,000	
Thirty-eighth	October 6	" " "	62	1,080,000	
Thirty-ninth	November 7	" " "	64	1,080,000	
Fortieth	December 7	" " "	66	1,080,000	
					8,640,000
1878.					
Forty-first	January 7	" " "	68	1,080,000	
Forty-second	February 7	" " "	70	1,080,000	
Forty-third	March 7	" " "	72	1,080,000	
Forty-fourth	April 6	" " "	74	1,080,000	
Forty-fifth	May 7	\$1 " " "	75	540,000	
Forty-sixth	June 7	" " "	76	540,000	
					5,400,000
					\$41,040,000

CONSOLIDATED PACIFIC MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 507 Montgomery Street. J. G. McClinton, president; F. E. Luty, secretary; C. W. Mills, superintendent; J. G. McClinton, Samuel L. Theller, E. B. Dickinson, E. F. Preston, Nathan Atkinson, trustees. Annual meeting, third Saturday in August. No. of shares, 60,000. No. of feet, 1,400. Shares per foot, 42 6-7. Listed on San Francisco Stock and Exchange Board.

This property was, until recently, owned by Judge J. G. McClinton, who held it for over thirteen years, the title being of the most perfect kind. The claim is 1,400 feet long by a width of 300 feet, and covers four distinct lodes, viz: The Pacific No. 1, the Pacific No. 2, the Pacific No. 3 and the Sharon lode, with their respective extensions south. Its location is most favorable, being contiguous to the famous Bodie, Bulwer and Belvidere claims. It is one of the four producing mines of the district. Considerable work has already been done on this property, and further developments will be vigorously pushed forward. On Pacific No. 1 lode, the most easterly of the series, a shaft 50 feet deep has been sunk, showing good ore, the vein varying from eighteen inches to three feet in thickness throughout its entire depth. The ground has been stoped from this shaft northerly to the northern boundary of the claim; also south to a distance of 25 feet. The ore here produced milled from \$40 to \$200 per ton. On Pacific No. 2 lode a tunnel, commencing about 300 feet south from the northern boundary of the claim, has been run northerly on the vein 215 feet. This tunnel, which connects with an air shaft located 125 feet from its mouth, is now being run 20 feet further north, at which point a crosscut to Pacific No. 1 lode will be made. On Pacific No. 3 lode some surface cuts have been made, showing a fine vein of low grade ore. On the Sharon lode a prospecting shaft is now being sunk about 70 feet from the northern boundary, which, at a depth of only ten feet, shows very good milling ore. The main working shaft has been located between Pacific No. 1 and Pacific No. 2 lodes, 535 feet from the northern boundary of the claim, and is now being pushed rapidly downward. All the four lodes will be worked through this shaft. Ore will continue to be extracted through the tunnel on Pacific No. 2 as at present. This main shaft is located about 300 feet westerly from the Bodie shaft. As the ground is easily worked, operations can be advanced rapidly, and no trouble from water need be apprehended. About 40 tons of ore now at the mouth of the tunnel assay \$35.46 gold, and \$1.56 silver per ton. Ore taken from the shaft assayed \$65, and some taken from the open cuts in the northern end of the veins assayed from \$400 to \$800 per ton. It is safe to say that the Consolidated Pacific will eventually take rank among the best mines in the district, and that it will, in a very short time, pass from the list of mere self-sustaining to that of the dividend-paying mines of Bodie.

CROESUS GOLD MINING COMPANY.

AMADOR, AMADOR COUNTY, CALIFORNIA.

Office, 328 Montgomery Street. W. Seawell, president; T. B. Wingard, secretary; M. M. Culbert, superintendent; W. Seawell, B. R. Zantinger, trustees. Capital stock, \$5,000,000. No. of shares, 50,000. Shares per foot, 33½. No. of feet, 1,500.

CROWN POINT GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 10, Cosmopolitan Hotel. Charles L. Weller, president; James Newlands, secretary; Samuel L. Jones, superintendent; Charles L. Weller, James H. Dobinson, A. K. P. Harmon, W. S. Hobart, John P. Jackson, trustees. Annual meeting, first Monday in June. No. of shares, 100,000. No. of feet, 600. Shares per foot, 166½. No. of assessment, 35. Amount, \$100,000. Levied, Sep. 13, 1878. Total assessments, \$1,953,370. No. of dividend, 50. Amount, \$2 per share. Declared January 8, 1875. Total dividends, \$11,898,000. Bullion yield, \$29,753,119.48. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Crown Point lies next north of the Belcher, and is separated by the Kentuck from the Yellow Jacket. The works occupy the outlet to Crown Point Ravine, over which the Virginia and Truckee Railroad crosses on a trestle-work bridge. Wood is dumped from the track to the level of the top of the works, while timber and other supplies are delivered from a side track to the main buildings, over which also the ore is shipped for reduction. It is one of the Comstock mines that has in times past made a large and profitable production. Pay ore was found as near the surface as the 160-foot level, but the main body was struck on the 400-foot level in the east ledge, and from this the millions have been taken which have been distributed in dividends. Since the exhaustion of this ore body several years ago, the product of bullion has been much diminished, the amount turned out last year having been less than was made the preceding year, by \$144,000, but the expenses were reduced meantime in a much greater ratio, having been \$372,863 less during the year ending with June 1878 than they were the year before. The 2,000-foot level of the mine has been prospected extensively, and with satisfactory results, although the work has been at some points much retarded on account of the great heat and foul air. The quartz at this depth is livelier, and freer from porphyry, and yields better assays, while the stratification is more regular than was the case on the 1,700-foot level, the last one prospected above. The straightening up in the lower levels of the lode walls to their normal position, affords further and almost infallible evidence of proximity to another ore body. From the 2,000-foot level a winze has been put down to the depth of 2,300 feet, being 525 on the slope below the 2,000-foot level. From the bottom of this winze a drift is being run south to connect with a drift coming north from the 2,360-foot station of the Belcher drain shaft, which

connection is nearly made, and will, when effected, greatly promote ventilation, and facilitate the drainage of both mines, this shaft being sunk by the two companies on joint account. A drift is also being driven north from the bottom of this winze along the course of the vein to the northern boundary of the mine. This is also in a state of forwardness, having been advanced latterly at the rapid rate of eight feet per day, and when completed, a series of cross-cuts will be run on the vein to determine its value on this level. The amount of exploration done in this mine the past year has been large, over 2,700 feet of cross cuts and new drifts having been run, 1,100 feet of raises having been made and winzes sunk, the old drifts cleaned out and repaired, having reached a lineal extent of 1,800 feet. The shaft and incline have meantime been kept in good repair, large sections having been retimbered, much new machinery has been added to the mine, including a new air-compressor, an air-hoisting engine, etc., the entire disbursements of the company for the year having reached \$575,391. The company own the Rhode Island Mill, a large and well appointed structure, which for the past year has been rented out for \$1,500 per month. When cross cutting comes to be prosecuted on their lower levels, the company confidently expect that the services of this mill, and most likely others besides, will be required for the reduction of their own ores.

From the old workings on the upper levels of the mine there were extracted during the past year 7,829 tons of ore, which yielded \$133,500. This production, notwithstanding the ore was of rather low grade, has been attended with considerable net profit. As the working of the Crown Point, including pumping, will soon be done through the shaft put down by this company and the Belcher, current expenditures will be materially curtailed thereafter, it being estimated that the cost of running the company's machinery will then be reduced one-half. This shaft, which has now reached a depth of 2,360 feet, is a splendid piece of work, being substantially timbered and supplied with first-class hoisting works.

CROWN POINT RAVINE GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 4, 309 California Street. J. J. Hucks, president; J. M. Buffington, secretary; J. H. Maynard, J. J. Hucks, Geo. Hearst, James R. Lee, Peter Mulloy, trustees. Annual meeting, first Monday in September. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50. No. of assessments, 5. Amount, 10 cents. Levied, November 24, 1877. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The Crown Point Ravine mine lies west of and adjoining the Yellow Jacket and Kentuck, and is on the well-known West Ledge. This ledge is found to be somewhat compressed where it is intersected by the ravine from which the mine takes its name, but rapidly widens out when a little distance is gained, preserving all its original characteristics. The claim reaches from the ravine 1,200 feet north. A shaft has been sunk near the ravine 300 feet, from which a drift has been run 500 feet, cutting the ledge, which is broad and well-defined, carrying a clean, lively quartz, with streaks of high grade ore, and being lined with a heavy clay selvage, denoting its perfect and permanent character. This 500-foot drift, which was all in vein matter, cut the ledge when in a distance of 240 feet west from the shaft. From the 300-foot station a lateral drift was run south 175 feet. From this drift three cross-cuts were carried through the ledge which ranged from 12 to 15 feet in thickness. The lode matter here consisted of an excellent quartz, which everywhere gave low assays, some of the richer streaks assaying from \$50 to \$300 per ton, the vein material here being of precisely the same kind as that found in the Crown Point and Yellow Jacket mines at corresponding depths. This stratum of mineral-bearing quartz lies next and under the easterly wall of the lode. On this level a drift was also pushed west 240 feet, when the water came in so strong as to force a cessation of work at that point. This drift failed to reach the west wall of the lode, nor did it encounter the black dike so often met with, and sometimes so troublesome in other mines on the Comstock. With a view to recommencing work here, a pump has been ordered, and is now in course of construction, and which, when completed, will be at once brought into service. This pump will have capacity to handle all the water the mine will be likely to make until a very great depth is reached. In April last the company put up steam-hoisting works, after which the work of sinking the main shaft, which had been suspended, was resumed. The shaft will be sunk to a depth of 400 feet, when further crosscutting will be done, in the confident expectation that a good body of pay ore will be found on that level, as the lode has shown a constant tendency to expansion with downward exploration, also improving in depth, with many rich stringers making in from both sides. The position of this ground, with relation to the Crown Point and other standard mines, gives it importance independent of the good ore indications developed in its lower workings. This property is held largely by San Francisco investors who have unbounded faith in its future.

COSMOPOLITAN MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, Room 2, Nevada Block. Geo. S. Dodge, president; M. Landers, secretary; Jno. F. Egan, superintendent; Geo. S. Dodge, A. W. Rose, Jr., Jno. Landers, Butler Burris, Geo. W. Brittan, trustees. Annual meeting, October 11th. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 5. Total assessment, \$70,000. Bullion yield, \$8,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

This mine is situate near the Occidental, and was located in 1870. The company have a United States patent for their ground. It is worked by a tunnel, which is at present about

2,000 feet in length, with numerous lateral drifts and upraises, some of the latter reaching to the surface, and affording good ventilation. They have expended nearly \$73,000 in developing this mine, which is half a mile east of the Comstock, and claims to have an ore-body quite distinct from that lode.

COSO CONSOLIDATED MINING COMPANY.

INYO COUNTY.

Office, 419 California Street, room 17. J. L. Armstrong, president; W. H. Allen, secretary; J. L. Armstrong, A. H. Yeazell, H. A. Sweet, A. C. Wightman, trustees. Annual meeting, 11th of June. No. of shares, 100,000. No. of assessment, 6. Amount, 10c. Listed on San Francisco Stock and Exchange Board, California Stock Exchange Board, and Pacific Stock Exchange.

COUPON MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, 80 Nevada Block. John B. McGee, president; Daniel Buck, secretary; Wm. T. Robinson, superintendent; John B. McGee, Tod Robinson, E. M. Hall, C. H. Maddox, A. J. Blair, trustees. Annual meeting, last Tuesday in November. No. of shares, 100,000. No. of feet, 1,500x600.

DARDANELLES CONSOLIDATED GRAVEL MINING COMPANY.

FOREST HILL, PLACER COUNTY, CALIFORNIA.

Office, Room 13, 328 Montgomery Street. T. C. Wedderspoon, president; Wm. Letts Oliver, secretary; Joseph McGillivray, superintendent; A. Borland, T. C. Wedderspoon, J. M. Haven, W. L. Oliver, J. McGillivray, trustees. No. of shares, 30,000. No. of acres, 312. Bullion yield, \$3,000,000 to \$4,000,000.

This is one of the historical mines of the State. Commencing in 1853, it was worked for a number of years as a drift claim, during which there was taken from it nearly \$2,000,000, the profits on which enriched the several owners. It was afterwards worked by the hydraulic process, but with the inefficient appliances and in the imperfect manner incident to the times. Appurtenant to the estate is a water right and ditch, which materially enhance its value. A little over one year ago, this property changed ownership, passing into the hands of the present company, who placed it under the management of Mr. Joseph McGillivray. This gentleman, who brought into the company's service a long and successful experience as a hydraulic miner, proceeded, with his accustomed energy and good judgment, to repair, extend, and otherwise improve the property. The ditch was cleaned out along its entire length, greatly increasing its capacity for the delivery of water. Two iron pipes, each 22 inches in diameter, were laid down for carrying water into the mine. Drifts were run, and immense quantities of auriferous gravel broken up with powder-blasts, in readiness for washing when the rainy season set in. Mr. McGillivray, having made a satisfactory production during the past working season, has, since it ended, employed a considerable working force in making further needed improvements on the property, and putting the mine in the best possible condition for the next washing season, now close at hand, and during which he expects to make a much larger clean-up than he did last year. The gravel in this claim is exceptionally rich, and there is enough of it to last a great many years under the most exhaustive system of washing practicable. Having their own water, this company avoids the heaviest item of current expenditure in this department of mining. With their entire property in good repair, and their mine well opened and equipped, the net earnings of this company ought to be large in the future.

DAY SILVER MINING COMPANY.

JACK RABBIT, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. Delos Lake, president; J. W. Pew, secretary; J. B. McGee, superintendent; M. J. McDonald, Delos Lake, E. Eyre, C. B. Gould, H. A. Fox, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of assessment, 2. Amount, 30c. Levied, Sept. 19, 1878. Total assessment, \$55,000. Bullion yield, \$77,477.58. Listed on San Francisco Stock and Exchange Board.

The district in which this property is located, and which is comparatively new, lies in Eastern Nevada, not far from the western boundary of Utah Territory. It has become quite conspicuous for the rich silver-bearing deposits lately discovered within its borders, the most of these consisting, like those in the Day mine, of smelting ores. The attempts made to mill these ores have resulted in extracting only about 65 per cent. of the silver they contain. The Day Company have therefore determined to put up a smelting furnace, at a point about six miles from their mine, where they have ample water for the purpose, wood being also in good supply in the neighborhood. This mine has been quite extensively opened up by means of tunneling, winzes, stopes, drifts, etc., some 1,200 tons of ore having been extracted, and much more developed in the mine. The bullion product to date exceeds \$80,000, and would have been much larger but for certain troubles between the management and the shareholders, causing for a time a suspension of active operations. The causes of this misunderstanding having been removed, the company, once more acting in accord, have determined to renew operations on their mine, which will henceforth be prosecuted on a more extensive plan than before. In the election of Mr. John B. McGee as Superintendent of their mine, the Directors have consulted the best interests of the shareholders—this gentleman being noted alike for discretion and energy, having already engineered several mining enterprises in Eastern and Central Nevada to a great success. The path of this company being now cleared of obstructions, is pretty sure to lead to an unwonted but well-deserved prosperity.

DAYTON GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; John Van DeWater, superintendent; A. K. P. Harmon, W. S. Hobart, Martin White, B. Peart, C. T. Bridge, trustees. Annual meeting, last Thursday in July. No. of shares, 100,000. No. of feet, 1,600. Shares per foot, 62½. No. of assessments, 10. Amount, 25c. per share. Levied, April 2, 1873. Total assessments, \$734,205. Bullion yield, \$241,530. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Dayton may be regarded as a representative mine. It was located and worked by individuals as far back as 1860, and yielded, from on and near the surface, large quantities of pay ore. The present incorporation was formed in 1872. At first a tunnel was put in from the north, which cut the ledge 500 feet from the entrance. It carried quartz in seams and ore in bunches. The present shaft was subsequently commenced. A drift has been run on the 300-ft. level to near the south end of the claim, laying the vein bare ready for crosscutting. It was from this part of the mine that the ore was originally taken. The Dayton has one of the broadest and strongest ledges on the Comstock.

DE FREES MILL AND MINING COMPANY.

TUSCARORA DISTRICT.

Office, Room 12, 310 Pine Street. George L. Bradley, president; Thomas E. Atkinson, secretary; J. B. Dayton, superintendent; G. W. Grayson, M. Mayblum, George L. Bradley, Archie Borland, Thomas E. Atkinson, trustees. Annual meeting, October 20. No. of shares, 100,000. No. of feet, 1,500 by 600. Shares per foot, 60½. No. of assessment, 7. Amount, 10c. per share. Levied, August 5, 1873. Total assessments, \$125,000. Listed on San Francisco Stock and Exchange Board.

DE HARO MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. L. Weaver, E. E. Smith, trustees. Annual meeting, second Wednesday in August. No. of shares, 100,000. No. of feet, 710. No. of assessments, 1. Amount, 15 cents. Levied, October 6, 1877. Total assessment, \$15,000.

DEER CREEK GRAVEL MINING COMPANY.

NEVADA, NEVADA COUNTY, CALIFORNIA.

Office, Room 1, 240 Montgomery Street. George K. Phillips, president; A. W. Robinson, secretary; B. C. Waite, superintendent; George K. Phillips, Arthur Hagedorn, B. C. Waite, George W. Cranston, A. W. Robinson, trustees. Annual meeting, October 9. No. of shares, 50,000.

DELEVAN GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, James Delevan, Thad. S. Fitch, trustees. Annual meeting, second Monday in August. No. of shares, 100,000. No. of feet, 750. Shares per foot, 133½.

The Delevan is the third, counting from the south, of the claims located on what has been the Vivian and San Fernando lode, lying to the southeast of the Florida. The claim embraces a double vein or metal-bearing ledge, one being 300 feet wide, the other 200, when they crop to the surface below, and where cut through by an old tunnel. Both ledges assay well, and although unlike in all save the ores they bear, will doubtless be found to unite. A three-compartment working shaft is being sunk to develop the claim. At the depth of 60 feet float rock was found which assayed remarkably high. At this shaft are a good house, blacksmith shop, etc. It is the intention to sink 200 feet, then drift to and crosscut both ledges.

DERBY MINING COMPANY.

LYON COUNTY, NEVADA.

Office, Room 8 Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; N. C. Hall, superintendent; A. K. P. Harmon, John Skae, C. Derby, Louis Sloss, A. J. Simmons, trustees. Annual meeting, last Thursday in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66½. No. of assessment, 1. Amount, 10c. per share. Levied, February 26, 1876. Total assessment, \$10,000.

DIANA GOLD AND SILVER MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 13 and 14, 318 Pine Street. F. M. Smith, president; J. T. McGeoghegan, secretary; J. C. Lennon, superintendent; F. M. Smith, J. W. Hassey, L. W. Crane, G. H. Willard, J. M. Haskell, trustees. Annual meeting, first Monday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66½. No. of assessment, 2. Amount, 5c. per share. Levied, April 25, 1873. Total assessments, \$10,000.

EAGLE COPPER AND SILVER MINING COMPANY.

CALAVERAS COUNTY, CALIFORNIA.

Office, 112 Leidesdorff Street. Jacob Moore, president; F. W. Utter, secretary; J. L. Murphy, superintendent; Jacob Moore, William Utter, S. M. Parsons, H. N. Wyman, F. W. Utter, trustees. Annual meeting, first Monday in January. No. of shares, 100,000. No. of feet, 1,500 by 600.

EAGLE SILVER MINING AND MILLING COMPANY.

LEWIS MINING DISTRICT, LANDER COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. George Grayson, president; R. H. Brown, secretary; Thomas R. Dean, superintendent; George Grayson, William M. Stewart, George O. Butler, William Dunphy, J. M. Byrne, trustees. Annual meeting, first Monday in July. No. of shares, 60,000. No. of assessments, 9. Amount, 15c. per share. Levied, July 19th, 1878. Total assessments, \$161,822.55. Bullion yield, \$23,877.33.

EAST GRAND PRIZE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, 310 Pine Street. R. H. Minister, president; J. W. Pew, secretary; S. G. Weston, superintendent; R. H. Minister, E. B. Dorsey, E. G. DeCraano, N. J. Hussey, M. J. McDonald, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

This mine is a continuation of the Grand Prize ledge, there being only 600 feet intervening, owned by the Argenta Company. Owing to the recent strike made in the Argenta the value of this property has been greatly enhanced. A shaft has been sunk to the ledge, and low grade ore found. Work is to be resumed at once, and the property developed as soon as possible.

EAST UNION MINE.

PIONEER, ARIZONA.

Office, 320 California Street. J. R. Robeson, W. C. O'Boyle, A. W. Blair, trustees. This mine is not incorporated, and is being worked by the owners.

This claim is situated on the same lode with the Union West, being to the east of the latter. It is an early location, having been taken up only a few days after the Silver King. It is being actively worked, a shaft now sixty feet deep being put down on it near the line of the Union West. This shaft is in a well-defined lode of ore and quartz. Rich ore has been found in the croppings further up the hill, leaving no doubt but a body of equally good ore will be opened up at the point where sinking is going on. The lode outcrops in considerable strength for 1,400 feet at a point about half a mile northwest of the Silver King Mine, this being the course of the ledge.

ECHO GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 30, 302 Montgomery Street. Andrew Wasson, president; T. C. Winchell, secretary; Peter Brown, superintendent; Andrew Wasson, T. W. Lathrop, Alfred S. Baker, J. K. McPherson, T. C. Winchell, trustees. Annual meeting, fourth Tuesday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 6 $\frac{1}{2}$.

The Echo Gold and Silver Mining Company own that fine mining property which has been long and favorably known as the "Edinburgh claim," and which is located upon what is known as the South Comstock Lode, Silver City, Lyon County, Nevada, and adjoining the Amazon and Glasgow mines. The location extends 1,500 feet along the ledge, which is well defined, and, as far as developed, the prospect is as good as any on the Comstock. A two-compartment shaft has been sunk and timbered to a depth of 125 feet, and arrangements are being perfected for putting up hoisting works at the earliest possible moment, and continuing the shaft on down in search of the "Big Bonanza" which lies hidden beneath, as it is the universal rule in this vicinity that all ledges bearing gold near the surface carry rich silver ore below.

This claim was originally located in 1863, and prospected as a gold mine with fair success; and, in 1875, the present location was made, and work resumed for the purpose stated above.

The following is the opinion of Col. W. T. Robinson, one of the most practical engineers on the Comstock, and a thoroughly competent expert, given in a brief report recently, "as to that portion of the Comstock mineral belt lying south and west of Gold Cañon, and embracing the Overman, Caledonia, Justice, Lexington, Hartford, South St. Louis, Comet, Atlantic Con., South End, Coupon, Silver Hill, Echo, and the Amazon and Glasgow mines." Col. Robinson says: "All of the above-named properties are located upon and within the mineral zone or belt through which passes the great Comstock Lode. It is possible for any one of the above-named properties to contain a bonanza equal in extent and richness to those of the Con. Virginia and California; and it is a certainty that within the territory embraced in these locations, when developed to the extent of the Virginia City mines, as great or greater results will be the consequence. When, in after years, these very claims will have paid millions in dividends, present incredulous sellers of these shares will regret a chance lost to them forever."

ECLIPSE AND LEE GOLD MINING COMPANY.

WHITE RIVER, TULARE COUNTY, CALIFORNIA.

Office, 80 Nevada Block. J. J. Newsom, president; Daniel Buck, secretary; J. J. Newsom, G. P. Cornell, W. O. Gould, G. A. Hill, H. Lacy, trustees. Annual meeting, third Wednesday in May. No. of shares, 30,000. No. of feet, 12,600.

EL DORADO SOUTH MINING COMPANY.

PHILADELPHIA.

Office, Room 20, 331 Montgomery Street. John S. Gray, president; C. A. Sankey, secretary; John P. Couster, superintendent; John S. Gray, S. Roberts, Geo. R. Williams, John A. Paxton, S. Fallmai, M. J. McDonald, A. H. Rutherford, trustees. Annual meeting, first Monday in July. No. of shares, 40,000. No. of assessments, 12. Amount, 50c. Levied, April 27, '78. Total assessments, \$437,000. Listed on San Francisco Stock and Exchange Board.

This claim is located in Belmont, Nye County, Nevada, joining the El Dorado North, about 2 $\frac{1}{2}$ miles from the town of Belmont. The company have various and extensive works, shafts, and cuts, leads and drifts, but depth and character not known. These have developed a large body of ore, of a very good grade. The company have good hoisting works, and a 20-stamp

mill, and can mine and mill ore for \$20 per ton. Upwards of \$390,000 have already been taken from the mine, on which exploration will be continued. The company are expending about \$50,000 per annum in the development of their claim.

The new perpendicular shaft sunk, with first-class pumping and hoisting works, now gives a depth of 1,000 feet on the level below the old incline works, prospecting now being carried on vigorously with every probability of opening up very soon a remunerative property.

EL DORADO WATER AND DEEP GRAVEL MINING COMPANY.

PLACERVILLE, EL DORADO COUNTY.

Office, 524 Sacramento Street. John W. Coleman, president; Thomas Price, secretary; G. W. Swan, superintendent; John W. Coleman, Col. J. D. Fry, H. D. Bacon, Wm. Morris, L. A. Garnett, Thomas Price, A. Hemme, trustees. No. of shares, 50,000, No. of assessments, 18. Amount per share of last, \$2. Levied, August 15, 1878. Total assessments, \$1,100,000.

ELECTRIC MINING COMPANY.

LINCOLN.

Office, 328 Montgomery Street. J. W. Wesson, president; T. B. Wingard, secretary; C. H. Rollins, superintendent; J. W. Wesson, Almarin B. Paul, J. S. Adams, J. P. Moore, William N. Wade, L. Dal, trustees. Annual meeting, third Thursday in March. No. of shares, 50,000. No. of feet, 10,000. No. of assessment, 19.

ELLEN GOWEN MINING COMPANY.

CASTE DOME, YUMA COUNTY, ARIZONA.

Office, 80 Nevada Block. H. H. Pearson, president; Daniel Buck, secretary; Wm. P. Miller, superintendent; H. H. Pearson, E. S. Denison, Clark W. Crockner, J. McMiner, W. P. Miller, trustees. Annual meeting, last Friday in February. No. of shares, 100,000. No. of feet, 9,000x600.

EMIGRANT SILVER MINING COMPANY.

LEE DISTRICT, INYO COUNTY, CALIFORNIA.

Office, S1 Nevada Block. G. T. Lawton, president; B. W. Mudge, secretary; Peter Taylor, superintendent; G. T. Lawton, A. W. Bowman, I. H. Purkitt, I. L. Hobart, H. C. Swain, trustees. Annual meeting, fourth Tuesday in July. No. of shares, 50,000. No. of assessments, 2. Amount, 50 cents. Levied, November, 1876, and May 23, 1878. Bullion yield, \$90,000. Listed on Pacific Stock Exchange and California Stock Exchange Board.

EMMET CONSOLIDATED MINING COMPANY.

EUREKA DISTRICT, EUREKA COUNTY, NEVADA.

Office, 401 California Street. Wm. P. Dewey, president; D. A. Jennings, secretary; Wm. P. Dewey, Eugene E. Dewey, John A. Paxton, Geo. F. Bragg, G. T. Lawton, trustees. Annual meeting, third Tuesday in December. No. of shares, 60,000. No. of feet, 2,800.

ENDOWMENT MINING COMPANY.

MARIETTA, ESERALDA COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. Thomas Cole, president; R. H. Brown, secretary; Dr. R. Webber, superintendent; Thomas Cole, G. W. Grayson, J. L. Brown, M. Herman, M. Lambeth, trustees. Annual meeting, first Monday in May. No. of shares, 100,000. No. of assessments, 1. Amount, 50c. per share. Levied, August 23d, 1878. Total assessments, \$50,000. Bullion yield, \$88,764.87. Listed on San Francisco Stock and Exchange Board.

This property is located about three and one half miles northerly from the town of Marietta, in Esmeralda County, Nevada. The lode strikes northwest and southeast, with a dip to the southwest, and is in a good position for development, which was begun by a tunnel on the line of the vein. The character of the vein matter is decomposed, and on the surface was free milling, realizing about twenty per cent. of carbonate of lead, some galena, sulphurets, and oxides of iron. The width of vein matter is from five to seventy-five feet, the pay ore being from one to five feet. The value of the ore ranges from \$50 to \$125 per ton in silver. Owing to the character of the ore changing from carbonate of lead to sulphurets, a change of treatment was decided upon, and White's roasting furnaces were added to the machinery. It is expected that twenty-five tons per day will soon be reduced. The tunnel is in about five hundred feet, an air-shaft connecting two hundred feet from the surface. Here a winze is sunk two hundred feet deeper, making in all four hundred feet in depth. Another winze is sunk one hundred and thirty-five feet deep at a point fifty feet from the mouth of the tunnel and between the two winzes (the distance being three hundred feet) there is a continuous connecting drift or level over four hundred feet in length, at a depth of ninety feet below the tunnel. On the third or lower level (counting the tunnel as one) there is a drift opened south of the main winze, to a length of two hundred and fifty feet, north twenty-five feet. Connection will soon be made between the two winzes on the lower level. The two lower levels are ninety feet each in height, exposing a large amount of ore. The ground generally is not extremely hard, though blasting is required, and more or less timbering throughout. As yet, no water has been encountered, though the dampness is increasing. Water has to be hauled to supply the engine; otherwise, the facilities for developing the mines at Marietta are favorable, wood being only \$7.50 per cord, delivered.

ERIE CONSOLIDATED MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, 240 Montgomery Street. H. B. Congdon, president; J. L. Fields, secretary; H. B. Congdon, F. B. Rogers, Silas Selleck, R. Chenery, Clinton Gurnee, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of feet, 3,400. No. of assessment, 1. Amount, \$10,000. Levied, November 20th, 1876. Total assessments, \$10,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock and Exchange Board.

ESSEX.

PIONEER, ARIZONA.

Office, 320 California Street. A. W. Blair, president; William H. Boothe, secretary; A. W. Blair, William H. Boothe, W. H. Stanley, George W. Hopkins, D. J. Edgars, trustees. Annual meeting, second Tuesday in January. No. of shares, 100,000. No. of feet, 1,500.

This claim adjoins the Silver King on the northwest, in which direction it extends for a distance of fifteen hundred feet. It lies between the Bilk and the Hercules, and is clearly on the same rich mineral belt with the Silver King. At a point three hundred feet from the line of the latter, the company have commenced sinking a shaft in a well-defined ledge of quartz and spar about six feet in thickness. There are good indications of ore all through the vein matter, but as yet it is of low grade. The shaft, which is now down twenty feet, will be carried steadily forward, in the expectation of reaching and opening up the regular Silver King lode. This is considered by the owners a valuable piece of ground, both on account of its position and good mineral indications.

EUROPA MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 240 Montgomery Street. B. F. Jellison, president; J. L. Fields, secretary; B. F. Jellison, Richard Chenery, W. S. Chapman, W. H. H. Hort, Frederick Blight, trustees. Annual meeting, second Thursday in August. No. of shares, 100,900. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 7. Amount, 6c. per share. Levied, Sept. 26, 1878. Total assessments, \$114,380.50. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

EXCELSIOR DEEP GRAVEL MINING COMPANY.

FOREST HILL, CALIFORNIA.

Office, 327 Pine Street. S. B. Wattson, president; D. F. Verdenal, secretary; John Borland, superintendent; S. B. Wattson, John Borland, A. Borland, E. Chielovich, Charles Harley, trustees. No. of shares, 50,000. No. of assessment, 2. Amount 50c. per share. Total assessments, \$50,000.

EXCELSIOR MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 9, San Francisco Stock Exchange. F. Tagliabue, president; Victor Fernbach, secretary; Thos. Buckley, superintendent; J. M. Wilde, V. Fernbach, F. Tagliabue, D. F. Verdenal, George Storey, trustees. Annual meeting, first Tuesday in September. No. of feet, 1,500.

This mine is located north of and adjoining the Richer Mine, and is on the west side of Sugar Loaf Mountain. The name of the location was the Goldfish, and three shafts have been sunk on the mine; the first about 150 feet north of the Richer shaft, and is 40 feet deep. Water making its appearance in this shaft, the second one was started 50 feet north of No. 1. Water again coming in at 35 feet, another shaft was started 35 feet farther north, and a little east of the others. In the last shaft the vein-matter was struck at 45 feet, which assayed \$59 per ton gold. A hoisting works and pumping machinery will be immediately placed on the mine, which bids fair to be one of the best in the district.

EXCHEQUER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 418 California Street. S. Heydenfeldt, president; Geo. Schultz, vice-president; Jos. Gruss, secretary; E. A. Schultz, superintendent; H. Von Barga, W. A. Schultz, Geo. Schultz, Wm. Westhoff, S. Heydenfeldt, trustees. Annual meeting, third Tuesday in October. No. of shares, 100,000. No. of feet, 400. Shares per foot, 250. No. of assessment, 12. Amount, \$1 per share. Levied January 17, 1878. Total assessments, \$830,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock and Exchange Board.

The Exchequer lies next south of the Bullion and between it and the Alpha. It has been prospected through the Bullion and Imperial shafts. The developments which have been made in the drift north, on the 200-foot level of the Imperial, together with the prospects of the Combination drift from the same level, to develop the Alpha, Exchequer and Bullion, have called increased attention to the Exchequer of late, and greatly appreciated its value. On the 1,700, 1,800, and 2,000-foot levels crosscuts have been run and thorough prospecting done, but so far nothing of value has been discovered. The vein is in existence on all of these levels, but the ore is of a low grade, and will not pay to take out. It is believed from present indications that at a lower depth it will prove better.

FALCON MINING COMPANY.

ROCK CREEK, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. Jno. A. Paxton, president; R. H. Brown, secretary; H. W. Brown, superintendent; Jno. A. Paxton, S. Reinhart, G. W. Grayson, M. P. Freeman, S. McMaster, trustees. Annual meeting, second Saturday in October. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 3. Amount, 10c. per share. Levied, April 30th, 1878. Total assessments, \$40,000. Listed on San Francisco Stock and Exchange Board.

FLORENCE BLUE GRAVEL MINING COMPANY.

PIMA, ARIZONA TERRITORY.

Office, Room 32, Merchants' Exchange. T. B. Valentine, president; F. A. McGee, secretary; A. J. Miner, superintendent; T. B. Valentine, Jas. S. Porteous, F. R. Webster, W. Leviston, D. W. F. Bisbee, trustees. Annual meeting, first Wednesday in December. No. of shares, 60,000. No. of assessment, 1. Amount, 5c. Levied, July 17, 1873. Total assessment, \$3,000.

This company was incorporated November 28th, 1877, under the laws of California, to mine for gold in Nevada County, California. The property upon which the company is now operating is situated at Hunt's Hill, about 6½ miles from Dutch Flat, in Nevada County, Cal. An extensive deposit of blue gravel, lying in the bed of a dead river, has been exposed, rich in gold. Complete hydraulic works are now in place, and flumes and ditches constructed. A large reservoir has been built, of a capacity of 12,000,000 gallons, connected by flume and ditch with the South Yuba Canal Company, from which they get their supply of water. The claim is most eligibly situated for work and washing the gravel, with a fall of over 80 feet for tailings. No drifting or tunneling will be required. The body of gravel upon its face is about 175 feet deep. All preliminary work is now completed, and all that is now wanted is a regular supply of water to make this claim highly remunerative. A supply of water is expected for at least seven months in the year. There is now a pressure of 300 feet, and can be increased to 500 or 600 feet with small outlay.

FLOWERY MINING COMPANY.

FLOWERY, STOREY COUNTY, NEVADA.

Office, Room 47, Nevada Block. Joseph Clark, president; W. W. Stetson, secretary; J. G. Rule, superintendent; Jos. Clark, Chas. H. Fish, R. N. Graves, John Skae, A. K. P. Harmon, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,100.

The Flowery Mine is located in the mining district that bears its name, and is situated to the northeast of the Sierra Nevada Mine. Originally this location comprised 2,100 feet, but recently 1,000 feet were segregated, and are now designated as the North Bonanza Mine. This property is near the northernmost extremity of the Comstock, and is situated in one of the most favored spots in the vicinity. Work has begun towards development, and will be prosecuted vigorously. Great expectations are entertained both of this mine and the North Bonanza. The title to this entire claim, including the North Bonanza, is secured by U. S. patent.

FOURTH OF JULY GOLD AND SILVER MINING COMPANY.

EUREKA MINING DISTRICT, EUREKA, NEVADA.

Office, Room 15, 310 Pine Street. D. L. McDonald, president; J. W. Pew, secretary; W. T. Davis, superintendent; D. L. McDonald, C. Trand, C. B. Gould, M. C. Gardner, W. T. Davis, trustees. Annual meeting, third Monday in April. No. of shares, 100,000. No. of feet, (about) 1,600. Shares per foot, (about) 62. No. of assessment, 2. Amount, 10c. per share. Levied, Sep. 23, 1878. Total assessment, \$20,000.

This mine lies on Prospect Hill, and is on the same mineral belt with the Eureka Con. and Richmond, from which it is distant about three miles to the northeast, the ore in all these mines being of a similar character. An incline has been sunk on this claim to a depth of 700 feet. Connecting with this incline is a vertical shaft, which intersects it at a depth of 600 feet. A tunnel has also been run in 1,200 feet on the ledge. The incline is in the ledge, which carries ore all the way, and which, though of rather low grade, has sufficed to defray more than one-half the working expenses of the mine. The property has been leased to other parties the past year; but the company will shortly resume the work of opening it up themselves, as it is believed that the ore recently struck in the incline, and which assays at the rate of \$100 per ton, will go far towards covering current expenses in the future. Work was commenced on this claim July 4th, 1870, and has been prosecuted pretty steadily since.

FOUR-TWENTY MINING COMPANY.

VIRGINIA, NEVADA

Office, Room 3, 306 Pine Street. John Skae, president; Edward F. Stone, secretary; W. S. Wright, superintendent; John Skae, J. M. Walker, W. E. Hobart, J. H. H. Williams, Jos. Woodworth, trustees. Annual meeting, third Wednesday in December. Capital stock, \$3,000,000. No. of shares, 30,000. No. of feet, 420. Shares per foot, 71. No. of assessment, 9. Levied December 29, 1874. Total assessments, \$69,330.

The "4-20" is a very old location. Something about ten or more years ago, a shaft was started on the ground, and sunk to the depth of 500 feet, when it was intercepted by a drift north from the Bullion. The title has been in dispute, as the Bullion has tried to claim the ground. Whether the courts will sustain the "4-20" or not will soon be determined. The claim lies between the Bullion and the Chollar-Potosi.

FRANKLIN GRAVEL MINING COMPANY.

DUTCH FLAT, PLACER COUNTY, CALIFORNIA.

Office, 310 Pine Street. O. F. Giffin, president; George R. Spinney, secretary; O. F. Giffin, W. H. Graves, R. N. Graves, J. D. Fry, James Terff, trustees. Annual meeting, second Friday in April. No. of shares, 20,000. No. of assessments, 3. Amount, \$37,000. Total assessments, \$37,000. Bullion yield, \$17,755.

FRANKLIN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.]

Office, 302 Montgomery Street. C. Jones, president; W. H. Watson, secretary; C. Jones, A. Fleishacker, G. Reis, L. B. Frankel, W. H. Watson, trustees. Annual meeting, last Monday in March. No. of shares, 30,000. No. of feet, 1,200. Shares per foot, 25.

FRESNO GOLD MINING COMPANY.

PINE GOLD GULCH, FRESNO COUNTY, CALIFORNIA.

Office, 80 Nevada Block. W. R. DeFrees, president; Daniel Buck, secretary; W. R. DeFrees, D. M. Seaton, C. W. Tozer, George T. Terry, Daniel Buck, trustees. Annual meeting, first Wednesday in July. No. of shares, 100,000. No. of feet, 10,500.

GENERAL LEE SILVER MINING COMPANY.

GLOBE DISTRICT.

Office, Room 12, 310 Pine Street. Wm. S. Wells, president; T. E. Atkinson, secretary; W. B. Scott, superintendent; Wm. S. Wells, D. N. Hastings, A. Chabot, C. Reis, W. Dutton, J. A. Lytle, W. F. Peabody, trustees. Annual meeting, October 19. No. of shares, 100,000. No. of feet, 1,500x600. Shares per foot, 66 $\frac{2}{3}$. No. of assessments, 2. Amount, 5c. Levied, March 7, 1878. Total assessments, \$10,000.

GENESEE MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA

Office, Room 3, 306 Pine Street. L. Reynolds, president; Edward F. Stone, secretary; L. Reynolds, H. H. Flagg, L. Aldrich, C. R. Land, John Gillig, trustees. Annual meeting, first Friday in August. No. of shares, 100,000. No. of feet, 666.

The Genessee lies west and adjoining the Kossuth, and east of the Glasgow. There has been just enough prospecting done to hold the claim, and prepare for future developments. There are surface indications of a very promising character, and the locality is one which is attracting very general attention, through the wonderful developments there made.

GEORGE DOUGLASS MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 615. No. of assessment, 2. Amount, 25c. per share. Levied, March 5, 1878. Total assessments, \$35,000.

GEORGIA SILVER MINING COMPANY.

AMERICAN FLAT, STOREY COUNTY, NEVADA.

Office, 414 California Street. George W. Beaver, president; R. Wegener, secretary; George W. Beaver, W. Turnbull, J. T. Bradley, J. P. Dyer, Geo. W. Burns, trustees. Annual meeting, third Tuesday in December. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, \$3 $\frac{1}{2}$. No. of assessment, 1. Amount, 10c. Levied, July 29, 1875. Total assessment, \$10,000. No. of dividend, 1. Amount, 3c. Declared, April 16, 1878. Total dividend, \$3,000. Listed on San Francisco Stock and Exchange Board.

GERMANIA MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, 306 Pine Street. C. W. Kendall, president; Edward F. Stone, secretary; C. W. Kendall, J. H. H. Williams, R. H. Sinton, H. C. Bidwell, E. F. Stone, trustees. Annual meeting, second Wednesday in February. Capital stock, \$10,000,000. No. of shares, 100,000. No. of feet, 600. Shares per foot, 166 $\frac{2}{3}$.

The Germania adjoins the Georgia, and lies south of the Rock Island. The ledge is one of the most plainly marked of the section, and the underground developments of the Rock Island prove it to be one of the broadest and most promising. Only sufficient prospecting has been done on the Germania to hold the ground.

GILA SILVER MINING COMPANY.

REVELLE, NYE COUNTY, NEVADA.

Office, Room 7, Safe Deposit Building. Vincent Neal, president; William W. Parrish, secretary; J. C. Ogden, superintendent; Camilo Martin, Vincent Neale, Theodore H. Hittell, A. K. Hawkins, R. Cohen, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of assessment, 2. Amount, 25c. per share. Levied, Aug. 27, 1878. Total assessments, \$25,000. No. of dividends, 2. Amount, \$50,000. Declared, July 8 and August 6, 1875. Total dividends, \$50,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The claim of this company, situated as above, embracing several locations, aggregating 100,000 feet, has been but partly prospected, but that little has brought to light large bodies of good milling ore, which return average assays of \$100. Assays have been made as high as \$1,000. The mine is in a highly prosperous condition, the stopes looking well and turning out a better grade and larger quantities of ore than ever before. The company own a ten-stamp mill, which, after running for a time on custom rock, has lately been crushing their own ore, on which it will be exclusively employed in the future. There has been accumulated at the mill 400 tons of ore, with a large quantity also on the mine dumps, the prospect being that the mine will yield enough to keep the mill hereafter steadily running. The Gila is now making regular shipments of bullion, which will not only be kept up but, most likely, largely increased. The business conduct of the property is good, and its future full of encouragement.

GLASGOW GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. George B. Congdon, president; John Crockett, secretary; D. H. Jackson, superintendent; Geo. B. Congdon, Sam. Miller, J. P. Page, H. S. Tibbey, G. W. Osborn, trustees. Annual meeting, fourth Tuesday in February. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. No. of assessment, 5. Amount, \$6,000. Levied, February 11, 1878. Total assessment, \$45,000. Listed on San Francisco Stock and Exchange Board.

The Glasgow extends from the Amazon east toward the Kossuth, and is being prospected conjointly with the Amazon, and through the same shaft. The crosscut which was run on the 300-ft. level found the ledge considerably wider in the Glasgow than in the Amazon, and the prospects for pay ore are much enhanced thereby. A more full description of the Glasgow Lode will be found in our article on the Amazon Con. Within the past month, a body of exceedingly rich ore has been cut into on the small claim adjoining the Glasgow on the north-west, and so near the line of the two companies, that it will, without doubt, be found upon more thorough exploration to extend into the Glasgow ground.

GOLD DEPOSIT MINING COMPANY.

KELSEY, EL DORADO COUNTY, CALIFORNIA.

Office, Room 4, 309 California Street. R. Stevenson, president; J. M. Buffington, secretary; N. D. Burlingham, superintendent; R. Stevenson, H. A. Sweet, F. W. Voll, C. E. McNear, Henry Anderson, trustees. Annual meeting, last Monday in March. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 6 $\frac{1}{2}$.

GOLD MOUNTAIN MINING COMPANY.

LOWER RANCHERIA, AMADOR COUNTY, CALIFORNIA.

Office, 410 Pine Street. Maurice Dore, president; Charles Dore, secretary; J. L. Goodman, superintendent; Charles Dore, M. Dore, J. L. Goodman, T. B. Kent, W. H. Chickering, trustees. No. of shares, 24,000. No. of assessments, 6. Amount, \$1. Levied, June 22, 1878. Total assessments, \$40,000.

GOLD STRIPE MINING COMPANY.

PLUMAS COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. E. Green, president; George Standart, superintendent; E. Green, R. E. Brewster, H. C. Bidwell, L. A. Booth, A. Halsey, trustees. Annual meeting, July 27. No. of shares, 90,000. No. of assessments, 1. Amount, \$13,500. Levied, June 20, 1878. Bullion yield, \$113,809.26.

GOLDEN CHARIOT MINING COMPANY.

FRENCH, IDAHO TERRITORY.

Office, Rooms 13 and 14, 318 Pine Street. Joseph Clark, president; J. T. McGeoghegan, secretary; R. P. DeNoon, superintendent; Joseph Clark, Samuel Rosener, John Rosenfeld, Louis Sloss, A. Borland, R. T. Carroll, B. Speier, trustees. Annual meeting, first Monday in March. No. of shares, 90,000. No. of feet, 1,820. Shares per foot, 49 5-9. No. of assessment, 22. Amount, 25c. per share. Levied, March 11th, 1878. Listed on San Francisco Stock and Exchange Board, and Pacific Stock Exchange.

This mine is located on War Eagle Mountain, about four miles from Silver City. It has been prospected through the shaft and levels every hundred feet, to the depth of 1,500, and has returned a half million to the shareholders in dividends. These explorations have also developed large bodies of ore, which have not yet been stoped out. The company have hoisting works all complete, and a 20-stamp steam mill, with all the appliances of modern invention to facilitate both mining and milling. The work of exploration and of stoping and milling ore will be continued and driven energetically ahead, the late important ore developments made in the vicinity having encouraged the management to renewed and more energetic efforts for bringing the property into active production.

GOLDEN GATE CONSOLIDATED HYDRAULIC MINING COMPANY.

SUCKER FLAT, YUBA COUNTY, CALIFORNIA.

Office, Rooms 13 and 14, 318 Pine Street. P. Campbell, president; J. T. McGeoghegan, secretary; P. Campbell, P. J. White, T. P. Riordan, trustees. Annual meeting, first Monday in October. No. of shares, 100,000. No. of assessments, 2. Amount, \$1. Levied, March 2, 1878. Total assessments, \$200,000.

GOLDEN OPHIR MINING COMPANY.

KELSEY DISTRICT, EL DORADO COUNTY

Office, 319 California Street. W. A. Jones, president; J. M. Buffington, secretary; T. G. Bilty, superintendent; W. A. Jones, A. G. Lawrence, J. E. Lewis, T. L. Taylor, James W. Whaling, trustees. Annual meeting, last Monday in February. Capital stock, \$5,000,000. No. of shares, 100,000. No. of feet, 1,500.

This mine is located in Greenwood Mining District, El Dorado County, California, containing 1,400 feet by 600, and is fenced, in what is known as the North Branch of the American Cañon, one mile and a half from Greenwood, and fourteen miles from Auburn Station, on the Central Pacific Railroad. There are three lodes belonging to the location. The first is of decomposed quartz four feet thick, showing good walls. The second is fourteen feet thick, showing a high grade of sulphurets. The third is of quartz and sulphurets, four feet thick. It dips east, and from appearances the veins are converging. Ten samples from the mine assayed from \$12.55 to \$929.29. The average yield, \$207.51. Lodes one and two are in slate; No. three, in slate and porphyry. The east wall is in slate, and the west in porphyry. The mine is opened by three tunnels, commencing on the west side of the mountain and running due east.

Tunnel number one is 276 feet long and 150 feet below the croppings. Lode number one is cut at ninety-six feet from the mouth of the tunnel. A level has been run 136 feet south on the lode, showing a well defined vein.

Tunnel number two is 325 feet long and 225 feet below the croppings, cutting lodes numbers one and two. Lode number one at this point is four feet six inches thick. Lode number two is fourteen feet thick, showing a large body of sulphurets, intermixed with slate and quartz,

and is quite rich in free gold. At 150 feet from the mouth of the tunnel, lode number one is cut, and a level has been run fifty feet north, showing good ore and regular walls. At 300 feet from the mouth of the tunnel, lode number two is cut, showing a vein fourteen feet thick. At this point a shaft has been sunk thirty-five feet in sulphurets for the purpose of testing the mine, and has shown good results.

Tunnel number three is 520 feet long, cutting lode number one 400 feet below the croppings. 175 feet from the mouth of the tunnel a level has been run north fifty feet, showing a good body of ore and well defined walls. At 350 feet from the mouth of the tunnel, a level has been run on lode number two, 250 feet south and 100 feet north, showing a large body of sulphurets. An ore chute has been run from tunnel number one to tunnel number three (or lower tunnel) for the purpose of proving the lode and to facilitate the handling of the ore. Lode number three will be cut by driving the lower or main tunnel fifty feet further east. A tunnel has been run from a ravine on the south end of the location, fifty feet on the lode, showing a well defined lode, good walls and good grade of ore.

There are at present about 1,200 tons of ore in the mine, stacked and ready for treatment, which was taken out in constructing the tunnels.

The stamp mill can be run by water at all seasons of the year. The mill site is 250 feet from the mouth of the lower tunnel and twenty-five feet below that level, giving 350 feet perpendicular fall of water from the ditch.

It is the opinion of some of the best of mining experts that this mine will keep a twenty-five stamp mill employed constantly for many years. The company contemplate the immediate erection of such a mill and roasting furnace.

GOLDEN STAR MINING COMPANY.

CAVE CREEK DISTRICT, MARICOPA COUNTY, ARIZONA.

Office, Rooms 32 and 33, 318 Pine Street. J. I. Ayres, president; J. W. Morgan, secretary; W. B. Hellings, superintendent; J. I. Ayres, J. F. Place, S. Silverberg, W. B. Hellings, Geo. W. Britton, trustees. Annual meeting, first Tuesday in April. No. of shares, 100,000. No. of feet, 4,500. Shares per foot, 22 2-9.

This mine is situated 90 miles northeast of Florence and 30 east of Phoenix, in the Bradshaw range of mountains. The course of the vein, which occurs in a slate formation, is northeast and southwest, running with the stratification of the country. It crops out boldly for 1,000 feet, and pitches northwest at an angle of 30 degrees, conformably with the slope of the mountain in which it is situated. The ledge matter for a distance of 400 feet below the croppings is so exposed that for a length of 1,000 feet it literally forms the face of the mountain; and for a much greater distance down it can anywhere be reached by sinking to a depth of not more than 15 or 20 feet. Under these conditions, the ore can be mined at a mere nominal cost. This denuded portion of the ledge has an average thickness of about five feet, and contains, at the lowest calculation, 50,000 tons of ore. As a short tunnel run from the adjacent cañon would intersect the ledge at a depth of 800 feet, the cost of ore extraction and drainage must for a long time be confined to a very low figure. The ore here is a lively, auriferous quartz. The gold is so coarse and free that it shows readily to the eye, and the ore can be prospected in a very satisfactory manner by crushing in a mortar and washing with a pan or horn spoon. The mass of it assays at the rate of about \$30 per ton, carefully selected pieces running up into the thousands. It is safe to estimate that this ore will yield at least \$20 per ton under the stamps. As it can be mined and milled for \$5 per ton, there would arise a net profit of \$15 on every ton reduced, or a gross profit of \$750,000 on the ore already exposed in the mine, and which may reasonably be considered but a small percentage of the whole, as the lode occupies a true fissure and will no doubt carry its ores as far down as it will be practicable to follow them. The gold is very pure, being worth \$19 per ounce, and so free that the ore can be worked up to 90 per cent. of fire assay by simple mill process. To say that the ore can be mined and milled at so small a cost implies that the natural facilities for handling it are good, which is really the case, there being wood and water in fair supply in the immediate neighborhood. As this mine could be brought into a condition of active and profitable production with a comparatively small outlay, it offers especial inducements for the investment of capital. There is not a more promising property in the district where it is situated, and very few that would so well repay a limited expenditure of money in all Arizona.

GOLDEN TERRA MINING COMPANY.

BLACK HILLS, DEADWOOD, DAKOTA TERRITORY.

Office, 327 Pine Street. M. L. McDonald, president; D. F. Verdenal, secretary; C. D. Porter, superintendent; M. L. McDonald, J. B. Haggin, Thomas Bell, J. W. Bailey, George Hearst, trustees. No. of shares, 100,000. No. of assessment, 2. Amount, 50c. per share. Levied, Sep. 5, 1878. Total assessments, \$100,000. Listed on San Francisco Stock and Exchange Board.

This mine is located in the now famous Black Hills, Dakota, and has already produced a large amount of bullion. The company owns a twenty-stamp mill fully equipped, and within sixty days from August 1, a new sixty-stamp mill, ordered from Chicago, will be at work. This property is justly regarded as one of the most promising of the Black Hills, the width and extent of the ore body being such as to assure a steady yield of ore for years to come. With the starting up of the new mills regular dividends will be in order.

GOODSHAW MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 1, 309 California Street. Robert Sherwood, president; A. F. Main, secretary; Capt. Thomas Buckley, superintendent; Robert Sherwood, F. Tagliabue, J. W. Harker, D. F. Verdenal, J. M. Wilde, trustees. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 1-10. Listed on San Francisco Stock and Exchange Board.

The Goodshaw is a relocation of the Montauk, said to be the oldest location in Bodie—having been taken up by Bodie himself in 1860. This is one of the few claims in this district which had an outcrop of quartz of a fine character, showing considerable silver. Assays taken from the vein near the surface have given: gold, \$175.30; silver, \$165.20. A shaft has been sunk on this ground to a depth of 153 feet, and is under contract to be put down to 200 feet, to be completed by the 5th of September, when the vein will be crosscut. The shaft has cut several small veins or feeders of very rich quartz, which seem to run together at a depth of about 200 feet. This claim lies south of and adjoining the Bodie, and is on the northerly slope of Silver Hill. At the present writing (Aug. 27th), the bottom of the shaft is all in quartz of good character, and the chances for opening up a very valuable mine here are well assured.

GOULD & CURRY SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, 69 Nevada Block. Chas. A. Fish, president; A. K. Durbrow, secretary; F. F. Osbiston, superintendent. S. Heydenfeldt, W. S. Lyle, Geo. Congdon, Geo. R. Wells, R. H. Follis, Robert Sherwood, C. H. Fish, trustees; Annual meeting, third Monday in December. No. of shares, 108,000. No. of feet, 621. Shares per foot, 173. No. of assessments, 33. Amount, \$1. Levied, April 16, 1878. Total assessments, \$2,679,600. No. of dividends, 36. Declared, October 10, 1870. Total dividends, \$3,326,800. Bullion yield, \$15,644,220.63. Listed on San Francisco Stock and Exchange Board and California Stock and Exchange Board.

This mine is located on the most prominent and highest croppings of the Comstock Lode, between the Best & Belcher and Savage. Since the last issue of the MINING REVIEW a great deal of work has been done on this mine. The main shaft has been entirely retimbered. The incline, which starts from the 1500-foot level, has been sunk to below the 1900-foot level, at an angle of 55 degrees, to 45 feet below the 1700-foot level, which the angle changes to 45 degrees in consequence of the flattening-out of the ledge. Altogether, 2,788 feet of drifts have been run on the various levels. On the 1700-foot level, a south drift has been run 374 feet, connecting with the joint winze on the line between this mine and the Savage. This and other works have secured excellent ventilation in all the levels. A large body of fair-looking vein-matter was met with in the east crosscut No. 1, on the 1700-foot level, 497 feet east of the incline. On this crosscut a well-defined seamy clay was cut, running north 17 degrees east and pitching 64 degrees east; passing through this the ground became very soft and dangerous to work. The diamond drill, which was used at this point, tapped a heavy stream of water. The matter brought out by the drill contained quartz, but with very little silver. These are considered good indications of better things to come. A large air-compressor, the largest on the Comstock, has been put up on this mine.

At our latest advice, 21st of September, 1878, the company had stopped sinking the incline for a time, and were running crosscut No. 4, in porphyry and stringers of quartz.

The new joint shaft, in connection with the Best & Belcher, on the dividing line between this mine and that, has been commenced, and a temporary engine erected for hoisting and pumping. It is 2,000 feet east of the old, or Bonner shaft, of the Gould & Curry. When it has been sunk to the 1700-foot level the new and powerful machinery to be used thereafter will be in readiness. It is expected that the work in the new shaft will not be troubled with water till it reaches a depth of 1700 feet, as the ground is drained to that depth by the Sutro Tunnel. A large amount of money has been expended by the company in removing the old pumps and pumping machinery, and replacing them with new and more powerful ones. All this and the other heavy expenses incurred in dead work and improvements, have been paid. The company are confident of striking rich ores on the 1900-foot level when the new shaft reaches that depth.

GRAND CENTRAL MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, 327 Pine Street. J. W. Gashwiler, president; D. F. Verdenal, secretary; Samuel Linkton, superintendent; J. W. Gashwiler, S. Reinhart, M. J. McDonald, James Morgan, M. P. Freeman, trustees. No. of shares, 100,000. No. of feet, 3,000. No. of assessment, 2. Amount, 3c. per share. Levied, August 29, 1877. Total assessments, \$8,000. Listed on San Francisco Stock and Exchange Board.

GRAND PRIZE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. G. W. Grayson, president; R. H. Brown, secretary; Jno. E. Dixon, superintendent; G. W. Grayson, M. Herman, E. M. Hall, Henry Williams, M. J. McDonald, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 1. Amount, \$1 per share. Levied, July 9, 1878. Total assessments, \$100,000. No. of dividends, 3. Amount, \$1 per share. Paid February 12, 1878. Total dividends, \$400,000. Bullion yield, \$1,497,183.17. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

Grand Prize is located in Tuscarora District, Nevada, and lies to the eastward of the Argenta. The claim has been worked about two years, and a shaft has been sunk to the depth of nearly 500 feet, and is still sinking in chlorides and sulphurets. In a short time a level will

be opened out at the depth of 500 feet. No ore has as yet been worked, nor is it the intention to do so, until the mine is relieved of water. The prospect shaft is down a little over forty feet, and everything is encouraging.

GREAT EASTERN SILVER MINING COMPANY.

BRISTOL, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. James M. Day, president; J. W. Pew, secretary; Frank W. Teller, superintendent; J. M. Day, B. F. Sides, M. J. McDonald, E. B. Dorsey, W. E. Hale, trustees. Annual meeting, fourth Thursday in December. No. of shares, 120,000. No. of feet, 1,500. No. of assessments, 1. Amount, 5c. per share. Levied, May 8, 1878. Total assessment, \$6,000.

GREAT WESTERN QUICKSILVER MINING COMPANY.

LAKE COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. E. Green, president; Andrew Rocca, superintendent; E. Green, G. Palache, A. W. Bowman, M. P. Jones, J. Belden, R. E. Brewster, G. T. Lawton, trustees. Annual meeting, first Tuesday in November. No. of shares, 50,000. Total assessments, \$35,500. Total dividends, \$200,000. Bullion yield, \$829,821.46.

GREEN MOUNTAIN GOLD MINING COMPANY.

PLUMAS COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. R. E. Brewster, president; C. G. Rodgers, superintendent; R. E. Brewster, J. J. Boyd, H. C. Bidwell, L. A. Booth, C. J. Pillsbury, trustees. Annual meeting, September 10. No. of shares, 40,000. Bullion yield, \$106,546.98.

HALE AND NORCROSS SILVER MINING COMPANY.

VIRGINIA MINING DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 5S, Nevada Block. George Congdon, president; Jno. G. Congdon, vice-president; Joel F. Lightner, secretary; Philip Deidesheimer, superintendent; George Congdon, John G. Congdon, R. H. Follis, S. Heydenfeldt, Con. O'Connor, George Wallace, George R. Wells, trustees. Annual meeting, second Wednesday in March. No. of shares, 112,000. No. of feet, 400. Shares per foot, 280. No. of assessments, 59. Amount, \$1.00 Levied, Aug 13th, 1878. Total assessments, \$2,858,000. No. of dividends, 36. Amount, \$5 per share on 8,000 shares. Declared, April 5th, 1871. Paid, April 10th, 1871. Total dividends, \$1,598,000. Bullion yield, \$3,010,767.81. Listed on San Francisco Stock and Exchange Board.

This mine lies between the Savage on the north and the Chollar-Potosi on the south, standing squarely on the path of the Comstock as it sweeps toward Gold Hill. It belongs to the group of mines that have helped to make the Comstock famous, having had its bonanza and been a large and profitable producer of bullion in its day. Since the exhaustion of its principal ore body some years ago, the company has directed its energies to the work of deep exploration, a vertical shaft having been sunk to a depth of 1,200 feet, from which level it has been continued on an easterly incline a further distance of 1,000 feet, a winze having also been put down 80 feet below the 2,200-foot level. Drifts have been run on the various levels, in some instances the entire length of the claim; but no crosscutting has yet been made. Some of the levels have also been connected by winzes. The mine has made much water, receiving largely the flow from the Savage, and filling at one time nearly up to the 1,700-foot level. This necessitated the procurement of powerful machinery for pumping purposes, through the aid of which the water having been reduced has since kept below the 2,100-foot level, the shaft having meantime been maintained in good condition. Last year this company united with the Chollar and Savage for the purpose of sinking a large prospecting and working shaft for their joint use and benefit. This stands far to the east of their present works, and has now reached a depth of 2,400 feet. This shaft, which is more fully described elsewhere in this work, will soon afford greatly increased facilities for the more thorough exploration of the mine at great depths, where already the evidences of a near approach to a great ore body multiply and gather strength every day.

HAMBURG MINING COMPANY.

EUREKA COUNTY, NEVADA.

Office, 401 California Street. Wm. P. Dewey, president; D. A. Jennings, secretary; J. C. Powell, superintendent; Wm. P. Dewey, Geo. F. Bragg, John A. Paxton, Wm. B. Murray, S. P. Dewey, trustees. Annual meeting, second Tuesday in November. No. of shares, 100,000. No. of assessments, 5. Amount, 50c. per share. Levied, April 20, 1878. Total assessments, \$155,000. Bullion yield, \$120,579.75. Listed on San Francisco Stock and Exchange Board.

The consolidated mines of this company are situated as above stated, being located on the strong and prolific mineral belt that here strikes across the country. Within the past eight years there have been taken from the Eureka District bullion values to the amount of \$30,000,000, the present annual yield reaching \$12,000,000; this, next to the Comstock, being the most productive mining district on the Pacific Coast. The location of the Hamburg Company covers a series of parallel veins, the tract comprising an area of fifty acres, secured by U. S. patent. These veins are all on the same ore channel with the Eureka Consolidated, Richmond, "K. K.," Phoenix and other well known mines in the district.

According to a recent report made on this property, by W. S. Keys, a most competent and reliable mining authority, these lodes lie in a highly favorable geological formation, the mineral bearing zone being broad and well defined, its lateral expansion reaching at some points six or eight hundred feet. The ore, a carbonate of lead and argentiferous galena, carrying, also, a small percentage of gold, occurs here, as elsewhere in the vicinity, in large masses, which have

been found to preserve their wealth and strength to a depth of 1,200 feet at least, this being the lowest point to which any of the mines here have yet been opened. From the workings of the Hamburg Mine, confined, as yet, to near the surface, there has been extracted over \$200,000. This ore, precisely like that from the Eureka Consolidated, and the Richmond, yields from sixteen to sixty per cent. of lead, and from \$40 to \$80 per ton in gold and silver. The company have now some 800 tons of this class ore on the mine dump, the whole of it extracted in the course of prospecting the mine, no stoping having yet been done, the ore in sight above the lowest level amounting to several thousand tons. In the progress of exploration, caves filled with rich ores have been encountered here, similar to those opened up in the Eureka and Richmond group, a geological feature of importance, as pointing to continued mineralization of the lodes where they occur.

The improvements and equipments made on this property consist of a three-compartment shaft sunk to a depth of 800 feet, steam hoisting works, having capacity to go down 1,000 feet or more, together with houses, shops, wagon roads, etc. From the shaft extensive galleries have been run off at regular intervals, all in ore of excellent quality. Adjacent to their mine the company own 300 acres of wood land, capable of furnishing fuel for a long time; also, a tract of 150 acres, near the town of Eureka, which affords water ample for every purpose, this company, as regards these two essentials, being very eligibly conditioned. In view of their large and promising ore deposits, their complete equipment, wood, water, and other natural advantages, the expert alluded to, expresses the opinion that this property possesses a prospective value equal to any other in the Eureka District. The company is, in many respects, an exceptionally good one. It is financially strong, active and well managed, the directory containing the names of some of our most discreet business men and trustworthy citizens.

HAMPDEN MINING COMPANY.

CEDAR VALLEY, MOHAVE COUNTY, ARIZONA.

Office, 80 Nevada Block. B. W. Mudge, president; Daniel Buck, secretary; William A. Fuller, superintendent; B. W. Mudge, E. M. Walker, George C. Kibbe, M. G. Cobb, Daniel Buck, trustees. Annual meeting, last Monday in March. No. of shares, 100,000. No. of feet, 1,500 by 600.

HANDLY MINING COMPANY.

DODIE, MONO COUNTY, CALIFORNIA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edwd. F. Stone, secretary; C. Gurnee, J. M. Walker, C. Reis, R. F. Bunker, R. G. Brown, trustees. No. of shares, 100,000. No. of feet, 1,500.

This mine is situated between the Goodshaw and the Bodie, adjoining the latter on the south. The claim covers an area of 1,500 feet by 100. A vertical shaft has been sunk on the vein to a depth of 70 feet, cutting it at a point about 45 feet below the surface. The vein matter and ore are of the same kind as in the Bodie, much of the ore carrying from \$300 to \$400 per ton in gold. This ranks among the earliest locations made in Bodie; and, having been in the uninterrupted possession of the present owners and their predecessors, the title is complete and unquestioned. The adjuncts and immediate surroundings of the Handly invest the property with an extrinsic value apart from the rich ore deposits developed upon it. The ownership rests mainly with men of large substance, the most of them residents of San Francisco.

HARRISBURG SILVER MINING COMPANY.

HARRISBURG, WASHINGTON COUNTY, UTAH.

Office, 310 Pine Street. Louis Janin, president; J. W. Pew, secretary; G. F. Williams, superintendent; Louis Janin, P. J. Van Rensselaer, W. P. Dewey, A. F. Walcott, H. N. Chauncey, trustees. Annual meeting, second Wednesday in November. No. of shares, 60,000. No. of feet, 6,000. Listed on San Francisco Stock and Exchange Board.

The four claims of the Harrisburg Mining Company embrace 6,000 feet of the Pride of the West Lode, and are on the southern extension of the noted White Reef. Each of the claims of 1,500 feet has been prospected by an incline shaft. A considerable amount of work has been done, and three distinct veins have been cut, each of which carries ore of varying grades of richness. The southern portion of the White Reef has all the characteristics of the better known and much more developed northern portion, on which is situated the Leeds mine; and there seems to be no reason why as good and as extensive a body of ore should not be encountered as that which was found in the claim of the Leeds Company. No assessment has been levied.

HARTFORD MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, 306 Pine Street. Wm. H. Sharp, president; Edward F. Stone, secretary; Wm. H. Sharp, R. Cohen, F. Walter, Wm. H. Wallace, Thomas Price, trustees. Annual meeting, first Tuesday in June. No. of shares, 35,000. No. of feet, 1,400. Shares per foot, 25. No. of assessments, 3. Levied, June 26, 1875. Total assessments, \$24,500.

The Hartford lies just west of the Silver Hill. In olden times a tunnel was run west into the hill 410 feet, and a drift sent along the ledge 300 feet. These have been recently cleared out and retimbered preparatory to being used in the further development of the mine. The ledge is broad, well defined, and filled with genuine matrix, bearing ore in bunches and streaks, some of which return liberal assays.

HAZARD GRAVEL MINING COMPANY.

MICHIGAN BLUFF, PLACER COUNTY, CALIFORNIA.

Office, Rooms 13 and 14, 318 Pine Street. C. K. Breeze, president; J. T. McGeoghegan, secretary; J. H. Keown; superintendent; C. K. Breeze, R. T. Carroll, James Gannon, William Davidson, James H. Keown, trustees. Annual meeting, second Tuesday in September. No. of shares, 64,000.

HEADLIGHT MINING COMPANY.

LAKE MINING DISTRICT, MONO COUNTY, CALIFORNIA.

Office, 302 Montgomery Street. George S. Dodge, president; B. R. Zautzinger, secretary; Edward Clarke, superintendent; George S. Dodge, Thomas Bell, Solomon Heydenfeldt, Wm. M. Stewart, A. W. Rose, Jr., trustees. Annual meeting, first Wednesday in September, 11 o'clock, A. M. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

The claim of this company lies on the same lode with the Mammoth Mine, elsewhere described in this book. The lode in the Lake Company's ground maintains the same large proportions exhibited in the Mammoth claim, which adjoins it on the north. A shaft has been put down here 50 feet. From its bottom a crosscut has been run showing a ledge 60 feet wide, and carrying high grade ore. A tunnel is to be started at once which will cut the ledge at a depth of 1,000 feet.

HENRIETTA GRAVEL MINING COMPANY.

BUTTE COUNTY, CALIFORNIA.

Office, 309 California Street. F. Mantell, president; F. Klostermann, secretary, Charles Zwick, F. H. Hausmann, F. T. Castelhun, F. Fisher, trustees. Annual meeting, second Friday in January. No. of shares, 100,000. No. of assessments, 3. Amount, 10c. Levied, June 7. Total assessments, \$30,000.

HIGHBRIDGE MINING COMPANY.

PHILADELPHIA, NEVADA.

Office, 310 Pine Street. Stephen Roberts, president; J. W. Pew, secretary; N. A. Garvin, superintendent; John F. Cassill, W. S. Gage, George R. Williams, Stephen Roberts, David Goodman, trustees. Annual meeting, fourth Thursday in August. No. of shares, 100,000. No. of feet, 6,000. Shares per foot, 16 $\frac{2}{3}$. Bullion yield, \$500,000. Listed on San Francisco Stock and Exchange Board.

The Highbridge mine includes several of the earliest locations made on the Highbridge lode, one of the most regular and strongly marked ore-bearing veins yet discovered in Central Nevada. This lode was discovered in 1865, and through its fine exhibit of surface ores drew at once a large population into the district. A party of eastern capitalists having purchased a number of these claims organized, and was incorporated under the name of the Combination Company. This done they proceeded to construct the largest and most costly mill ever put up east of Virginia City, building at the same time capacious dwellings, stores, stables, shops, hoisting works, etc., the entire expenditure made for these improvements, including cost of the mines, etc., having exceeded half a million dollars. After extracting over half a million dollars from the mines, suddenly the lode became faulted, and water coming in beyond the means at hand for its removal, the company suspended operations, and for several years this grand property lay dead, and so remained until recently, with the exception of one year, during which it was leased to a party of practical miners, who enriched themselves from the proceeds of the ore left in the upper levels. During the past year the entire estate has been sold to the present company, who, having organized, set diligently to work to find the faulted lode, which, after running but 13 feet west, was encountered standing in its normal position, the upper portion having, by some powerful surface movement, been advanced that distance to the east. While the company in this recovery of the Highbridge lode have insured the future success of their enterprise, they have also illustrated the value of perseverance in this branch of mining. Thus experience also demonstrates the manner in which the most regular lodes are sometimes broken off while it points to the direction in which search should be made to regain them. Since the restoration of the mine the new company have prospected the lode for a distance of 500 feet, along which space it varies from two to eight feet in width, carrying rich ores, enough to run their 25-stamp mill for a year. This company are now sinking their main shaft vigorously, repaired their mill and erected a white furnace, and put their entire property into good shape for extensive operations, and will soon be making a large and profitable bullion production.

HILLSIDE MILL AND MINING COMPANY.

BRISTOL DISTRICT, NEVADA.

Office, Room 28, 330 Pine Street. J. J. Corrigan, president; M. D. Howell, secretary; Eugene Blair, superintendent; A. J. Blair, J. J. Corrigan, Archie Borland, Camillo Martin, John B. McGee, trustees. Annual meeting, third Thursday in November. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 1-10th. Bullion yield, \$28,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock and Exchange.

The mine of this company, which is situated in eastern Nevada, near the Utah line, produces large quantities of fine smelting ore, that yielded an average of \$100 per ton. The lode, now opened to a depth of 170 feet, ranges from 3 to 15 feet in thickness. The company have already put up a smelting furnace, having a capacity of 30 tons per day. On the first experimental trial of nine days, bullion to the value of \$28,000, was run out. The company are now putting up hoisting works, and expect, when they resume operations, to continue without further interruption, as they have an ore body valued at \$700,000 already in sight. On the 85-foot level a drift has been run off 80 feet, and on the 130-foot level another has been run off

60 feet, both of which are in good ore. The extent of the ore body on the lowest level has not yet been fully determined, though known to be large across. This ore smelts readily, the only addition required being a small amount of quartz. The furnace of the company is located a mile below the mine, where there is a fine spring of water, and about which the town of Bristol has sprung up. A good wagon road has been built up the cañon for taking material up to the mine and bringing ore down. The bullion turned out here assays \$455 per ton, and it is calculated that with their present facilities for smelting that about \$3,000 will be turned out per day. This mine is under a good management, is now being operated successfully, and has a bright future before it.

HOMESTAKE MINING COMPANY.

BLACK HILLS, DEADWOOD, DAKOTA TERRITORY.

Office, 327 Pine Street. Lloyd Tevis, president; D. F. Verdenal, secretary; Samuel McMasters, superintendent; Lloyd Tevis, George S. Dodge, Henry Janin, William Willis, M. L. McDonald, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessments, 2. Amount, \$1 per share. Levied, April 8, 1878. Total assessments, \$200,000. Listed on San Francisco Stock and Exchange Board.

The Homestake was among the first Black Hill properties bought in the interest of California capitalists, having been purchased by George Hearst, in conjunction with J. W. Gashwiler and Henry Janin, early in the month of April last. The mine, which embraces a number of valuable claims, covers an area of 1,500 feet long by 450 feet wide. The many tunnel and shaft openings in every part of it give evidence that the Homestake is one great, continuous body of paying ore. The most systematic and thorough developments have been made to test the real value of the property, and the result has been the erection of an 80-stamp mill and the preparation to work the mine by all appliances that will procure a steady yield of bullion. Other mills will soon be erected, and the day is not far distant when the operations of the Homestake company will rival the largest schemes of the Comstock. The average yield of the ore per ton will not fall short of \$15. The mill capacity is fully 175 tons per day. Here, then, we have nearly a million dollars as the result of one mill for a single year. Samuel McMasters, a most capable and reliable man, has been appointed superintendent of the mine. The mill, which sits directly on the mine, has been built of the finest seasoned pine lumber, and has dimensions of 100 feet front, 120 feet deep and 56 feet from floor to floor. Every part of the construction has been conducted by expert mechanics, and the mill is a model of mill architecture. Two immense ore bins, having a capacity of 2,000 tons, have been erected, and into these the ore is dumped by the cars from a tramway running from the mine into the upper portion of the building. From these the ore passes over screens, the fine particles going into bins, and the coarse to the two Blake ore-breakers and then into the bins where it is fed to the batteries by the Hendy self-feeder. Over 100,000 feet of lumber were used in the construction of the main building.

THE MACHINERY

Consists of two boilers 54x16, having 200-horse power, accompanied by a splendidly built and finished engine 20x42. The battery consists of 80 stamps, weighing 750 pounds each; two Blake rock-breakers, 9x15 each, and the Hendy self-feeder mentioned above. The entire weight of machinery is 496,000 lbs., the freight upon which alone cost the snug sum of \$38,000. The mill cost fully \$100,000. The batteries will have a capacity of from 175 to 200 tons per 24 hours, or more than two tons of average quartz per stamp. The entire machinery was furnished by Prescott, Scott & Co., of the Union Iron Works, San Francisco.

THE HOISTING MACHINERY

Consists of two 12x24 engines of 75-horse power, which are capable of raising two tons 400 feet per minute; two reels for hoisting, supplied with a steel-wire cable which will sink to a depth of 1,000 feet. This cable is a most powerful and costly one, being two and three-fourths of an inch in diameter, weighing one pound and a quarter to the foot. Added to this is a six-inch drawing and lift pump with five-foot stroke, having a capacity of 5,000 gallons per hour. The entire enterprise is one of immense proportions and one that will be a profitable monument to the nerve and money of San Francisco capitalists. Mr. Hearst has taken the lead in the Black Hills quartz reduction, and the coming years of steady Homestake bullion shipments will record the wisdom of his extensive, systematic and fearless operations. This immense and splendidly appointed structure is now in operation turning out gold bullion at the rate of about \$90,000 per month, a production that can probably be kept up for many consecutive years, and may easily be increased with additional milling facilities.

HONEYCOMB GOLD MINING COMPANY.

YUBA COUNTY, CALIFORNIA.

Office, Room 20, Safe Deposit Building, 323 Montgomery Street. Frederick Schumacher, president; Otto Metchke secretary; John Tonkin, superintendent; Frederick Schumacher, F. M. Biber, John Tonkin, Otto Metchke, Charles Lunt, H. Fritzsche, trustees. Annual meeting, first Tuesday in January. No. of shares, 60,000. No. of feet, 3,000. Shares per foot, 20.

HORNET MINING COMPANY.

TUSCARORA, TUSCARORA COUNTY, NEVADA.

Office, 327 Pine Street. J. W. Gashwiler, president; D. F. Verdenal, secretary; D. J. Jones, superintendent; J. W. Gashwiler, S. F. Gashwiler, Geo. W. Kidd, S. Reinhart, A. Eastland, trustees. No. of shares, 100,000. No. of assessments, 3. Amount, 10 cents. Levied, January 30, 1878. Total assessments, \$30,000. Listed on San Francisco Stock and Exchange Board.

HUDSON GOLD MINING COMPANY.

ROUGH AND READY, NEVADA COUNTY, CALIFORNIA.

Office, Room 6, Safe Deposit Building. A. Snider, president; S. D. Rogers, secretary; S. T. Murchie, superintendent; A. Snider, E. G. Waite, R. B. Gentry, S. E. Olmsted, I. Strassburger, James S. Murchie, S. D. Rodgers, trustees. Annual meeting, third Monday in February. No. of shares, 50,000.

This property, which consists of a gold-bearing quartz lode, is situated 12 miles northwest from Nevada City, on what has heretofore proved to be one of the most prolific sections of the great California gold belt. The location is an early one, the claim having been originally known as the Scandinavian, and has long enjoyed the reputation of being one of the best in the district. The vein here, which is about 6 feet in width, is well defined and has every feature of permanence. It has been opened by shaft and tunnel, affording good ventilation and ample facilities for ore extraction. The mine is outfitted with first-class steam hoisting and reduction works, the latter having a crushing capacity of 15 tons per day. The mill, recently started up, gives the utmost satisfaction, and is making a large and profitable bullion production, the ore here yielding from \$35 to \$40 per ton. The gold is so free that the most of it is saved by concentration, the ore being worked up very closely by the least expensive of all methods. This company, which was incorporated in April last, is out of debt, all improvements on the mine having been paid for without nearly exhausting the working capital. As the property must very soon be earning large net profits, shares are held very firmly.

HUMBOLDT MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 13, Safe Deposit Building. R. B. Sanchez, president; W. Letts Oliver, secretary; G. H. Howard, superintendent; H. C. Hyde, W. W. Morrow, A. P. Williams, G. F. Sharp, R. B. Sanchez, trustees. No. of shares, 100,000. No. of feet, 1,500.

This mine, which adjoins the Bodie on the south, and comprises 1,500 by 100 feet, lies right in the path of the richest lodes in the district as they travel toward the south. Its position, therefore, apart from other considerations, impresses upon this property a peculiar value. A shaft has been sunk on this claim to a depth of over 100 feet. When 50 feet more shall have been added a drift will be run west to cut the Bulwer and Belvidere lodes, and at somewhat greater depths a second drift will be run in the same direction to the Burgess vein, all of which pass through the Humboldt ground. The company propose to sell enough shares at bed-rock price to defray cost of preliminary work and purchase of hoisting machinery, etc. These shares, the most of which are already disposed of, are to be obtained at the company's office. We consider them a good investment.

HUSSEY CONSOLIDATED GOLD AND SILVER MINING COMPANY.

CORNUCOPIA, NEVADA.

Office, San Francisco Stock Exchange. J. W. Hussey, president; R. H. Brown, secretary; J. M. Wilson, superintendent; J. W. Hussey, F. M. Smith, J. F. McGoghegan, J. W. Souther, John Turner, trustees. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{4}$. No. of assessment, 6. Amount, 25c. per share. Levied, Oct. 1, 1878. Total assessments, \$95,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The Hussey Consolidated consists of the two locations, Hussey and Geneva. The Hussey joins the Leopard on the north. The Geneva is an east and west location, joining the Panther on the west. The Hussey has good hoisting works, and a shaft 500 feet deep. Most of the bullion product has come from an east and west lode, but at the present time the third, fourth and fifth levels are being extended west to prospect through the Leopard lode, which runs north and south through the Hussey; the rich chute of ore found in the Leopard being known to enter the Hussey ground below the 230-foot level. The ledge formation is wide—between 200 and 300 feet—and the material filling the crevice, as well as the ore, closely resembles the Comstock. The country rock also is similar, being porphyry on the east and sienites on the west. The ore on the north and south lode, or "Leopard," as it is called, is a rich sulphuret, carrying some ruby and stephanite, and is very friable. In the east and west lode it is very hard, and carries chlorides to a greater depth.

IDA LIVINGSTONE MINING COMPANY.

KELSEY DISTRICT, EL DORADO COUNTY, CALIFORNIA.

Office, 517 California Street. H. M. Rosekrans, president; F. P. Latson, secretary; H. M. Rosekrans, Dr. J. Ingerson, F. Tully, Saml. Dinsmore, H. Z. Oakes, trustees. Annual meeting, February 13. No. of shares, 60,000. No. of feet, 575,000 (square feet). Shares per foot, 957. No. of assessment, 5. Levied Oct. 1, '77; Jan. 13, '78; July 2, '78; August 19, '78. Total assessments, \$6,900. Bullion yield, \$192.88.

This mine is located in Kelsey District, El Dorado County, six miles from Placerville, in a northeasterly direction. A shaft has been sunk about 100 feet, with two drifts at the 100-foot level; a ledge is found at a distance of forty feet, twenty inches wide, assaying, lowest grade, \$213 per ton; the highest grade, \$872.26. The mine promises well, and has now about forty tons of fine rock on the dump.

INDEPENDENCE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. L. Browne, president; R. H. Brown, secretary; John McNally, superintendent; J. L. Browne, G. W. Grayson, M. Herman, George Briton, Henry Williams, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 3.

Amount, 15c. per share. Levied, February 19, 1878. Total assessments, \$55,000. No. of dividend, 3. Amount, 25c. per share. Paid, August 20, 1878. Total dividends, \$75,000. Bullion yield, \$178,651.57. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

Four prospecting shafts are being put down here, both in the vein matter. No. 1, located 90 feet from the south line, has been sunk to a depth of 103 feet. From its bottom a drift has been run south to the boundary of the claim, and another north 140 feet. In the former low grade ore has been met with, and in the latter ore that mills \$50 per ton. Shaft No. 2, 507 feet north of No. 1, is down 175 feet. At points 25 and 40 feet below the surface, crosscuts have been run east, both cutting the vein which showed considerable high grade ore. On the 90-foot level of this shaft two drifts were run off, one 126 feet north and the other 400 feet south, both cutting ore of a higher grade than any met with above. Encouraged by their excellent prospects the company determined to put down a double compartment vertical shaft, which has now reached a depth of over 200 feet. This shaft is well timbered and supplied with steam hoisting works, pumping gear, etc. At a depth of 175 feet a crosscut was started from this shaft and continued a distance of 176 feet. One hundred and three feet in an unlooked for vein was cut and a drift run along it 842 feet. Eighty-eight feet from this crosscut a drift was extended to the ledge, following along it 30 feet north where this ledge was intersected by another which carried ore of excellent promise through a drift run south on it for 60 feet. Shaft No. 3, located 543 feet north of No. 2, is down 27 feet. Shaft No. 4, standing 160 feet north of No. 3, is down 50 feet. Drifts run from this shaft south 40 and north 50 feet are both in ore, and there can be little doubt but this ore body reaches to the north boundary of the claim, the ore now in sight in the various stopes and levels being estimated at 2,000 tons. During the past year the company have worked at the Windsor and Independence mill 2,920 tons of ore that have yielded \$178,650, an average of over \$60 per ton. The cost of extracting and milling this ore has averaged about \$15 per ton. This company own one-half of the Independence mill and furnace, which, together with the hoisting works, are well constructed and in good working order. This mill and furnace cost \$31,000, and the hoisting works \$10,000. Besides ore on the dump they have over \$20,000 worth of tools, supplies, etc. on hand. The receipts of the company have amounted to \$240,313 during the year, and expenditures to the same. Their shipments of bullion have been uninterrupted and are likely to continue in the future.

INDEPENDENCE TUNNEL AND MINING COMPANY.

KEARSARGE DISTRICT, INYO COUNTY, CALIFORNIA.

Office, 408 California Street. John Neale, president; A. T. Crocker, secretary; A. Caldwell, superintendent; John Neale, Geo. B. Hibbard, J. J. Rey, F. Homer, E. D. Farnsworth, trustees. Annual meeting, first Tuesday in February. No. of shares, 100,000. No. of feet, about 3,800.

This is a California incorporation, organized to explore and work the series of parallel lodes owned by them in the Kearsarge District, Inyo County, by means of a deep lying tunnel. The property of this company, aside from improvements made, consists of the Independence Tunnel site and the parallel lodes lying near each other, and named respectively the Potosi No. 1, 2, 3, and 4. The object of this tunnel is to open up and render available by the most economical plan, the ore contained in the company's own mines, and also afford a means whereby other mines in the vicinity can be drained and worked through drifts connecting with the main adit, this being the only manner in which such mines can be worked to good advantage. The location of this tunnel is such that, when driven, it will not only develop the company's mines to a great depth, but also several other valuable lodes lying in its path; and as these latter will, without any question, be worked through it, a considerable revenue to the company must accrue from this source. The development of the mines owned by the company will, however, constitute the main object of constructing this adit, on which the work already commenced will be driven ahead vigorously and without cessation, until completed.

In its course, this tunnel will intersect the several lodes that cross its path, in the following order and at the depths and distances in from its mouth herein mentioned, viz.: Potosi lode, No. 4, 700 feet in, at a depth of 415 feet; Potosi No. 3, 1,100 feet in, at a depth of 650 feet; Potosi No. 2, 1,350 feet in, at a depth of 850 feet; Potosi No. 1, 1,650 feet in, at a depth of 1,000 feet; Boomerang, 1,775 feet in, at a depth of 1,150 feet; Rex Montis, 2,036 feet in, at a depth of 1,320 feet, and the Mountain View, 3,035 feet in, at a depth of 1,716 feet: the last three lodes mentioned belonging to the Rex Montis company. As will be seen from this showing, the facilities for tunneling are here very great, a little over 3,000 feet of adit establishing a backing of more than 1,700 feet.

The lodes of both these companies have been examined by several competent experts, all of whom pronounce them to be strong, well marked fissure veins, rich in the precious metals. Potosi No. 4, the lowest in the group of veins belonging to the Independence company, has a width of about 12 feet on the surface, No. 3 being 16, while No. 2 and No. 1 are each about 6 feet wide. These, in common with most of the veins here, have a northwesterly strike, and occur in a formation composed of sienite, porphyry and granite, corresponding with the country in the neighborhood of the Comstock Lode. This is undoubtedly a formation most favorable for deep fissured and permanent veins, the talc slate that here follows the ore belt, being another feature pointing strongly to persistence and fertility. In the development of large quantities of high grade ore in these mines, the above favorable geological indications receive further and ample

verification. On Potosi No. 4, an open cut has been made for a distance of about 100 feet, all in first-class ore. On No. 3, a drift has been run 40 feet, disclosing a stratum of good ore three feet thick. No. 2 shows a 6-foot vein, all composed of a fine quality of ore, the showing on No. 1 being also most encouraging.

The mass of workable ore from these mines will, it is calculated, mill about \$200 per ton. They carry 12 per cent gold and 88 per cent silver, and are so little contaminated by base metals, that they can be worked up to 85 per cent. of their assay value by the simplest mill process, giving bullion 900 fine. The ore is a clear, lively quartz, carrying horn silver and sulphurets of silver. The veins here all produce ore of an excellent quality from the surface, the developments made establishing that it improves with depth, both as regards bulk and purity, the results reached in the Rex Montis mine, opened to a depth of 500 feet, being quite conclusive on that point.

The Independence company has already a good deal of rich ore on their dumps, which quantity will be steadily added to in the future, the ore accumulating at the same time that the tunnel is being run. Assays of ore from these veins as well as the Rex Montis, run up into very high figures, many of the samples assayed being as rich as any ever taken from the Comstock mines. Pieces of mineral taken out here have, in fact, come so near being pure silver that they might be called metal rather than ore. Thirty-six pounds of this material has been known to produce as much as 32 pounds of silver, beside some gold. One of the original locators of these lodes, being without means, managed to support himself and defray all expenses while prospecting them, by the proceeds of the ore which he first rendered friable by roasting on a pile of wood, after which it was crushed in a hand-mortar, and the metallic portions being washed out, were melted into a bar in crucibles. Even by this crude method of reduction, fair wages could be made.

In view of the ore exhibit made here, a mill of large capacity will become with the company an early necessity. In close proximity to the mines exist good mill sites, both water and timber abounding here in unlimited quantity; water is in fact so plentiful that it can be extensively employed for the propulsion of machinery. The entire cost of mining, hauling and milling the ores will not exceed \$10 per ton.

The tunnel right secured by this company constitutes, under the circumstances, a very valuable franchise, inasmuch as the altitude of these mines, varying from 10 to 12,000 feet, precludes surface work being advantageously prosecuted during the Winter. But aided by this tunnel, which enters the mountain at an elevation of 11,000 feet, 2,000 feet below its summit, mining operations can be carried on uninterruptedly at all seasons of the year. This right was located in August, 1877, under the Congressional law giving locators of tunnel claims ownership to all blind lodes encountered throughout a distance of 3,000 feet, and extending 750 feet on each side of the tunnel, or 1,500 feet on either side, as the owners may elect. The first section of this work to be built will be five feet by seven, a size sufficient for laying down a single track. After lode No. 4 is reached, it will, however, be so enlarged as to accommodate a double track. Through the employment of Burleigh drills the work will be pushed forward very rapidly as well as cheaply, the ground to be penetrated being so firm that it will stand without timbering.

The capital stock of the company is \$10,000,000, divided into 100,000 shares, of the par value of \$100 each. Their titles to these various properties is perfect, the claims having been purchased from the original locators, and the amount of work required by law having been done upon them, surveys have since been made preparatory to making application for U. S. patents to all their property.

This plan of the Independence Company for exploring the entire band of mineral bearing lodes that here traverses the northerly slope of the Kearsarge Mountains, is so manifestly the proper one to be adopted that it has met with the unqualified approval of every mining engineer who has examined the property, or had his attention called to the subject. It is, in fact, a grand and commendable enterprise, alike attractive to the mining expert, the capitalist, and others seeking a safe and promising investment.

INDIAN QUEEN MINING AND MILLING COMPANY.

ONEOTA, ESMERALDA COUNTY, NEVADA.

Office, 69 Nevada Block. George Congdon, president; A. K. Durbrow, secretary; T. J. Hubbard, superintendent; George Congdon, A. E. Davis, Grove Adams, Edward Barron, Daniel Cook, trustees. Annual meeting, fourth Tuesday in April. No. of shares, 60,000. No. of feet, 1,000. Shares per foot, 60. No. of dividends, 2. Amount, 50 cents each. Total dividends, \$60,000. Bullion yield, \$346,863.78. Listed on San Francisco Stock and Exchange Board.

As will be seen by the above statistics, the Indian Queen is one of those mines which has become dividend-paying, without ever levying an assessment. The mine has produced \$346,863.78, of which \$60,000 has been bestowed on the stockholders, and the remainder expended for machinery, to aid in opening up and developing the mine. This is what is termed a base metal mine, its ores being an argentiferous copper, combined with zinc, lead, antimony, etc. In the process for extracting the silver, the metal is melted with the copper, and formed into bars, containing from 350 to 400 parts in the 1,000 of silver. All the other metals are lost. This base bullion, as it is called, is bought here by agents of smelters at Swansea, Wales.

The developments on the mine show an increased volume of the ore bodies.

INSURANCE MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 2, Nevada Block. R. F. Bunker, president; M. Landers, secretary; John F. Eagan, superintendent; R. F. Bunker, R. G. Brown, John Landers, C. P. Ferry, G. W. Brittan, trustees. Annual meeting, September 4th. No. of shares, 30,000. No. of feet, 2,000. Shares per foot, 15. No. of assessments, 2. Levied, September, 1875. Total assessments, \$105,000. Bullion yield, \$50,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Insurance adjoins the Andes on the west. It was formerly prospected through a tunnel starting below the Andes, and running 480 feet into the hill. This encountered the ledge and ore, running from \$40 to \$50. The ore body was followed by an incline a long distance, and finally abandoned. Work has recently been resumed. A working shaft has been started, and is making good progress toward the vein below. The ore, which was formerly abandoned as too poor to pay mining and milling, will now pay a large profit over both, and at the same time develop the mine and follow the prospects of something very much better further down.

JEFFERSON SILVER MINING COMPANY.

JEFFERSON, NEVADA.

Office, Room 20, 331 Montgomery Street. John L. Gray, president; C. A. Sankey, secretary; John S. Gray, A. H. Rutherford, George R. Williams, C. X. Hobbs, H. Mayers, trustees. Annual meeting, fourth Thursday in January. No. of shares, 50,000. No. of assessment, 4. Amount, 50c. per share. Levied, April 13th, 1877. Total assessments, \$95,250. No. of dividend, 2. Amount, \$25,000. Declared, May 15th, 1875. Total dividends, \$50,000. Bullion yield, \$300,000. Listed on San Francisco Stock and Exchange Board.

The claim of this company is situated in Nye County, Nevada, and joins the Prussian mine on the north. Prospecting has been carried on through a shaft 500 feet deep, and levels, each 100 feet. The croppings of the ledge are very extensive, and the vein where cut is from four to six feet wide, containing ore which assays from \$100 to \$1,000 per ton. The company have steam hoisting works and a 15-stamp mill, and with the facilities at command can mine and mill their ores at a cost of about \$17 per ton. The mine is now 700 feet deep, and having been idle for some months, the late superintendent, L. J. Hamlett, has resumed operations under a six-months' lease from the company, with cheering prospects of encountering paying bodies of ore.

JENNIE A. AND BLACK ROCK MINING COMPANY.

WHITE PINE, NEVADA.

Office, Room 6, 318 Pine Street. W. H. Duren, president; J. V. Clark, secretary; J. R. Kendall, superintendent; W. H. Duren, F. Cutting, J. R. Kendall, D. Wilder, E. B. Pond, trustees. Annual meeting, last Saturday in July. No. of shares, 100,000. No. of feet, 8,100. No. of assessment, 2. Amount, 15c. per share. Levied, November 17th, 1877. Total assessments, \$15,000.

This property consists of five mining locations on White Pine Mountain, Nevada, contiguous to each other and consolidated into one property, together with 960 acres of land, with timber and water-rights thereon. The work upon the mines has exposed a well-defined ledge of gray carbonate ore, similar in character to the smelting ores of the Eureka Mining District. As soon as the company feel justified, furnaces will be erected, and the reduction of ores energetically prosecuted.

JOE SCATES CONSOLIDATED SILVER MINING COMPANY.

VIRGINIA MINING DISTRICT, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, third Saturday in February. No. of shares, 100,000. No. of feet, 540. No. of assessments, 3. Amount, 25c. per share. Levied, December 18, 1877. Total assessments, \$70,000. Listed on San Francisco Stock and Exchange Board.

The Joe Scates Consolidated Silver Mining Company was incorporated November 11, 1875, on claims which were located in June, 1860, being among the earliest located in Virginia District. The original ground was 4,600 feet, which was divided in July, 1876, into seven companies, the original company retaining its old name and organization. The names are as follows: Mount Hood, Vancouver, George Douglass, Joe Scates, de Haro, Tolo and Sabine. The developments since that time, made through the Joe Scates shaft and the Suro Tunnel, prove that these mines are on one of the largest ledges of the Comstock belt, being on the east ledge, toward which all the older companies on the original Comstock are now running their east drifts, and to which they are looking for new bonanzas. The Joe Scates has hoisting works and a shaft 300 feet deep. The locations of these mines are now looked to by the mining public with increasing and absorbing interest as the virgin ground for new ore bodies. The location is immediately east of and adjoining the great bonanza-bearing mines of the old Comstock, which mines, as they are worked out, must give place, in the public opinion and interest, to the new mines on this unexplored region of the Comstock—from the fact that the future workings eastward of the old bonanza mines must necessarily bring them directly into the possession of the Joe Scates Consolidated series of mines, as given above. The value and importance of the Suro Tunnel to the developments and working of these mines cannot be too highly estimated, as is already in part proven by the tunnel having opened a ledge 60 feet wide, at a depth of 1,650 feet, in the Mount Hood ground. The entire group of seven mines can be worked by means of the north or lateral branch of the Suro Tunnel, thereby saving the expenditure by each company of probably \$1,000,000 in hoisting and pumping works, and of course obviating the necessity of that amount of assessments—an aggregate saving of at least fifteen million dollars.

JULIA CONSOLIDATED MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 5, 419 California Street. Thomas Cole, President; J. M. Livingston, vice-president; A. Noel, secretary; Frank M. Thayer, superintendent; Thomas Cole, J. M. Livingston, C. W. Kellogg, Archie Borland, Geo. W. Grayson, trustees. Annual meeting, second Wednesday in August. No. of shares, 110,000. No. of feet, 3,000. Shares per foot, 30½. No. of assessments, 6. Amount, \$1.00. Levied, Sept. 6, 1878. Total assessments, \$332,500. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Julia lies directly east of the Bullion and Chollar-Potosi. When the number of mines which have taken up positions and are continually working to the east is considered, the value of eastern locations cannot be too highly prized. This is an early location, the ground having been taken up in 1860. The work of development is being urged forward here with a rapidity unexcelled on the Comstock. The mine is being opened by means of a perpendicular shaft of large dimensions, which has now reached a depth of 2,000 feet. Much prospecting has been done on the various levels. The explorations carried on in the 1,600, the 1,800 and 2,000-foot levels having been thorough and extensive, the most of the work performed during the past two years having been on the last two mentioned. The shaft cut the east country and entered ledge matter before reaching the 1,400-foot level, and has continued in the same ever since, having in its progress intersected some small veins containing good milling ore. The south drift, on the 1,600-foot level, was run entirely in a quartz formation of great promise. On the 1,800-foot level a drift has been extended south 1,400 feet, connecting with the Ward shaft. On this level 10 crosscuts have been driven through the ledge 100 feet, reaching the west wall. On the 2,000-foot level a drift has been extended south about 300 feet. From this drift two crosscuts have been carried east, both of which it is expected will, in the course of a very few days, enter the ore body known to exist at that point, it having already been bored into with the diamond drill. Latterly progress in these crosscuts has been slow, owing to the frequent breaking of the pump-rod and other mishaps, whereby much water accumulated in the lower level of the mine. This water has now been removed, the drift cleaned out and everything is working in the prime order. In drilling, the company make use of the Burleigh machine and compressor, having introduced many other improvements of recent date. If a veritable bonanza shall fail to be developed in this ground before this writing shall reach the public eye, the disappointment, even among disinterested and well informed mining men, will be general and profound.

As this mine makes a good deal of water on the 2,000-foot level, and which will be very likely to increase as greater depth is reached, the directors of the Julia Company have entered into a contract with the Sutro Tunnel Company, for the use of that adit for drainage purposes. Under this arrangement much less costly machinery will be required in the future working and exploration of the mine than would otherwise be necessary, better ventilation of its lower levels being at the same time secured.

JUSTICE MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 2, Hayward's Building, 419 California Street. J. P. Cavallier, president; R. E. Kelly, secretary; S. T. Curtis, superintendent; J. P. Cavallier, R. H. Lloyd, A. Borland, R. Sherwood, J. H. Dobinson, trustees. Annual meeting, first Monday in May. No. of shares, 105,000. No. of feet, 2,100. Shares per foot, 50. No. of assessments, 26. Amount, \$1.50. Levied, August 13, 1878. Total assessments, \$2,657,500. Bullion yield \$3,000,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Exchange Board.

The Justice mine is located on the southern portion of the Comstock Ledge, and a large amount of work has been expended in prospecting and developing the mining ground. Bullion to the value of \$3,000,000 has been obtained from the ore extracted and worked; but as the ore has been of low grade, the entire amount has been absorbed by cost of mining, milling, and labor of opening the mine—drifts having been run upwards of 1,800 feet in length on different levels. From the 300, 600, 800, 1,000, 1,150, and 1,300-ft. levels, ore has been taken, and crosscuts run on all these levels; but the ore obtained from the mine has failed to provide means requisite for necessary expenditures, and the Directors have been compelled to levy heavy assessments to cover the deficiency.

The Woodville Consolidated Silver Mining Company had a location on part of the ground owned by the Justice mine, and the Trustees, to avoid complicated and tedious litigation, purchased the controlling interest at a cost of upwards of \$500,000.

The former Directors had pursued such a course as to awaken distrust on the part of many of the large stockholders of the Justice, and in December, 1877, a complete change was made in the management; a committee was appointed to investigate the books and accounts of the company; that committee entered upon their labors and prosecuted them to a final result; their report was published and given to the stockholders in May, 1878, and suits at law commenced against the late Treasurers, Schultz & Von Bargen; late Superintendent, E. A. Schultz; and late Secretary, J. S. Kennedy, to recover amounts claimed to have been unlawfully expended. Sam. T. Curtis was appointed Superintendent in place of E. A. Schultz, and a most careful and rigid system of economy has been enforced, and the cost of milling reduced from \$11 per ton to \$9 per ton.

The mine is well provided with hoisting works, pumping machinery, etc., and the work

of sinking shaft, and opening new drifts and levels, is being vigorously prosecuted, with the confident expectation of obtaining ore of higher grade, and in sufficient quantity to place the mine, at no very distant day, among the list of dividend-paying mines.

The capital stock of the company consists of \$10,500,000, divided into 105,000 shares.

KELSEY GOLD AND SILVER MINING COMPANY.

KELSEY DISTRICT, EL DORADO COUNTY.

Office, Room 36, 330 Pine Street. H. A. Cobb, president; J. H. Sayre, secretary; B. O. Hodge, superintendent; H. A. Cobb, F. R. Wilson, C. E. Gillett, Henry De Veure, Fred MacCrellish, trustees. Annual meeting, September 29, 1878. No. of shares, 50,000. No. of feet, 5,340. Shares per foot, 9-31. No. of assessment, 17. Amount, 20c., \$10,000. Levied September 19, 1877. Total assessments, \$23,690.

KEYSTONE CONSOLIDATED MINING COMPANY.

AMADOR COUNTY, CALIFORNIA.

Office, Room 40, 310 Pine Street. J. M. McDonald, president; T. J. Shackelford, secretary; O. C. Hewitt, superintendent; J. M. McDonald, E. J. Crane, H. E. Robinson, trustees. Annual meeting, fourth Tuesday in January. No. of shares, 10,000. No. of dividend, 135. Amount, \$10,000. Declared July 10, 1878.

K. K. CONSOLIDATED MINING COMPANY.

EUREKA DISTRICT, EUREKA COUNTY, NEVADA.

Office, 49 Nevada Block, 309 Montgomery Street. A. E. Davis, president; B. B. Minor, secretary; J. A. Porter, superintendent; A. E. Davis, J. B. Haggin, J. J. Corrigan, Alex. Forbes, George Hearst, trustees. Annual meeting, first Friday in September. No. of shares, 50,000. No. of feet, 1,200. Shares per foot, 41-66. No. of assessment, 4. Amount, \$1.00. Levied, September 13, 1878. Total assessments, \$162,500. No. of dividend, 5. Amount, \$12,500. Declared (last) October 11, 1878. Total dividends, \$62,500. Bullion yield, \$1,609,311.85 Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

KENTUCK MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 310 Pine Street. M. L. McDonald, president; J. W. Pew, secretary; S. L. Jones, superintendent; M. L. McDonald, C. L. McDonald, C. B. Gould, R. H. Minister, J. M. Day, trustees. Annual meeting, fourth Wednesday in November. No. of shares, 30,000. No. of feet, 95. Shares per foot, 300. No. of assessment, 13. Amount, \$1. Levied, August 7, 1878. Total assessments, \$270,000. No. of dividend, 32. Declared, March 10, 1870. Total dividends, \$1,252,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is situated in the town of Gold Hill, and constitutes a portion of the ground worked profitably with arrastras before the more northerly sections of the Comstock Lode were discovered. The surface rock here was rich in free gold, and paid largely even when worked by the above simple means, the ores at greater depths having also produced gold equal to almost anything opened elsewhere on the great Washoe lode. The Kentuck occupies a position between the Yellow Jacket and Crown Point mines, and is worked through the shaft of the latter. The active development of the mine was for a considerable time suspended, pending the result of explorations on the lower levels of the Crown Point, which were in turn delayed by the water on the lower level of that mine. Recently, however, exploratory work on the Kentuck has been resumed, the joint shaft of the Crown Point and Belcher, now sunk to a depth of 2360 feet, having effectually drained the Kentuck ground, from the lower level of which a drift is being advanced east. This drift has already reached what is known as the old east ledge, on which an uprise is being made to ascertain its extent and value. Some small ore seams, yielding fair assays, have been cut in this ledge, and the company are hopeful that it will very soon afford a quantity of good milling ore. A drift on the 800-foot level of the Crown Point has been run north to the Kentuck ground, preparatory to crosscutting at that point. In the early days two streaks of ore were worked out in this part of the Kentuck ground, and what they are now going after is a supposed body of ore lying between those that were worked. Crosscutting will be commenced as soon as the drift shall be extended two-thirds of the distance through the Kentuck ground. The drift will eventually be pushed through into the Yellow Jacket. There can be little question but the promising developments being made in Crown Point will extend into this mine also. The Kentuck will, in fact, be likely to shaver largely any good fortune that may be in reserve for its neighbors, either on the north or the south.

KOSSUTH MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 3, 306 Pine Street. Edward P. Flint, president; Edward F. Stone, secretary; E. P. Flint, F. Brisac, G. H. Goddard, M. Greenwood, John Yule, trustees. Annual meeting, third Monday in January. No. of shares, 108,000. No. of feet, 2,700. Shares per foot, 40. No. of assessment, 8. Amount, 15c. per share. Levied, August 31, 1877. Total assessments, \$421,200. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Kossuth adjoins the Dayton on the south. The company have a United States patent for their ground, and the title is perfect. The surface indications, independent of the ledge croppings, were such as to lead to the conclusion that a vein of ore was lying below. The soil is composed of attrite ledge matter, and contains both silver and gold. Developments have been made on the 350 and 500-foot levels. On the former level a drift has been run south 700 feet, laying bare the ore vein, ready for crosscutting. A winze from the 200 down ventilates the drift perfectly. Drifts, both north and south, on the 500-foot level, have also laid bare the

vein on that level. The ledge is well defined, containing the matrix which at all points characterized the Comstock, and is from 60 to 130 feet in width, and the west wall has never been touched. That this will be found to concentrate below, and be ore-producing, there can be little doubt. Near the surface gold predominates. On the 200-foot level the ledge carried ore in bunches, and the stringers cut by the lateral drifts on the lower levels indicate an increasing amount of mineral with increasing depth. If Dame Rumor is correct, work in the Kossuth may be commenced very soon. If certain propositions of consolidation, which are under contemplation, be carried out on the plan proposed by one of the directors, they undoubtedly would give a very good result, and be of great benefit to all parties interested.

LA GRANGE DITCH HYDRAULIC MINING COMPANY.

STANISLAUS COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. G. T. Lawton, president; Jos. Messerer, superintendent; G. T. Lawton, J. Belden, A. W. Bowman, W. T. Babcock, O. F. Giffin, trustees. Annual meeting, first Monday in May. No. of shares, 50,000. Total assessments, \$287,500. Total dividends, \$110,000.

LADY BRYAN SILVER MINING COMPANY.

FLOWERY DISTRICT, STOREY COUNTY, NEVADA.

Office, 304 California Street. I. F. Thompson, president; Andrew Baird, secretary; John Kelly, superintendent; I. F. Thompson, T. C. Grant, W. S. Wood, C. F. Smyth, G. W. Hazleton, trustees. Listed on San Francisco Stock and Exchange Board.

This mine, after an uneven and chequered career, has passed at length, through the instrumentality of a sheriff's deed, into new and stronger hands. This transfer of ownership occurred about one year ago, since which the new owners have proceeded to outfit the property in a superior manner, supplying new and more powerful machinery where needed, and thoroughly repairing the old. The work of further exploration has, also, been prosecuted with unwonted vigor, it being the purpose of the new directory to open the mine with system, and on a scale commensurate with its obvious merit. The machinery here employed is scarcely second to any in the Washoe country. The management is first-class, the company out of debt, and great will be the disappointment in mining circles if a large and profitable ore body is not developed in this ground before the lapse of another year. There have, in fact, been opened out here already immense quantities of ore that under a prudent administration could have been made to yield a moderate profit. These ores, before neglected, or so badly handled that they failed to pay, will now, no doubt, be milled and be rendered a source of considerable revenue.

This is an early location, the Lady Bryan claim having been taken up in the Summer of 1859. It comprises 2,000 linear feet on a broad lode, or rather ore-channel, that here strikes across the country parallel with the Comstock ledge, from which it is separated by a space of about three miles. Like the great metaliferous belt further west, this channel carries large bodies of ore, some of high, some of medium, and others of low grade. In some cases, these ore bodies lie on or near the surface, and again at points far below. The belt of ledge matter varies here from 100 to 300 feet in width, its outlines being everywhere more distinctly marked than are those of its rival higher up against the face of Mount Davidson. Its surface exposure forms within the Lady Bryan limits quite a knoll, larger than any outcroppings on the Comstock except the quartz mound that constituted the original Gold Hill. Many thousand tons of this rock were quarried out and milled during the early history of the mine. As it carried a large percentage of free gold, with some silver, and could be easily reduced, it was worked, even in that day of high prices and great waste, with some accruing profit. While a good deal of work has been done, and large sums of money expended, on this mine, it has never been explored with thoroughness and system, former managers being content to open it in a hasty, make-shift sort of way. Caring only for immediate results, they went simply for the ore within easy reach. For years, nearly all work on the mine was suspended, the shares being used simply for speculative purposes. All this will now be changed, and the great twin lode of Washoe will have the benefit of ample means, applied in a judicious and business-like manner, for its further development. This mine has been equipped with a ten-stamp steam mill and steam hoisting works, the latter having capacity to carry exploration to a depth of 1,200 or 1,500 feet. The present workings, sunk to a depth of 600 feet, will now be extended laterally, and pushed downwards as fast as a strong working force, aided by the best modern appliances, can carry it. There are bonanzas in this broad ore-belt, and in due time this company will unearth them.

LADY FRANKLIN GOLD AND SILVER MINING COMPANY.

SILVER MOUNTAIN.

Office, Room A, 507 Montgomery Street. H. J. Tilden, president; F. E. Luty, secretary; H. J. Tilden, Crowson Smith, Francis Reichling, M. Shaw, J. S. Luty, trustees. Annual meeting, June 6. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50.

LADY WASHINGTON CONSOLIDATED MINING COMPANY.

GOLD HILL, NEVADA.

Office, Rooms 5 and 6, 302 Montgomery Street. R. N. Graves, president; W. H. Watson, secretary; E. D. Boyle, superintendent; R. N. Graves, John T. Hill, Archie Borland, Daniel Cook, Monroe Thomson, trustees.

Annual meeting, last Wednesday in July. No. of shares, 108,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Lady Washington lies between the New York and Justice mines. The works are located on the ridge rising east of the ravine leading from Gold Hill to Silver City; are easy of access, and have all the dump-room which will be needed. The location was made Dec. 23d, 1859, on a line of croppings which runs parallel with the cañon.

Contentions about title having arisen between the Lady Washington, Keystone, Benton, and Boyle, these several companies entered into an agreement not long since for readjusting their lines, which was effected on the following basis: The stockholders in the Lady Washington Company receive 54,000 shares of the stock of each of the new corporations of those companies, in lieu of the 60,000 shares now held by them; the stockholders of the Benton receive 54,000 shares of the Benton Consolidated; the stockholders of the Keystone receive the same number; and the shareholders of the Boyle receive 54,000 shares of the Lady Washington Consolidated—one share of stock in the Lady Washington entitling the holder to nine-tenths of a share in each of the new corporations. Under this new arrangement, the ground of the latter company is made to extend across Gold Cañon, lying, in relation to adjacent claims, in the position explained in the article on the Benton Con. mine. Since this remodeling, the company have secured their title by United States patent. With the quieting of these disturbing causes, this company have redoubled their efforts for the exploration of their ground, having hurried on the work previously commenced with the utmost vigor. There was considerable ore picked from the surface of the claim in early days, and milled with profit. The influx of water deterred the original owners, however, from making developments to any depth. This trouble recurring, the present company determined to master it at once and permanently; to which end they commenced, in 1873, sinking a main pumping and working shaft of three compartments. This shaft has been sunk to the 1,300-ft. level, and is being pushed actively downward. It is well timbered, and in every respect one of the most substantial structures of the kind on the Comstock. For relieving the mine of water, a monster pumping engine, similar in all respects to that at the C. and O. shaft, has been procured and placed in position, and 12-inch pumps introduced, at a cost of \$50,000. This arrangement has proved adequate and economical; and whether the flow be great or little, it is handled readily, the engine consuming no steam when not in action. The cost of the entire hoisting works, which are first-class throughout, has exceeded \$100,000. These works have power to sink to a depth of 3,000 feet. In the course of exploration on the mine, extensive drifts and crosscuts have been run, cutting into ore and promising vein material at many points. The company are in fact advancing with the certainty of developing here a veritable bonanza before sinking much further.

LEE MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 59, Nevada Block. H. H. Hobbs, president; W. R. Townsend, secretary; H. H. Hobbs, W. T. Duncan, A. Pray, W. C. Flint, J. W. Moyle, trustees. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 63½. No. of assessment, 1. Amount, 5c. per share. Levied, August 10, 1876. Total assessments, \$5,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine was located in 1863. A three-compartment shaft has been sunk 110 feet deep on the northerly part of the ground. The mine adjoins the Lady Washington and Boyle ground on the north. Work will be resumed on the mine in a short time, and suitable hoisting and pumping works erected.

LEEDS MINING COMPANY.

HARRISBURG, SILVER REEF, UTAH TERRITORY.

Office, 327 Pine Street. L. L. Robinson, president; D. F. Verdenal, secretary; G. F. Williams, superintendent; L. L. Robinson, Thomas Bell, Alexander Forbes, Louis Janin, W. P. Dewey, trustees. No. of shares, 60,000. No. of feet, 3,000. No. of dividend, 5. Amount, 20c. per share. Declared, January 25, 1878. Total dividends, \$60,000. Listed on San Francisco Stock and Exchange Board.

This mine has now been in operation since October, 1876, since which time it has paid five dividends of 20 cents each, aggregating one dollar per share, or \$60,000. There have been no assessments. The mine is now producing about \$20,000 per month, less discount on silver, which has this year varied from 10 to 13 per cent. The cost of running the mill and mine is about \$13,500 per month. The company owns a ten-stamp mill. The ore at present extracted is low grade, but so easily crushed that 40 tons can be reduced easily without running the ten-stamp more than 16 hours per day. The prospect work is being pushed rapidly ahead, and should another body of average ore be struck, dividends will be resumed. Meanwhile there is no probability of an assessment.

LEOPARD MINING COMPANY.

CORNUCOPIA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. Fred. F. Coffin, president; R. H. Brown, secretary; Jno. M. Wilson, superintendent; Fred. F. Coffin, H. H. Scott, Jacob Schleicher, Wm. O. Weed, trustees. Annual meeting, last Monday in December. No. of shares, 50,000. No. of feet, 1,500. Shares per foot, 33½. No. of assessment, 7. Amount, \$30 per share. Levied, June 10, 1878. Total assessments, \$180,000. No. of dividend, 6. Amount, 25c. per share. Paid December 15, 1876. Total dividends, \$162,500. Bullion yield, \$1,139,951.57. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

LEVIATHAN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room A, 507 Montgomery Street. C. W. M. Smith, president; F. E. Luty, secretary; John McMahon, superintendent; C. W. M. Smith, N. Atkinson, Henry Raymond, H. W. Massey, G. P. Theller, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50. No. of assessment, 7. Amount, three at 50c. per share, three at 25c., and one at 15c. Levied, May 29th, 1875, January 13th, 1876, May 19th, 1876, February 17th, 1877, September 10th, 1877, January 18th, 1878, May 28th, 1878. Total assessments, \$222,500. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, California Stock and Exchange Board, and New York Mining Stock Exchange.

This mine was located May 19th, 1863, in Gold Hill Mining District, Storey County, Nevada, on what is known as the East Ledge, lying about 1,000 feet in front and parallel to the main Comstock Lode, opposite the Crown Point and Belcher mines. The location is 2,000 feet in length by 200 feet in width. The vein crops nearly the whole length of the claim. Very little was done to explore this mine for ten years subsequent to date of location, but during the year 1874, the East Ledge was proven to be a true ore channel, and this mine, from its favorable location, soon found its way into the possession of a San Francisco corporation, when suitable machinery was erected, and the work of sinking a good working shaft immediately commenced. The work of developing the mine has been vigorously prosecuted for a period of four years, and a depth of 750 feet has been reached. The vein has been penetrated and explored to a greater or less extent on the 100, 200, 600, and 750-foot levels. On the 600-foot level the west wall of the ledge was penetrated ninety feet east from the shaft, and explorations were pushed both north and south on the vein for a distance of over 1,000 feet, showing a strong vein, of an average width of thirty feet, running nearly north and south, the walls, especially the west wall, being well defined. The ledge has an easterly dip of 48°. The vein matter on this level is quartz, soft porphyry and clay, with low grade ore; one point, however, showing a body of pay ore of considerable magnitude, which commenced to form a few feet above this level. An incline has been sunk in the foot wall of the ledge from the 600 to the 700-foot level, from which drifts are being run both north and south in the foot wall parallel with the vein, preparatory to crosscutting and exploring the vein at this depth. The steady and uninterrupted work of developing this mine, and the low average cost of the same, speak in terms of compliment to its managers, not usually accorded to the management of Comstock mines.

LEWIS CONSOLIDATED MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA.

Office, 310 Pine Street. W. H. Boothe, president; J. W. Pew, secretary; S. W. Blakeley, superintendent; Wm. H. Boothe, J. O. B. Gunn, W. S. Hopkins, H. T. Scott, W. H. Bluett, trustees. Annual meeting, fourth Wednesday in March. No. of shares, 60,000. No. of feet, 3,000. Shares per foot, 20.

This property is located in Pinal County, Arizona, three miles southeasterly of the Silver King, situated near Queen Creek, upon which it has a good mill-site. It is conveniently located for working, and indeed has remarkably excellent facilities for development. It is termed an iron-capped ledge, and appears on the surface to be large and well defined. The only work done so far is an open cut run across the ledge, in which is found some exceedingly rich argenteriferous lead ore. A contract has been let for sinking a shaft, and work has been begun. This shaft will fully develop the mine and determine its real worth. The location is regarded by mining experts as remarkably fine.

LEXINGTON MINING COMPANY.

GOLD HILL, NEVADA.

Office, 240 Montgomery Street. Silas Selleck, president; H. B. Congdon, secretary; Joseph M. Smith, H. B. Congdon, Silas Selleck, H. F. Morris, Edwin F. Selleck, trustees. Annual meeting, second Wednesday in May. No. of feet, 1,800. No. of shares, 100,000. No. of assessment, 1. Amount, 6c. per share. Levied, November 10, 1876.

The Lexington mine lies due south from the Caledonia, Overman, and Justice works, west from the Silver Hill and Succor, and north from the Atlantic Con., South End, etc. It commences about 1,200 feet south of the Justice works, and runs thence southerly 1,800 feet to American Ravine. The mine has been prospected by an incline shaft sunk on the ledge to a depth of 130 feet, and by a smaller shaft 30 or 40 feet deep, with drifts, etc., and also by a tunnel started from the ravine, which will strike the ledge at a depth of 800 feet below the croppings. The shaft shows a ledge from 10 to 12 feet wide, and produces ore giving assays from \$20 to \$50 per ton, of which several lots have been worked. For several years past, work has only been done yearly to hold the claim, but work in a systematic manner will soon be started. The indications of a paying mine have been pronounced to be excellent by some of our best miners and experts, and the location is in the direct line of important developments now being made, and is believed to be valuable.

LONE STAR AND ECLIPSE CONSOLIDATED MINING COMPANY.

COSO DISTRICT, INYO COUNTY, CALIFORNIA.

Office, 80 Nevada Block. B. B. Minor, president; Daniel Buck, secretary; J. S. Childs, superintendent; B. B. Minor, J. B. Haggin, Geo. Hearst, S. McMasters, Daniel Buck, trustees. Annual meeting, second Wednesday in September. No. of shares, 60,000. No. of feet, 3,000x600.

LOW RANGE LEDGE SILVER MINING COMPANY.

VIRGINIA.

Office, Room A, 507 Montgomery Street. Samuel Purdy, president; F. E. Luty, secretary; John McMahon, superintendent; Samuel Purdy, B. S. Bernard, J. S. Luty, S. L. Theller, E. N. Hooper, trustees. Annual meeting, fourth Monday in October. No. of shares, 100,000. No. of feet, 2,000. Shares per foot, 50. No. of assessment, 2. Amount, 2c. per share. Levied, September 11, 1876, April 2, '78. Total assessments, \$4,000.

MAMMOTH BAR GOLD MINING COMPANY.

MIDDLE FORK AMERICAN RIVER.

Office, Room 15, 310 Pine Street. M. P. Dewey, president; J. W. Pew, secretary; M. P. Dewey, James M. Seawell, Rufus Shoemaker, A. H. Hagadorn, George C. Ludington, trustees. Annual meeting, fourth Friday in July. No. of shares, 100,000. No. of acres, 40.

During the past few years, a new style of placer mining has begun to be introduced in California, and which, where the conditions are favorable, is likely to be attended with much success. There are, along the auriferous rivers of the State, bars that occupy what were the former beds of these streams, the latter having been diverted from their courses at these points and forced to make for themselves new channels. As the lower and richer portions of these bars lie below even low-water mark, they cannot be worked without provision being made for relieving them of the seepage water, which generally comes in in such quantity as to require powerful pumping machinery for its removal. As such machinery is rather costly, only parties having command of some means can embark in this kind of mining with much hope of success, such as have tried it with inadequate appliances of this sort, having generally failed. As it is only this bottom stratum that is rich in gold, it becomes desirable that this alone should be removed, the superincumbent mass, which has already been worked over, being left undisturbed. To effect this purpose, a shaft is sunk as low or a little lower than the bottom of the bar to be worked, and a tunnel driven in to the latter. As much of this rich stratum as will pay, is then drifted out, and through the tunnel and the shaft brought to the surface, where it is washed in sluices, the water pumped out through the shaft being used for that purpose.

It is for the prosecution of an enterprise of this kind, that the above company has been formed, the site of their operations being what is known as Mammoth Bar, situated on the middle fork of the American River—a classic locality in the mining annals of California. Half a mile below this is "Murderers' Bar," fitly named for the tragic event that occurred there in the memorable year '49. Hardly anywhere in California have the river bars paid better than along this stretch of the middle fork, their enrichment having been due to the destruction by this stream of various "dead rivers" that, in the Pleocene Age, traversed this section of country. Among these bars the Mammoth, besides being one of the largest, as its name implies, has been one of the richest. The method by which the company will attack it, will be the one above described. In sinking their shaft, they have it in contemplation to contract with the Western Well-Boring Company to do this work by the novel plan of boring with a sort of huge pod auger, capable of cutting a hole six feet in diameter. A strong wooden tube, following the auger, is forced into this excavation as it advances downward. If this plan of sinking a shaft shall be here found practicable, it will much expedite and cheapen the construction of the work. As this company have a rich locality upon which to operate, and possess ample means to do thorough work, the enterprise can hardly fail to eventuate in a great success. Having completed their surveys and other preliminary arrangements, the business of opening up the ground will commence in a few days.

MAMMOTH MINING COMPANY.

LAKE, MONO COUNTY, CALIFORNIA.

Office, 302 Montgomery Street. George S. Dodge, president; B. R. Zantinger, secretary; Edward Clarke, superintendent; George S. Dodge, Thomas Bell, Solomon Heydenfeldt, Milton Lambeth, A. W. Rose, Jr., trustees. Annual meeting, third Tuesday in June. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

This mine is located fifty miles south of Bodie, near the summit of the Sierra Nevada Mountains, and about five miles from the headwaters of the San Joaquin River. The entire surrounding country is densely timbered with tamarack, pine, and fir. Close to the mine are eight mountain lakes, main sources of the Owens River. The company is vigorously at work developing their property, having already put up a first-class 20-stamp mill, driven by water-power, to which the ore is carried from the mine by chute and tramway. In view of the large quantity of ore the mine is likely to yield, it is proposed to increase the number of stamps as soon as possible. This lode, which carries a rich gold and silver-bearing ore, is from 60 to 70 feet in thickness, and crops out in great strength. The ore resembles that from the Comstock Lode, and assays at the rate of about \$75 per ton. The ore in sight is estimated at about eighty thousand tons. The tunnel being driven will cut the lode at a depth of one thousand feet below the croppings, and will afford an adit for drainage and ore extraction to that depth. The company's mill has just started up, and bullion shipments are expected to be kept up continuously in the future.

MANHATTAN SILVER MINING COMPANY.

REESE RIVER, LANDER COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. John A. Paxton, president; John Crockett, secretary; Allen A. Curtis, superintendent; C. P. Hubbell, W. S. Gage, J. S. Porteous, John A. Paxton, A. K. P. Harmon, trustees. Annual

meeting, first Wednesday in February. No. of shares, 50,000. No. of feet, 129,810. No. of dividend, 8. Amount, \$50,000. Declared, February 1, 1877. Total dividends, \$400,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The mines, reduction works and various other properties of this company are situated on Lander Hill, an eminence immediately adjacent to and overlooking the town of Upper Austin. The mines of the company, comprising 126 different claims on a great number of distinct lodes, are all early locations, the company itself being one of the pioneer organizations of the district. These claims cover mineral-bearing veins to an extent measuring 129,810 linear feet, and embrace most of the valuable lodes on Lander Hill. The area of mineral land here owned by the company and secured by United States patents amounts to 159 acres. This, if not the largest tract of mining ground so secured in the State, covers no doubt the greatest number of fertile veins contained in any such tract, there being in Lander Hill, as deep explorations show, numerous blind lodes in addition to the great number traceable by their surface croppings. As these lodes lie mostly near and parallel with each other, the plan of exploring them by means of incline shafts and crosscuttings from the one to the other has been adopted. By this method lodes that in some instances have, in their upper sections, been "faulted," have been recovered in the lower workings, where also, if the ore chimney is found to pinch or go out at one point, the supply is ample at some other. These bonanzas, though narrow, are numerous and rich, the quality of the ores holding up well so far as the mines have been opened. A number of these shafts have been sunk at different points, some of them to a depth of over 800 feet, to which level the entire series of lodes has been pretty thoroughly explored. The ledges on Lander Hill are generally narrow, varying in width from two to four feet; but they are apt to be compact and regular and carry large quantities of high grade ore of the sulphuret and ruby varieties. The mines have now been worked for about 16 years, for over 12 years very actively, the product of bullion during this time having averaged over \$100,000 per month—fully one million and a quarter per year. The yield of the ore throughout this period has been at the rate of \$250 per ton, a higher average grade than has ever been reached by any other largely productive mine on the Coast. Although worked for so long a time and yielding so abundantly, this, as an entirety, may be considered a virgin mine, the present resources being of immense extent and the ore bodies coming in on the lower levels in great strength. The reduction works of the company consist of a 20-stamp mill with concentrating apparatus having capacity to handle 40 tons per day. For roasting the ores a Stetefeldt furnace has been put up, superseding the old style of reverberatory furnace formerly in use. Connected with the establishment are capacious shops, assay office, dwellings, outhouses, etc., effectual measures having been adopted for protecting the whole against fire. All these improvements have been paid for and current expenses met out of the net earnings of the property, leaving a surplus of nearly half a million to date, to be divided among the shareholders. Notwithstanding this good record, it is not probable that the future of this fine estate will in the least disparage its past history. The property is of immense extent, splendidly outfitted and ably managed. The mines are well opened and the ores rich and abundant, the lodes themselves giving every evidence of permanence. The workings are now far below the zone of surface disturbance, where slips and breaks at one time caused much uneasiness and trouble. Through these or like causes ore extraction will not again be intermitted, nor is it easy to see why bullion production should not go on without interruption or abatement in the future.

MARTIN WHITE MINING COMPANY.

WARD DISTRICT, WHITE PINE COUNTY, NEVADA.

Office, 59 Nevada Block. Annis Merrill, president; J. J. Scoville, secretary; Henry Sweetapple, superintendent; Annis Merrill, John A. Hooper, Chas. H. Stanyan, E. D. Sawyer, Romualdo Pacheco, trustees. Annual meeting, third Thursday in August. No. of shares, 100,000. No. of feet, 22,900. Shares per foot, 4.4. No. of assessment, 3. Amount, \$2 each and \$1. Levied, July 9 and September 1, 1877. Total assessments, \$500,000. Bullion yield, \$527,241.37. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The important group of mines and valuable property and franchises belonging to this company are located in the Ward District, White Pine County, Nevada. The mine includes the following: Paymaster, 1,500 feet; Defiance, 1,500 feet; Mountain Pride, 1,500 feet; Young America, 1,500 feet; Caroline, 1,500 feet; Mammoth, 1,500 feet; Ben Lomond, 1,500 feet; Ben Voirlick, 1,500 feet; Land Grampus, 1,500 feet; Home Ticket, 1,500 feet; Wisconsin, 1,500 feet; Ben Nevis, 1,500 feet; Maggie, 1,500 feet; Cyclops, 1,500 feet; Nestor, 1,500 feet; Ward & Henry, 200 feet; Alameda, 200 feet. The company have United States patents for the first four mines in the above list, and for six mill sites connected with the same, and with the Caroline and Mammoth, for 200 acres as a town site; 1,040 acres of agricultural land, and 160 acres of timber, and own all the water rights in the district. Though none of these mines, or other property, were located prior to 1872, the company have expended more than a million dollars in developments and improvements. They have much valuable machinery; have run tunnels, made roads, laid pipes for the supply of water, which is brought quite a distance. Among their property are two water jacketed furnaces, which cost \$30,000; four Cupel furnaces, for refining silver, which cost \$14,000; a leaching mill, for working some of their ores; six kilns, for making charcoal, which cost \$20,000; ten miles of good roads, and they are building a wire-cable tramway from their lower tunnel to the general ore house, about 9,000 feet in length, and a new 20-stamp mill that will cost \$100,000, which is contracted to be

completed by 3rd of November, 1878. There is ore enough on the dumps, and in sight, sufficient to run their mills for a year, at the rate of 50 tons a day. This ore will average \$70 per ton, some of it running much higher. The mines of the company have already produced \$527,000 worth of bullion, by furnace process; but the greater portion of the ores obtained at greater depths can be worked by the ordinary mill process. They only use the furnace for a class of ores which are becoming scarce as the veins are worked at greater depths. These smelting ores are found to contain more of the precious metals than the milling ores. The furnaces of the company can reduce 30 tons daily, and produce \$60,000 worth of bullion monthly on an average. The company's laboratory and assaying works are furnished with all the modern improvements, and they intend to erect such other reduction works as the development of their mines may require. At present the ores are obtained through three tunnels, 1,200, 1,300 and 1,700 feet in length. Altogether, this company has one of the most important and valuable properties in the State of Nevada. This location is easy of access, being about 110 miles easterly from the terminus of the Eureka Railroad, which connects with the Central Pacific Railroad at Palisades. The new town laid out by the company is about 6,000 feet above the level of the sea; the climate mild and salubrious, and wood and water abundant.

MARYLAND MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 20, 331 Montgomery Street. S. Heydenfeldt, president; C. A. Sankey, secretary; E. Strother, superintendent; S. Heydenfeldt, J. B. Low, A. K. Grim, W. B. Boyden, E. Strother, trustees. Annual meeting, first Tuesday in June. No. of shares, 54,000. No. of feet 900. No. of assessment, 1. Amount, 10c. per share. Levied, May 9th, 1877. Total assessment, \$5,400. Listed on San Francisco Stock and Exchange Board.

MATAMORA CONSOLIDATED MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, Room 12, 511 California Street. Ira G. Hoitt, president; J. Pentecost, secretary; F. A. Wilder, superintendent; A. W. Sisson, F. A. Wilder, Dirville Libby, Ira G. Hoitt, J. Pentecost, trustees. Annual meeting, fourth Tuesday in August. No. of shares, 60,000. No. of feet, 5 claims, 1,500 feet each.

MAYBELLE CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 23, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; R. N. Graves, Wm. M. Stewart, Wm. B. Carr, Wm. F. Herrin, A. J. Ralston, trustees. Annual meeting, second Monday in September. No. of shares, 64,000. No. of feet, 1,125. Shares per foot, 56 8-9. Listed on San Francisco Stock and Exchange Board.

This company is a creation from the consolidation of the Maybelle and the Aurora Tunnel Mining companies. The main shaft is down a distance of 197 feet, and work is being vigorously pushed ahead. There have also been crosscuts run. A great amount of vein matter is exposed, carrying gold and silver. It is a rich prospect; and a whim is being erected for the purpose of deeper development. A U. S. patent has been applied for.

MAYFLOWER SILVER MINING COMPANY.

BRISTOL, LINCOLN COUNTY, NEVADA.

Office, Room 15, 310 Pine Street. P. S. Van Rensselaer, president; J. W. Pew, secretary; Frank Wheeler, superintendent; C. Stevens, P. J. Van Rensselaer, M. J. McDonald, Delos Lake, Jas. M. Day, trustees. Annual meeting, fourth Wednesday in December. No. of shares, 100,000. No. of feet, 800.

The Mayflower mine is one of a series of deposits which have been found and worked in the Bristol Range, near the famous mining camp of Pioche. Of these deposits, the best known are the Day mine, the Hillside, and the Mayflower. Their situation is such that a straight line might be drawn through the three claims, which seems to prove that all are upon the same belt, and that the characteristics of the one may be repeated in the other.

The Mayflower has been developed by an incline over 200 feet in depth, and by a northerly drift, nearly 150 feet in length, and also, by a number of shorter drifts. The vein has been found throughout the work. It carries a mixture of carbonate of lead, and silver, and silver-bearing iron ore, all of which adapts it for smelting. With the recent successful introduction of smelting furnaces in the vicinity, this ore can now be worked to much better advantage than in the past, when it was hauled many miles to an ordinary pan mill. All indebtedness has been cleared off, and arrangements are now made for the resumption of active work.

MCCLELLAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIGEL, STOREY COUNTY, NEVADA.

Office, Room 20, Safe Deposit Building. Seth Marshall, Jr., president; Otto Metchke, secretary; Seth Marshall, Geo. W. Deitzler, R. Pahl, W. O. Gould, R. Peinel, trustees. Annual meeting, 13th day of December. No. of shares, 108,000. No. of feet, 4,500. Shares per foot, 24. Listed on California Stock Exchange Board.

MCCLINTON MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, San Francisco Stock Exchange. Geo. S. Dodge, president; Wm. H. Lent, secretary; Geo. S. Dodge, S. Hydenfeldt, Sr., J. Miller, E. B. Pond, A. W. Rose, Jr., trustees. No. of shares, 60,000. The location embraces a series of parallel ledges.

This mine is named after Judge McClinton, an old pioneer, and long resident of the district. It lies south of the Bechtel and west of the north half of the Standard mine, and embraces the

Eshington ledge, and others of early fame. There are, at least, half a dozen parallel veins belonging to this company, some of which are very promising. The work of development is going forward steadily, and there is every reason to expect that the McClinton will soon rank among the paying mines of Bodie.

McCRACKIN CONSOLIDATED MINING COMPANY.

OWEN DISTRICT, MOHAVE COUNTY, ARIZONA TERRITORY.

Office, Rooms 6 and 7, 211 Sansome Street. Hon. Eugene Casserly, president; H. Augustus Whiting, secretary; W. E. Stronach, superintendent; Hon. Eugene Casserly, I. C. Bateman, Hon. Geo. C. Perkins, L. M. Kellogg, T. C. Lampe, trustees. Annual meeting, third Monday in October. No. of shares, 100,000. No. of feet, 4,500. Shares per foot, 22-2-9. No. of assessment, 1. Amount, \$50,000. Levied, July 10, 1878. Total assessment, \$50,000. Bullion yield, \$670,312.91.

This mine, which was discovered by Jackson McCracken, whose name in part it bears, in the month of August, 1874, is situated on a great mineral-bearing range that here traverses Mohave County. It is distant about six miles north from Bill Williams Fork, twelve from Greenwood, on the Big Sandy, and thirty-five easterly from Aubrey, shipping point for this section of country on the Colorado River. The mining claims of the company, three in number, named respectively the Alta, Senator, and Palmetto, are located on a masterly lode, conspicuous here by its outcrop for a long distance, some eight or ten miles of it being covered by consecutive mining locations. The several claims of this company are situated on the crest of a mountain, some 2,000 feet above the adjacent plains, the Senator occupying the central position in the group. Each of these claims comprises 1,500 linear feet, giving the company 4,500 feet continuously on what may be considered the mother-vein of the country. The formation here is granite, the gangue consisting of alternate streaks of quartz and spar—this being what is termed a "band vein." Since passing into possession of the present company, the vein at this point has been opened to a vertical depth of 365 feet. The method of exploring the mine has been chiefly by tunneling, for which the precipitous sides of the mountain afford great facilities. The excavations of this kind made—shafts, main adits, and lateral drifts included—amount to 2,500 feet, all in ore. The underground works are connected by shafts and winzes, securing to them good ventilation. The work, as far as prosecuted, has been done with system and thoroughness. This ledge at the surface varies from 20 to 45 feet in width, these proportions being well preserved and even increased with depth attained. This is an earthy, oxidized ore, dry and friable, easily mined and milled—being crushed at the rate of four tons per day to the stamp—and susceptible of pretty complete amalgamation by the pan process. The first-class assays, on an average, about \$70, and the second-class about \$25, to the ton. The bullion turned out has heretofore been of good quality, running from 900 to 985 fine.

The weekly ore extraction runs at about 600 tons, which is broken down by 15 men, there being 35 hands employed in the mine and 54 in and about the mill, a very small working force for the amount of bullion turned out. Just at present a good deal of dead work is being done, it having become necessary to explore the lower levels of the mine for the purpose of opening up there new ore reserves. This has had the effect to curtail bullion production somewhat for the time being. When this work is accomplished, however, the yield will again come up to and very likely exceed the usual average, as the ore deposits here are of illimitable extent. The superintendent in his last letter to the directors states that an extensive body of good ore is being opened below the second level, and between that and the third, this being in new ground and giving assurance of a continuous ore supply. In February last the company started up their new 20-stamp steam mill, erected at a cost of \$96,000, the old 10-stamp mill before in use being of too limited capacity and located too far away from the mine to be longer run to advantage. Although this new mill, which is located nine miles from the mine, is doing good work, putting through over 600 tons of ore weekly, the company will probably find it expedient to build, in the near future, a much larger establishment, placing it closer to the mill and connecting the two with a railroad. Appurtenant to the present mill is an assay office and the other accessories and appliances required by first-class reduction works. A foundry, with cupola furnace, has also been put up near the mill, at which old shoes and dies are recast, and worn out and broken machinery replaced, an economical provision in a region so remote from larger works of this kind. To this company is due the credit of having made the first large and profitable bullion production in northwestern Arizona, a section of country that, at the time they commenced operations was beset with innumerable difficulties, retarding the progress of the work and rendering the improvements tedious and costly. Having overcome the many obstacles incident to the inauguration of mining enterprises in a region so far removed from its chief supply point and suffering from inadequate transportation facilities, this company may justly count on a greatly increased prosperity, now that this class of facilities is so much improved, while these obstacles have been either wholly, removed or greatly diminished. By referring to the above list it will be seen that the management of this company is in good hands, the official staff embracing experienced miners, and some of our foremost professional and business men.

MEADOW VALLEY MINING COMPANY.

ELY DISTRICT, PICOHE, NEVADA.

Office, 414 California Street. Richard Wegener, president; T. W. Colburn, secretary; J. R. Duff, superintendent; J. P. Kelley, W. H. Taylor, E. V. Joice, Alpheus Bull, Richard Wegener, trustees. Annual meeting, fourth

Thursday in August. No. of shares, 60,000. No. of assessment, 14. Amount, 75 cents. Levied, June 6, 1877. Total assessments, \$509,781.44. No. of dividend, 18. Amount, \$1. Declared, July 15, 1878. Total dividends \$1,260,000. Bullion yield, 85,197,948.78. Listed on San Francisco Stock and Exchange Board.

At present, the work of this mine is confined to some ores still found above the water-level, 1,200 feet from the surface, and in working the "mill-tailings." The mill has been completely overhauled and put in perfect working order. A contract has been made for leaching the screenings and dumps. Strenuous efforts are making to get the machinery over the mountains, and it is believed that as soon as this is completed prospecting will be advanced to great advantage.

MEMNON MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, 419 California Street. A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, J. L. Requa, J. D. Fry, A. J. Ralston, W. E. Dean, trustees. Annual meeting, second Tuesday in January. No. of shares, 73,000. No. of assessment, 1. Amount, 5 cents. Levied, March 15, 1876. Total assessments, \$6,500.

MEXICAN GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, 203 Bush Street. C. L. Weller, president; C. L. McCoy, secretary; Wm. Patton, superintendent; C. L. Weller, Geo. Wallace, J. H. Dobinson, C. H. Fish, Geo. R. Wells, trustees. Annual meeting, first Tuesday in December. No. of shares, 100,800. No. of feet, 600. Shares per foot, 163. No. of assessment, 5. Amount, 50c. per share. Levied, May 15, 1878. Total assessments, \$221,760. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Mexican adjoins the Ophir on the north, between that mine and the Union Con. It was segregated from the Ophir as recently as 1874, and has been prospected through the shaft of that company, having neither shaft nor machinery of its own. Thus far, it has extracted less than one thousand dollars' worth of bullion, for an expenditure of \$220,000. The theory of the managers of the mine being that, at the proper depth, they will strike the same bonanza known to exist in the Ophir and Sierra Nevada, all the funds of the company have been expended for this object. All the drifts started in search of it are run from the Ophir shaft. Drifts are now being run at 1,600, 1,900, and 2,000 feet from the surface. The latest reports from the Superintendent inform us that there are good indications of ore on the lower levels.

This company has effected a great saving in expenditure by uniting with the Ophir in running a joint drift to the east on the 1,900-ft. level, and with Union on the 1,600-ft. level. Each company defraying one-half the expense of the work of exploration, in which they are all equally interested.

MIAMI MINING COMPANY.

GLOBE DISTRICT, PINAL COUNTY, ARIZONA.

Office, Room 3, 240 Montgomery Street. Clinton Gurnee, president; J. L. Fields, secretary; Clinton Gurnee, I. C. Bateman, Sol. Sweet, T. W. Hadley, W. Townsend, trustees. Annual meeting, fourth Friday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Bullion yield, \$10,000.

MIDDLE HILL MINING COMPANY.

ESMERALDA COUNTY, NEVADA.

Office, Room 13, Safe Deposit Building. Geo. Congdon, president; W. Letts Oliver, secretary; G. Daley, superintendent; R. G. Brown, J. M. Walker, W. S. Lyle, W. L. Oliver, Geo. Congdon, trustees. No. of shares, 100,000. No. of feet, 3,000.

This mine is near Aurora, Nevada, and lays between the celebrated Real del Monte on the one side and the old Antelope mine on the other. The property is composed of two early locations, named the Durand and the Live Yankee. Each claim contains 1,500 linear feet, and though not yet much developed, the ground has always been considered among the best on this famous hill. They were recently purchased by the present company, who will proceed to open them up in a complete and systematic manner, and we doubt not with the most satisfactory results. It may lie deep, but there is great wealth in this Middle Hill.

MINERAL FORK MINING AND SILVER COMPANY.

BIG COTTONWOOD, UTAH.

Office, Room 20, Safe Deposit Building. Geo. W. Deitzler, president; Otto Metchke, secretary; Geo. W. Deitzler, Saml. Purdy, W. C. Pease, W. S. Campbell, James H. Van Vliet, S. N. Roberts, Selim Franklin, trustees. Annual meeting, first Monday in June. No. of shares, 60,000. No. of feet, 4,500. Shares per foot, 13 $\frac{1}{2}$. Bullion yield, \$10,000.

MINNIETTA BELLE MINING COMPANY.

LOOKOUT, INYO COUNTY, CALIFORNIA.

Office, Rooms 13 and 14, 318 Pine Street. G. L. Murdock, president; J. T. McGeoghegan, secretary; G. L. Murdock, J. H. Wise, I. H. Jacobs, S. C. Bates, J. B. Peck, trustees. Annual meeting, as per Code. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 2. Amount, 50c. per share. Levied, April 3, 1878. Total assessment, \$75,000. Listed on San Francisco Stock and Exchange Board.

MINT GOLD AND SILVER MINING COMPANY.

VIRGINIA DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 4, 401 California Street. H. C. Partridge, president; David A. Jennings, secretary; H. C. Partridge, S. P. Taylor, Alexander Lewthwaite, Geo. A. Travis, N. D. Thayer, C. H. Wakeice, D. L. Parkhurst, trustees. Annual meeting, last Tuesday in March. No. of shares, 50,000. No. of feet, 1,200. No. of assessment, 22. Amount, 20c. per share. Levied, Aug. 8, 1878. Total assessment, \$142,500. Listed on San Francisco Stock and Exchange Board.

MISSOURI AND SILVER LEAF MINING COMPANY.

The recent movements in the stock market, consequent upon the late rich developments on the Comstock, have prompted many parties who have for a long time allowed their properties to rest in idleness, to either proceed to systematic development, or prepare their mines for inspection and sale. Among those that have just come into prominence are the locations known as the "Missouri" and "Silver Leaf." These two properties are adjoining and are situated in the Gold Hill Mining District, and lie immediately south of the south line of the Suro Tunnel grant, also southeast of the Julia Consolidated, and about 600 feet northeast of the New Yellow Jacket shaft. It will be perceived by reference to the maps that these locations are nearly on an air line with the late developments in the Alta on the south and the Sierra Nevada on the north. A United States patent has been secured for both of these locations. The Missouri contains 1,500 feet, and the Silver Leaf 1,375 feet, of which about 150 feet are covered by the Suro Tunnel grant. The ground is well known in Virginia City as "the big ridge of croppings," south of the combination shaft of the Chollar and Savage mines. Prospecting has been done principally by running tunnels and drifts, which, with a shaft that has been sunk to a depth of 25 feet have demonstrated the existence of a ledge of "pay ore." The assays from the shaft run from \$4 to \$16 per ton, while the croppings run as high as \$60. An inspection of the locality will satisfy any competent judge that the claims are very happily located. There is no dispute as to title, and the present owners are anxious to associate with themselves capitalists who will at once proceed to develop, or if this be not feasible they are willing to sell. At the bottom of the shaft, the ledge has been found to be two feet and a half in width. A drift 150 feet in length has been run, intending to strike the ledge at a depth of 75 feet from the surface. There is still another tunnel, which, when prosecuted further, will strike the ledge at a depth of 250 feet. It will be necessary to push this tunnel about 350 feet further before the ledge will be reached. It may be suggested that the Hayward Company, which joins the above properties, has made arrangements with the Suro Tunnel Company to run a lateral drift from the tunnel to their mine. The Missouri and Silver Leaf can effect a joint operation in this movement. Thus it will be seen that, considering all of the surroundings and advantages of these locations, they may be regarded as among the most desirable on that portion of the Comstock, and we gladly call attention to the property. Further information can be obtained from J. S. Cassidy, number 411½ California Street, room 2.

MODOCK CONSOLIDATED MINING COMPANY.

LOOKOUT, INYO COUNTY, CALIFORNIA.

Office, 310 Pine Street. W. C. Parker, president; J. W. Pew, secretary; C. J. Barber, superintendent; W. C. Parker, Robert Gardner, E. M. Fry, W. H. Wallace, H. H. Flagg, trustees. Annual meeting, second Tuesday in July. No. of shares, 100,000. No. of assessment, 6. Amount, 50 cents. Levied, Sep. 15, 1878. Total assessments, \$300,000. No. of dividend, 1. Amount, 50 cents. Declared, December 23, 1876. Total dividends, \$50,000. Bullion yield, \$835,979.97. Listed on San Francisco Stock and Exchange Board.

This mining property, which consists of five claims, viz: the Modock, Confidence, Lookout, Keyes and Hearst, consolidated under one name and ownership, is situated in the Argus range of mountains, about 12 miles east of the town of Darwin. The company also own an iron mine, from which they obtain all the iron required for flux, this being a smelting ore. Work was commenced here in 1876, and has been continued ever since, the mine being extensively opened and many valuable improvements put on the ground. The ore extracted, amounting to some 12,000 tons, and which carries silver and lead, with traces of gold, has yielded over a million of dollars, being at the rate of about \$83 per ton. Over 2,000 tons of crude bullion have been made, the value of which has ranged from \$275 to \$770 per ton. During the past year a great deal of prospecting has been done, resulting in some important ore developments on the 200 and 300-foot levels, and also in the 1,000-foot tunnel, being driven into the ground and assuring almost beyond contingency a successful future to the mine. Most of the ore heretofore has been taken from the Confidence and the Lookout claims, though the other portions of the ground are known to contain valuable mineral deposits. The company have now in operation two 20-ton water-jacketed furnaces, having capacity to smelt from 35 to 40 tons of ore every 24 hours. In addition to the bullion extracted, and the improvements made, the company have ore reserves in their mine to the amount of 5,000 tons, which shows a total assay value of \$200,000. During the past fiscal year this company has reduced a previously existing debt of \$123,000 to \$43,280, the finances being now in a healthful condition and the prospects of the mine altogether encouraging.

In running the new tunnel, which, when completed, will prospect the mine to a depth of 1,000 feet, a body of good ore was intersected at a distance of 350 feet from the mouth, which is likely to prove the most important ore find yet made in the mine. By removing the furnaces to the mouth of this tunnel as contemplated, the ore can be run to them in cars, avoiding both hoisting and hauling, thereby effecting a monthly saving of some \$15,000. As the percentage of milling ore is already large and increasing rapidly, a 15 or 20-stamp mill will soon be built for reducing this class of ore. Carrying, as it does, both milling and smelting ores, and containing a number of large and well-formed veins, the Modock may be considered one of the most fairly representative mines in Inyo County. Heretofore, this company, in common with all others operating there, have had many difficulties to contend with; the most of them growing out of our inexperience in the smelting of ores, high freight charges, the newness of the com-

pany, etc. But as these obstacles are being gradually removed or overcome, a greater mining prosperity awaits, and is even now about being inaugurated in that region, which promises to make a much larger and less interrupted bullion production in future. Besides the properties and appurtenances enumerated, this company own various tracts of farming and timber lands, water franchises, etc., their mining supplies on hand being large and so varied as to cover everything required in that line. The total indebtedness of the company amounted in July last to only about \$70,000, against which they had, apart from the mines themselves, ore and property of various kinds to the value of \$260,000. Application for a patent to their real estate having been made, and a survey ordered, a Government title will, in due time, issue for the same.

MONARCH GRAVEL MINING COMPANY.

DOGTOWN, CALAVERAS COUNTY, CALIFORNIA.

Office, 426 California Street. Geo. F. Sharp, president; Frank B. Latham, secretary; Henry Hogarth, superintendent; Geo. F. Sharp, H. P. Wakelee, Robert Barton, Henry Rogers, W. W. Waddell, trustees. Annual meeting, third Saturday in June. No. of shares, 10,000. No. of assessment, 1. Amount, 75c. per share. Levied, December 1, 1878. Total assessment, \$7,500.

MONITOR BELMONT MINING COMPANY.

PHILADELPHIA DISTRICT, NYE COUNTY, NEVADA.

Office, 49 Nevada Block, 309 Montgomery Street. Oliver Eldridge, president; B. B. Minor, secretary; Samuel McMasters, superintendent; Oliver Eldridge, J. B. Haggin, Joseph Clark, George Hearst, B. B. Minor, trustees. Annual meeting, first Monday in August. No. of shares, 50,000. No. of feet, 6,400. Shares per foot, 8. No. of assessment, 7. Amount, \$25,000. Levied, April 23, 1878. Total assessment, \$162,500. No. of dividend, 3. Amount, \$25,000. Declared, December 2, 1873. Total dividend, \$75,000. Bullion yield, \$234,867.57. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

MONO GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Rooms 2 and 3, San Francisco Stock Exchange. C. A. Burgess, president; W. H. Lent, secretary; Geo. Daly, superintendent; C. A. Burgess, W. M. Lent, John F. Boyd, Thomas Bell, Lewis Teese, Jr., trustees. Annual meeting, first Thursday in September. No. of shares, 50,000. No. of feet, 750. No. of assessment, 1. Amount, \$25,000. Levied, August 23th, 1878. Total assessment, \$25,000. Listed on San Francisco Stock and Exchange Board.

The Mono mine consists of the south half of the Bodie location, and is 750 feet in length. A shaft for permanent working purposes has been commenced and is already down about one hundred feet, and has encountered the ledge carrying ore of low grade. Powerful hoisting works are being erected, with the view of a speedy and thorough development of the property. It is expected to find a continuation of the rich ore body of the Bodie mine.

MONUMENTAL MINING COMPANY.

GOLD HILL.

Office, Room 59, Nevada Block. S. Heydenfeldt, president; W. R. Townsend, secretary; E. W. Townsend, superintendent; S. Heydenfeldt, S. A. Raymond, George Townsend, J. J. Seoville, W. R. Townsend, trustees. Annual meeting, second Tuesday in June. No. of shares, 90,000. No. of feet, 1,500. Shares per foot, 60. No. of assessment, 3. Levied (last) February 14, 1878. Total assessment, \$45,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

MORGAN MINING COMPANY.

OPHIR, PLACER COUNTY, CALIFORNIA.

Office, Room 3, 306 Pine Street. A. R. Perkins, president; Edward F. Stone, secretary; A. R. Perkins, N. Flech, I. W. Brown, A. J. Angell, E. D. Stone, trustees. Annual meeting, first Tuesday in October. No. of shares, 100,000. No. of feet, 1,500.

MORTIMER MINING COMPANY.

EUREKA COUNTY, NEVADA.

Office, 401 California Street. George F. Bragg, president; D. A. Jennings, secretary; George F. Bragg, S. P. Dewey, Wm. P. Dewey, G. T. Lawton, John A. Paxton, trustees. Annual meeting, second Tuesday in November. No. of shares, 60,000. No. of feet, 1,400.

MOUNT HOOD MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 403 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, third Thursday in August. No. of shares, 100,000. No. of feet, 571. No. of assessment, 1. Amount, 10c. per share. Levied, August 8, 1877. Total assessment, \$10,000. Listed on California Stock Exchange Board.

MOUNT POTOSI CONSOLIDATED MINING COMPANY.

COLUMBUS, NEVADA.

The mines of this company are situated in the Columbus Mining District, Esmeralda County, Nevada, comprising the following mines and claims: The first easterly extension of the Northern Belle mine, 1,000 feet; the second easterly extension of the Northern Belle mine, known as the "Creole ledge," 800 feet; the first southeasterly extension of the Northern Belle mine, 200 feet. These extensions have been prospected by open cuts, shafts, tunnels, crosscuts, etc., which show the ledge to occupy a true fissure, with a breadth of over 40 feet between its walls. Throughout this ledge occur occasional bunches of chloride and sulphuret ores.

The croppings of the Northern Belle lode, after leaving the claim of the N. B. M. and M.

Company, bear to the west, in an irregular course, until they strike the Mt. Potosi mountain, where they split into several distinct and well-marked veins. The main ledge is called the Mount Potosi, on which the company have a claim 1,200 feet in length, secured by U. S. patent. They have also the first westerly extension of this mine, 400 feet in length. The other several branches of these croppings come together before leaving the company's ground, and as the whole of these branches or spurs belong to this company, no question as to their ownership can ever arise, giving cause for litigation. These croppings, throughout their entire length of 1,600 feet, show good milling ore, which assays from \$30 to \$160 per ton in silver, picked pieces going as high as \$300 in silver and \$200 in gold to the ton.

The work done on these ledges is as follows: On the western slope of the mountain, and at the west end of the patented claim, a shaft has been sunk 150 feet deep. This shaft shows an unbroken ledge throughout, and carries good milling ore from the surface down, the bottom being in good ore. A tunnel, 700 feet long, has been driven to the centre of the claim at a point some 300 feet east of the shaft. This tunnel cuts the ledge several hundred feet below the surface, the ledge thus cut showing good milling ore.

This Mount Potosi group of claims, being on the same ledge with the Northern Belle mine, which has as good a record as any in the State, constitute a promising and valuable property, and one that strongly invites the attention of parties seeking to invest in a legitimate and well-conducted mining enterprise. For the purpose of developing, outfitting, and working this splendid property, the Mount Potosi Consolidated Mining Company was incorporated September 18th, 1878, under the laws of California, with their principal place of business in San Francisco, and a capital stock of \$10,000,000, divided into 100,000 shares of \$100 each. Of this stock, 25,000 shares have been set aside as a working capital, to be sold at one dollar per share. Over 13,000 of these shares have already been subscribed for, and it is expected that the whole will in a few days be taken up. Among the principal subscribers are: John H. Boalt, William Willis, John F. Boyd, James L. King, C. A. Richmond, John Sroufe, Henry Degroot, G. F. Glover, Thos. Guinean, N. Watson, Jos. T. Glover, J. T. Mathewson, W. W. Dodge, Frank G. Edwards, R. Abrams, J. Rosenthal, Jas. D. Whitney, with some others prominent in this community as capitalists, experts, or mining men.

MOUNTAIN CITY MINING COMPANY.

COPE, MOUNTAIN CITY, ELKO COUNTY, NEVADA.

Office, 327 Pine Street. Geo. S. Dodge, president; D. F. Verdenal, secretary; A. Plummer, superintendent; Geo. S. Dodge, John T. Bradley, A. Borland, S. F. Gashwiler, Miller Hawxhurst, trustees. No. of shares, 100,000. No. of assessment, 1. Amount, 5c. per share. Levied, May 29, 1878. Total assessment, \$5,000.

MOUNT JEFFERSON MILL AND MINING COMPANY.

GAROTE DISTRICT, TUOLUMNE COUNTY, CALIFORNIA.

Office, 313 Pine Street. D. D. Shattuck, president; J. W. Clark, secretary; G. M. Condee, treasurer; N. C. Fassett, superintendent; S. B. Clark, G. M. Condee, F. G. Cleland, N. C. Fassett, D. D. Shattuck, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33½.

This company holds one of the most promising claims in Garote District, Tuolumne County, California. They have a 10-stamp mill, good hoisting works, and a jack-head pump, of sufficient capacity to keep the mine free from water. The shaft is 250 feet deep. The mill is now running on low grade ore, but yielding a good profit. The company has lately been reorganized, and the mine is being opened in good shape, and, no doubt, but will soon be paying dividends. In the year '69, '70, and '71, there was a large amount of ore taken from the old shaft, which averaged \$15 per ton, and aggregated over \$200,000. The old shaft and workings caved in, necessitating a new shaft. A volume of water in the new shaft, with no facilities for raising it, caused a suspension of the work, which has recently been resumed. With the facilities at hand the company can mine and mill their ore at a cost of about \$4 per ton.

MOUNTAIN VIEW SILVER MINING COMPANY.

VIRGINIA DISTRICT.

Office, Room 12, 310 Pine Street. E. P. Marsellus, president; T. E. Atkinson, secretary; Saml. E. Locke, superintendent; E. P. Marsellus, Geo. W. Towle, Jr., Wm. H. Fifield, Seth Marshall, Jr., Robt. Sherwood, trustees. Annual meeting, fourth Thursday in September. No. of shares, 100,000.

MURCHIE GOLD AND SILVER MINING COMPANY.

NEVADA CITY, CALIFORNIA.

Office, Room 6, Safe Deposit Building. A. Snider, president; S. D. Rogers, secretary; M. Garver, superintendent; A. Snider, S. D. Rodgers, J. Norfziger, E. T. Barber, G. G. Francis, J. C. Murchie, Jr., R. M. Fryer, Andrew Murchie, S. W. Lander, G. E. Bennison, E. G. Freeland, trustees. Annual meeting, third Tuesday in February. No. of shares, 100,000. No. of assessment, 1. Amount, 20c. per share. Levied, July 2, 1878. Total assessments, \$20,000.

This mining property, which lies about one mile east of Nevada City, California, comprises several early locations, presenting a notable example of the various kinds of gold mining prosecuted in this State; quartz, hydraulic and drift operations all now being or having been profitably carried on within the limits of the tract, which embraces an area of 439 acres, secured by United States patent. Within the boundaries of the claim are six quartz lodes, varying from two to ten feet in width, all more or less developed, and several of them very thoroughly opened up, the entire number yielding a fine, high grade, free milling ore. According to the

report of J. S. Phillips, a good authority, these veins occur in a geological formation especially favorable for the existence of permanent and prolific mines. The Red, White and Blue, the most northerly lode in this group, is about two feet thick, and, like the Lone Star, lies at a much lower angle than any of the others. The Big Blue has an average thickness of four feet and has but a slight inclination. The Alice Bell varies from two to four feet in thickness, and pitches to the north at an angle of 60 degrees. The Indian Hill has the same pitch, and averages three feet in width. The Independent is two feet thick, and pitches west at an angle of 40 degrees. The Lone Star is about three feet thick, the last two mentioned having a northerly and southerly, while the others have an easterly and westerly strike.

DEVELOPMENTS MADE.

Five shafts and inclines have been put down and three tunnels driven for the purpose of opening up and prospecting this series of lodes. On the Independent vein two inclines, one 300 and the other 400 feet deep, have been sunk, which shafts are to be connected near the bottoms by a drain tunnel carried in from Deer Creek, now nearly completed. From this 400-foot shaft a drift has been run south to the Big Blue ledge and along the latter 100 feet west, this ledge being here fully four feet thick. A drift has also been run on this level 200 feet east, showing the ledge well charged with ore twice as rich in gold as that found on the 200-foot level. The incline is now being sunk 100 feet deeper with a view to running drifts to both the Big Blue and Independent lodes on the 500-foot level. The Independent lode, at the lowest point to which it has been opened is 22 inches wide, firm and well walled, carrying a streak of about \$40 ore. A drift, starting from a deep ravine that wakes up from Deer Creek has been run southeast 330 feet, striking the Big Blue at a point 500 feet from its most westerly workings. The ledge here is fully five feet wide, and carries a better ore than any point above. By these various explorations a heavy reserve has been established on this vein, an ore body fully 800 feet long having been developed. A tunnel run 430 feet east along the Alice Bell ledge for sluicing purposes cut, in its course, the Lone Star lode, in what has since proved to be a large chute of high grade ore. Entering on the east side and sweeping through the center of the company's ground, is the channel of

ONE OF THE BURIED RIVERS,

Characteristic of this section of country, and which carry the auriferous gravel handled by the hydraulic process. The deposit here, which is rich and extensive, and which has been opened and outfitted ready for washing, yielded largely when worked in a former day. This is an interesting and valuable feature of the estate, being capable of being operated at any time either by the hydraulic or drifting methods, with large profits.

EXPENDITURES, INCOME, AND IMPROVEMENTS.

Upon this estate there has, to date, been expended \$130,000 in the construction of improvements, all now in good condition and available for working purposes. Among these improvements, apart from the exploratory work already alluded to, is an 18-stamp quartz mill and steam hoisting works, the mill being driven by water from the company's ditches while the water season lasts, and by steam power the balance of the time; a steam engine of sufficient capacity having been provided for the purpose. Among other additions recently made for facilitating operations and reducing expenses, are a wire tramway for conveying ores from the mines to the mill, supplemented with self-loading and self-dumping cars, air compressor with machine drills, besides many minor labor and money-saving devices.

On the ground are comfortable residences for workmen, outhouses and shops, with tools and implements of every kind needed. The most of the company's ground is covered with a fine growth of timber, much of it suitable for making good lumber. This ground, which for more than a quarter of a century, has been a large producer of bullion, is now turning out more gold than ever before, the net revenues being such that the property will be on a dividend-paying basis in the course of a few months more.

MUSSEL SLOUGH DITCH COMPANY.

TULARE COUNTY, CALIFORNIA.

Office, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, third Friday in October. No. of shares, 10,000.

The ditch, with its respective branches, has a total length of about sixty-five miles, with a varying width of fifty to one hundred and twenty-five feet on the surface. It commands an irrigating area of about fifty thousand acres of the richest agricultural land in the State.

NAPA CONSOLIDATED QUICKSILVER MINING COMPANY.

OAT HILLS, NAPA COUNTY, CALIFORNIA.

Office, Room 7, Safe Deposit Building. Vincent Neale, president; Wm. W. Parrish, secretary; M. G. Rhodes, superintendent; Vincent Neale, Theodore H. Hittell, Joseph M. English, Camilo Martin, Arthur K. Hawkins, trustees. Annual meeting, second Wednesday in November. No. of shares, 100,000. No. of dividend, 1. Amount, \$10,000. Total dividends, \$10,000.

The mines of this company are situated in Oat Hills, Napa County, California. The vein has large out-croppings of rich ores, varying in width from 5 to 50 feet—one already opened showing a vein of cinnabar yielding from 1 to 30 per cent. assays. These are comparatively new

mines, and operations, which have just been fairly commenced for their prospecting, are being vigorously prosecuted. A furnace, with \$20,000 machinery, has been erected, and the work of making roads, extracting ores and working them being diligently carried on. This work will be continued, and other furnaces erected as required, making the property payingly productive. About 50 laborers are employed in and about the mine and furnace.

NAVAJO MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. L. Browne, president; R. H. Brown, secretary; J. B. Dayton, superintendent; J. L. Browne, Thomas Cole, G. W. Grayson, E. M. Hall, M. Herman, trustees. Annual meeting, second Tuesday in August. No. of shares, 100,000. No. of feet, 1,500. No. of assessment, 4. Amount, 25c. per share. Levied, May 21, 1878. Total assessment, \$125,000. Bullion yield, \$49,661.80. Listed on San Francisco Stock and Exchange Board.

This mine is being opened in a skillful and systematic manner, a vertical, two-compartment shaft having been sunk upon it to a depth of 362 feet. At the 350-foot level a station has been excavated and timbered. On the 250-foot level some 280 feet of drifts have been run, but without cutting into any ore on this level. The vein matter has, however, improved so much for the past twenty feet, that pay ore will be reached very soon. On the 250-foot level 560 feet of drifts have been run, 212 feet being in a continuous ore body, in which an uprise of twenty-five feet has been made. This ore is from six inches to three and a half feet in width, the ore throughout being of good grade. A winze sunk from this level is part of the way in ore, the dip of the latter carrying it away from the winze at a depth of about fifty feet. On the 70-foot level 455 feet of drifts have been run, 365 feet being in pay ore. There are two incline shafts from this level to the surface; as they rise the ore chute extends to the south. The dumps contain 300 tons of first, and 200 of second-class ore, which amounts are being daily increased. Good steam hoisting works have been put up on the mine, these being supplemented with pumps, etc. All needed shops, dwellings, etc., have, also, been provided, the company having on hand tools and supplies sufficient to last for a long time. This company own, jointly with the Independence, a good 10-stamp mill, and a White's roasting furnace, with apparatus, chemicals, quicksilver, etc. Their receipts for the past year have amounted to \$187,498, and expenditures to the same.

NEGULLA SILVER MINING COMPANY.

PIMA COUNTY, ARIZONA TERRITORY.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edwd. F. Stone, secretary; C. Gurnee, Fred. W. Hadley, J. H. H. Williams, H. H. Johnston, E. F. Stone, trustees. Annual meeting, first Thursday in October. No. of shares, 100,000. No. of feet, 1,500.

NEVADA GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 26, 419 California Street. J. J. Green, president; Jacob Stadtfeld, Jr., secretary; A. Lawson, superintendent; J. J. Green, J. L. Armstrong, Benj. Dore, W. B. Murdoch, A. Lawson, trustees. Annual meeting, first Monday in January. No. of shares, 40,000. No. of feet, 3,000, on Ledges 1, 2, and 3. Shares per foot, 13. No. of assessment, 3. Amount, 10c. per share. Levied, January 7, 1878. Total assessments, \$4,000.

NEVADA GRAVEL MINING COMPANY.

NEVADA CITY, NEVADA COUNTY, CALIFORNIA.

Office, Room 12, 511 California Street. S. F. Bufford, president; J. Pentecost, secretary; H. W. Messinger, superintendent; H. H. Wood, S. F. Bufford, L. H. Varney, M. Green, Ira G. Hoitt, trustees. Annual meeting, second Tuesday in January. No. of shares, 50,000. No. of acres, 10. No. of assessment, 3. Amount, \$5,000 each. Levied, May 14, July 8, and Sept. 4, 1878. Total assessments, \$15,000.

NEWARK GOLD AND SILVER MINING COMPANY.

ELY, NEVADA.

Office, Room 17, 419 California Street. A. H. Yeazell, president; W. H. Allen, secretary; A. J. Blair, superintendent; A. H. Yeazell, J. L. Armstrong, H. A. Sweet, A. C. Wightman, G. C. Reeve, Jr., trustees. Annual meeting, third Monday in July. No. of shares, 32,000. No. of assessment, 14. Listed on San Francisco Stock and Exchange Board and California Stock Exchange Board.

NEW COSO MINING COMPANY.

COSO, INYO COUNTY, CALIFORNIA.

Office, 327 Pine Street. L. L. Robinson, president; D. F. Verdenal, secretary; J. J. Williams, superintendent; L. L. Robinson, Thos. Bell, Alex. Forbes, Geo. W. Kidd, Leopold Kuh, trustees. Annual meeting, May 4th. No. of shares, 100,000. No. of assessment, 8. Amount, 50 cents. Levied, March 20, 1878. Total assessments, \$400,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The New Coso mining properties are located in Inyo County, California, and produce base bullion, an admixture of silver and lead. The company owns two mines, the "Christmas Gift" and "Lucky Jim," work having been principally confined to the latter, from which large returns in bullion have been made; not sufficient, however, even with the aid of assessments, to pay for improvements to counterbalance the cost of production. Labor is high; so is transportation; charcoal and other adjuncts to successful smelting. The property is now under the charge of Mr. J. J. Williams, a shrewd and careful manager, and the production is equal to present expectations. Large amounts have been paid in the erection of hoisting works, the building of three furnaces, construction of roads, etc., and it is to be hoped that the perseverance and determination of the company will shortly be rewarded.

NEW ENGLAND GOLD MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, Room 12, Cosmopolitan Hotel. Warren T. Lockhart, president; D. L. Thomas, secretary; R. D. Wade, superintendent; Warren T. Lockhart, Clinton Gurnee, E. C. Mayhew, C. L. McCoy, D. L. Thomas, trustees. Annual meeting, first Monday in September. No. of shares, 100,000. No. of feet, 1,600. Shares per foot, 62. No. of assessment, 1. Amount, 5 cents. Levied, June 22, 1877. Total assessments, \$5,000. Bullion yield, \$41,703.11.

NEW YORK MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, Room 12, Cosmopolitan Hotel. C. L. Weller, president; D. L. Thomas, secretary; Matt. Canavan, superintendent; C. L. Weller, A. K. P. Harmon, Gustav Frank, M. Mendheim, J. D. Fry, trustees. Annual meeting, last Wednesday in June. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 16. Amount, \$30,000. Levied, May 20th, 1878. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The mine of the New York company is situated in the Gold Hill District, west of the Alta, about 1,500 feet southeasterly of the Belcher, and directly east of the Overman ground—the location being on the same line of croppings with the Lady Washington claim, on the site of the Belcher and Crown Point bonanzas. The company have erected over their shaft hoisting works, having capacity to sink to a depth of 2,500 feet. These works are very complete, and are a complete duplicate of the Caledonia, and cost nearly \$125,000. The shaft has now reached a depth of 1,200 feet, having been extensively prospected on the 1,100-foot level, where there is very promising ground with much good vein matter, some of which has given assays as high as \$75 per ton. The south drift on this level has also shown some very fine quartz. The first crosscut on the 1,000-foot level, running northeast, is in 185 feet, at which point good ledge matter with streaks of ore has been broken into, all of which, considering the eligible site and surroundings of the mine, must be accepted as pointing to early developments of value. Work on this mine has run along smoothly ever since being started, as few interruptions and mishaps having occurred here as with any other company on the Comstock.

NOONDAY MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary. A. W. Fox, superintendent; Wm. M. Stewart, Wm. B. Carr, Wm. F. Herrin, F. K. Bechtel, Frank Tagliabue, trustees. Annual meeting, fourth Thursday in August. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

NORTHERN BELLE MILL AND MINING COMPANY.

ESMERALDA COUNTY, NEVADA.

Office, Room 29, Nevada Block. Isaac C. Bateman, president; William Willis, secretary; P. S. Buckminster, superintendent; I. C. Bateman, G. T. Lawton, Henry H. Allen, S. Reinhart, A. J. Holmes, trustees. Annual meeting, second Monday in September. No. of shares, 50,000. No. of dividend, 30. Amount, \$1 per share. Declared, November 10, 1877. Total dividends, \$1,500,000. Bullion yield, \$3,754,043.55. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

The Superintendent, in his annual report to the Board of Directors, under date of Sept. 4, 1878, says: "At the time of making my last annual report, the larger part of the work at the mine was being done through the tenth level tunnel; the only development upon the veins below that point being a winze sunk to a depth of 225 feet. A new shaft had been sunk to a depth of 206 feet, machinery erected thereon, and a drift just commenced at a depth of 200 feet. This drift has since been driven to the lode, a large amount of prospecting done, both upon that level and upon intermediate levels between it and the tenth level, the shaft has been sunk 200 feet, and a second level commenced 200 feet below the first, which is now driven out 300 feet in the direction of the lode. Upon the first level, the foot-wall portion of the lode has been found weak, generally, but two veins having yet been developed that afford stopes, and they not extending through any considerable distance. We have small ore veins, in two drifts, which are now being driven in this part of the mine. These have but recently come into the faces, and are showing improvement as we drive. To the front we have and are still developing a strong vein, which is opened upon through a distance of 125 feet, and which we are driving upon, in ore, in both directions. At its widest part there are twelve feet of pay ore, of fair grade. The vein, in one direction in which we are driving, is now presenting three feet of high grade ore, say, better than \$100 per ton. In the opposite direction the grade is from \$50 to \$60. We are now sinking a winze upon this vein, to connect with the shaft of the second level. It is down some 30 feet, with the ore grade improving as we sink. At the point where we commenced sinking, the vein is wide, and, as yet, we have not taken either the hanging or foot wall. If the conditions continue favorable, as at present, we will connect this winze with the level within the next ninety days. I expect to make other important developments upon this first level before we have done prospecting it.

"The mills are in excellent condition, and but one (No. 2) at present running. If our front vein continues to develop as favorably as at present, we will, at no distant future, have ore enough opened upon to enable us to start up the other. During the past month our milling has not been successful, the tailings at times carrying away more than one-half of the assay value of the ore. I attribute the difficulty, or most of it, to the excessively hot and quiet weather which prevailed, and which checked the draft of the furnace to such an extent as to prevent the thorough roasting of the ores. The draft has been improved and the difficulty overcome, as is shown by the work of the past several days.

"Our contracts for salt and ore hauling have been let at the same figures as for the previous year. For wood and charcoal we have been compelled to submit to an advance, occasioned by the increased distances through which those supplies have to be delivered."

REMARKS OF A. J. HOLMES.

The Northern Belle Mine, Esmeralda County, Nevada, lies in the Columbus mining district, the ledge runs south 44° east, dips northeast. The bearing of the ledge varies in its course, as it strikes across numerous gulches and mountain spurs, for a distance of some 10,000 feet, still wherever cut it has good walls, with a clay seam between them, and the pay stratum of quartz. I might go on to describe the geological features of the mountains and country rock, mineral-bearing formations, as they are termed, but that is a theory of the past. Silver and gold is where you find it. The strike of the ledge in the Northern Belle Mine is south 44° east, to near the southeast boundary of the claim, where the ledge splits into two distinct, well-defined walls, and both appear to be fissure veins; the easterly ledge continues its course on through the first easterly extension of the Northern Belle and into the Creole ledge, or second easterly extension of the Northern Belle, where there has been a nice tunnel run into the same, with crosscuts made which show the fissure to be over forty feet between its walls, with occasionally bunches of rich chlorides and sulphuret ores.

The southeasterly vein bears in course south 26° 30' east, with good croppings, to near the Dinero, a little northwest from the Mount Diablo, and appears to run parallel with it.

The croppings of the Northern Belle Mine, running northwest after leaving the Northern Belle claim, bear to the west, and still swing around to 20° south of west, when they cross the Mount Potosi Mountains, here the ledge splits into five parts on the surface, ranging from forty to 100 feet apart, thus forming a complete network, and called the Mount Potosi group of mines. A tunnel has been run into the mountains 700 feet, which cut the ledge at several hundred feet deep, where we find only two ledges, assaying \$30 to \$150 per ton; on leaving the mountain they come together and appear only as one ledge, striking south 70° west, continuing in its course for 3,000 feet, where the croppings disappear beneath the surface.

In all the surroundings of the Northern Belle ledge, it proves beyond a doubt, there is but one ledge, or what might be termed the great mother lode of the southwestern Nevada.

A brief history of the early workings of the Northern Belle Mine might interest many of the present stockholders.

This mine was located by A. J. Holmes, in October, 1865. There were many inconveniences at that early period which were rather discouraging, such as the want of the substantialities of life, bacon and beans, flour, etc. Beef was rather of a luxury, we seldom saw it; game was very scarce; once in a while we would kill a badger, which was splendid; we could do but little more than prospect the mine till 1870, when there was a five-stamp mill built in Columbus and subsequently two more five-stamp mills, which now enabled me to get ore reduced and further develop the Northern Belle Mine, with very flattering prospects for the future. I continued work in prospecting the Northern Belle Mine to some 750 feet deep, run levels, tunnels, etc., until I found I had a mine with plenty of ore to warrant reduction works second to none in the State.

February 6, 1878, the Northern Belle Mine was incorporated in name of the Northern Belle Mill and Mining Company. From the location of the mine to the date of incorporation, I took out 2,549 1941-2,000 tons of ore, which was reduced at Columbus, and gave a net value of \$251,658.97. The gross expenses in sinking winzes, running levels, tunnels, etc., with all necessary buildings to carry on a first-class mining enterprise, cost the sum of \$279,930.44. In addition to this heavy expense, I paid some \$35,000 to quiet title, and then the mine and improvements I turned over to the Northern Belle Mill and Mining Company.

NORTH BELMONT MINING COMPANY.

PHILADELPHIA, NEVADA.

Office, Room 21, 419 California Street. A. K. P. Harmon, president; D. L. Thomas, secretary; A. K. P. Harmon, J. D. Fry, Robert Sherwood, H. C. Kibbe, Charles S. Neal, trustees. Annual meeting, third Monday in November. No. of shares, 50,000. No. of feet, 13,000. Shares per foot, 33. No. of assessment, 2. Amount, \$5,000. Levied, September 30, 1874. Total assessments, \$10,000.

NORTH BONANZA MINING COMPANY.

FLOWERY, STOREY COUNTY, NEVADA.

Office, 47 Nevada Block. Jos. Clark, president; W. W. Stetson, secretary; J. G. Rule, superintendent; Jos. Clark, Charles H. Fish, R. N. Graves, John Skae, A. K. P. Harmon, trustees. Annual meeting, third Tuesday in September. No. of shares, 100,000. No. of feet, 1,000.

The North Bonanza lies to the east of and adjoining the Flowery, it being the eastern 1,000 feet of the original Flowery location, which is situated to the north and east of the Sierra Nevada. The present surroundings of this mine are very favorable, and the prospects propitious. It is intended to proceed with the work of development at the earliest possible moment.

NORTH CARSON SILVER MINING COMPANY.

EAGLE VALLEY, ORMSBY COUNTY, NEVADA.

Office, Rooms 32 and 33, 318 Pine Street. J. I. Ayres, president; J. W. Morgan, secretary; A. S. Gould, superintendent; J. I. Ayres, W. O. M. Berry, N. Andrews, O. H. Bogart, George L. Woods, trustees. Annual meeting,

third Monday in October. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 7. Amount, \$30,000. Levied, September 27, 1878. Total assessments, \$95,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The North Carson is the pioneer in the district round the city of Carson, capital of Nevada. The location lies about 2 $\frac{3}{4}$ miles north of the city, on a line of croppings which can be traced directly through American Flat to the Comstock. The ore taken from the mine bears all the characteristics of Comstock, and, as greater depth is gained, assumes the open and porous appearance of that ore. The first prospectings were conducted from the line of croppings on the surface. The vein widened from a few inches on the surface to three feet eight inches at the depth of 30 feet. A tunnel was then run in to the ledge, cutting it 94 feet below the surface, where it was found to be 12 feet 10 inches wide, and to widen out rapidly toward the north, where an ore body was laid bare over 100 feet, and made ready for crosscuts to open it up. The vein was again struck on the 200 and 250-ft. levels, and found to be richer than on the upper level. Assays made at the Branch Mint at Carson range from \$5 to \$2,132.17. The company have a large quantity of milling ore in their ore-house at the mine, waiting reduction. New and powerful hoisting works have been put up on the mine, at great cost, and having capacity to carry the shaft to a depth of 3,000 feet. The main shaft is now down 500 feet, ample crosscutting having been made on the various levels, all revealing good ore. It is a double-compartment shaft, vertical, and well timbered. Connected with the mine are shops, office, dwelling-houses, etc.; the company boarding and lodging their workmen on the ground. They have also secured 40 acres of land adjacent to their mine for dumping-ground and the erection of such other buildings as may be required. The operations of this company have been conducted with marked energy and economy, they having been fortunate in securing the services of a first-class superintendent in the field. Shareholders may rest assured of two things, namely, that the money expended on this property will be laid out to the best advantage, and that the prospects for developing a paying mine here within a very short time are of the most assuring kind. It is to be remembered that ore of a much lower grade can here be worked with profit than about Virginia City or Gold Hill, wood and supplies being cheaper.

NORTH CONSOLIDATED VIRGINIA MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, Room 25, Nevada Block. Geo. Wallace, president; Geo. C. Pratt, secretary; D. H. Jackson, superintendent; Robert Sherwood, Cornelius O'Connor, Geo. R. Wells, Geo. Wallace, Edward C. Platt, trustees. Annual meeting, first Wednesday in February. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 13. Amount, \$100,000. Levied, August 13, 1873. Total assessments, \$520,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine is located directly east of the Ophir and Mexican. The claim is thought to be upon an independent ledge, distinct from the Comstock in many characteristics, but bearing all of its essentials. The work of development from the first has been prosecuted with energy, and since the mine has fallen into the hands of the present management renewed efforts have been made, and will be prosecuted still further, an unlimited amount of capital being at the command of the principal owners of the property. The shaft is now 136 feet below the 1,300-foot level. The rock continues very hard, but the indications are of a highly satisfactory character. There is no increase of water, and all of the machinery works well. So strongly are managers of the mine impressed with its ultimate richness, that they are about putting up the most extensive works on the Comstock. The machinery will be more complete and much more extensive even than that of the Yellow Jacket. Nearly \$200,000 will be used for this purpose, and every improvement that has been devised will be added to the works. The company regard their mine as worthy of thorough working, and to accomplish this end are determined to have none but the most approved machinery.

NORTH OPHIR MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 2, Nevada Block. Robert Barton, president; Butler Burris, secretary; Jno. F. Egan, superintendent; Robert Barton, Robert N. Graves, Jno. Landers, C. W. Kellogg, Daniel Cook, trustees. Annual meeting, 12th August. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

This mine is situated directly east of the Sierra Nevada and Union Con. It was located on 13th September, 1873, and has been actively prospected ever since. At present, they are working through a two-compartment shaft, which has reached about 100 feet in depth; but the company have made arrangements to sink a much larger shaft, and to put up extensive hoisting works. So far, not more than \$3,000 has been expended on the mine, and the company have ample funds in their treasury. There is very little water in the shaft at present, but they will put up powerful pumps to meet any inflow. This mine is located 1,500 feet east of the croppings of the Comstock, and is worked on the theory of there being more than one ledge in that ore belt. The Scorpion company claimed some of the ground belonging to the North Ophir, but having given the latter a deed for the ground, this cause of dispute is settled and disposed of.

NORTH UNION MINING COMPANY.

VIRGINIA, NEVADA.

Office, 308 Pine Street. H. R. Howell, president; H. H. Howell, secretary; S. Burbridge, superintendent; H. R. Howell, H. H. Howell, J. W. Clough, Victor Sessary, C. A. Herbert, trustees. Annual meeting, 19th of September. No. of shares, 100,000. No. of feet, 1,800. Listed on California Stock Exchange Board.

The property owned by the North Union Company is the old Jacob Little claim, which lies west of the Sierra Nevada and laps down upon the Union Consolidated. The claim was made in early days upon croppings that are regarded as highly favorable in indications. A tunnel was run into Cedar Hill, and from this branch drifts have been run and the vein partially explored. During the execution of this work bodies of ore have been found which assayed up in the hundreds. It has always been considered among mining experts that this would ultimately prove to be a valuable claim; and endorsing this impression, the present company propose, by a liberal outlay of money and energetic work, to demonstrate the worth of the mine at the earliest possible moment. Both, from position and developments already made, the company feel well warranted in prosecuting the work on a larger scale and more thoroughly than ever before.

NORTH UTAH MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; C. S. Curtiss, secretary; A. K. P. Harmon, W. S. Hobart, W. E. Dean, Martin White, C. E. Elliott, trustees. Annual meeting, second Thursday in January. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. Listed on San Francisco Stock and Exchange Board.

NORTHERN KING MILL AND MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA.

Office, Room 31, 313 Pine Street. A. J. Holmes, President; G. F. Glover, secretary; G. A. Woodward, superintendent; A. J. Holmes, J. I. Ayres, G. Holland, W. W. Dodge, Charles Miller, trustees. Annual meeting, 13th February. No. of shares, 100,000. No. of feet, 2,960. Shares per foot, 37 3/16. No. of assessment, 3. Amount, \$10,000. Levied, August 17th, 1878. Total assessments, \$32,500.

This property comprises three separate mining claims, viz: the Northern King, the Wedge, and the Home, the tract covered by these several claims being 2,900 feet long by 600 feet wide, and bounded by the Silver King on the south, the Hercules on the west, the Mayflower on the northwest, the Great Northern on the north, the Wade Hampton on the northeast, and the corner of the Tilden and unoccupied ground on the east.

The present workings consist of Shaft No. 1, 130 feet deep, with levels run 224 feet, in which were found sufficient ore and ledge matter to warrant the construction of a double compartment working shaft. No. 2. This shaft is now being built in a thoroughly workman-like manner, and will be hurried forward with all possible speed, the superintendent being a man noted for his energy and assiduity in the discharge of his official duties. This company is financially strong, and will bring out a mine here, and afterwards work it for all it is worth, in a square and business-like manner, their purposes being of a practical rather than speculative kind.

NORTHERN LIGHT GOLD AND SILVER MINING COMPANY.

PITTSBURG, SHASTA COUNTY, CALIFORNIA.

Office, 419 California Street. J. H. Whitney, president; F. S. Monroe, secretary; Charles D. Dunn, superintendent; J. Lawrence Pool, J. R. Scupham, J. H. Whitney, C. D. Havens, F. S. Monroe, trustees. Annual meeting, first Monday in January. No. of shares, 60,000. No. of feet, 600x1,500. Shares per foot, 40. No. of assessment, 2. Amount, \$15,000. Levied, February 5, 1878. Total assessments, \$24,000. Listed on Pacific Stock Exchange.

The preparations that are now being made for the reduction of the ores from the Copper City mines, near Pitt River, Shasta County, are bringing the individual mines into prominence. The great lode of Copper City may be traced for a little more than two miles, with a bearing north 17 degrees east, and dipping at an angle of about 80 degrees to the west. It lies between slightly metamorphosed slates on the east and a wall of quartzite or porphyry on the west. North of the lode this porphyry is replaced with limestone and the slates come up and meet it. The Northern Light mine occupies about the middle of the lode, and extends from Horse Creek, a fine perennial stream, up along the slope of Bully Hill along a ridge which is itself the ledge at this point harder than either wall, and so more prominent. The mine is crossed near the center of a ditch conveying water from Horse Creek. Just above this ditch a tunnel has been run into the ledge. As the work was done during the Winter the large body of water that permeates the ore caused a slide, which choked up the tunnel, and laid bare the top of a large body of ore or bonanza. The presence of this bonanza is also revealed in a tunnel piercing the ledge some 300 feet further north. This ore body is the one the company will first begin working. The ore assays from \$30 to \$175 in silver, and from \$2.50 to \$190 in gold. It also contains copper, lead and zinc. With a process embracing roasting and leaching the ore can be worked up to 90 per cent. of the precious metals. Wood is abundant, and can be had for about \$2 per cord. The company has a contract with the Extra Mining Company, whose mill is now running for the working of 1,000 tons of the ore.

OAKLAND GOLD MINING COMPANY.

GRASS VALLEY, CALIFORNIA.

Office, Room 1, 240 Montgomery Street. M. Shaw, president; R. D. Hopkins, secretary; M. Shaw, John McLeod, W. Hargrave, A. R. Ford, V. Walters, J. A. Carleton, John Hostrawser, trustees. Annual meeting, second Tuesday in May. No. of shares, 30,000. No. of feet, 1,500. Shares per foot, 20. No. of assessment, 2. Amount, \$1,500. Levied, June 21, 1878. Total assessments, \$4,500.

OCCIDENTAL MINING COMPANY.

SILVER STAR, STOREY COUNTY, NEVADA.

Office, 69 Nevada Block. R. H. Follis, president; Alfred K. Durbrow, secretary; Jas. G. Fair, superintendent; R. H. Follis, Chas. H. Fish, Con. O'Connor, Geo. R. Wells, Geo. Wallace, trustees. Annual meeting, second Monday in August. No. of shares, 40,000. No. of feet, 1,706. Shares per foot, 23½. No. of assessment, 4. Amount, 25c. per share. Levied, February 6, 1877. Total assessments, \$80,000. Listed on San Francisco Stock and Exchange Board.

Whatever may be offered to sustain the "one ledge theory" of the Comstock, two things are certain in regard to the Occidental. It is on an independent fissure vein, and it is so far east that there is little possibility and less probability of its ever being traced far enough down to form a juncture with the great eastern incline of the Comstock. The Occidental is an old location. It has been prospected by two tunnels running north and along the west walls of the ledge. Crosscuts have been run which prove the ledge on each of these adit levels to be of an average width of fifty-two feet. These levels are between 400 and 500 feet apart. They have been connected by a winze, and the continuity of the ledge thus demonstrated. Work was suspended last year, but the site for a permanent shaft has been selected directly over the crosscut from which the winze was run to connect the tunnel levels. Work will, probably, be resumed at an early day. Experts are of the opinion that a moderate increase of depth will uncover valuable ore deposits in this ground. The company is a strong one, and will be likely to go down till they get ore. It is probable that a drift will be run from the Sutro Tunnel, to work the lower levels, as the tunnel drains the ledge.

ONTARIO SILVER MINING COMPANY.

UTAH TERRITORY.

Office, 31 Broadway, New York. J. B. Haggin, president and treasurer; R. P. Lounsbury, vice-president; B. B. Minor, secretary; H. B. Parsons, assistant-secretary; R. C. Chambers, superintendent; J. B. Haggin, B. B. Minor, A. E. Davis, W. B. Carr, John C. Ball, W. Willis, R. P. Lounsbury, directors. Stock registered at Union Trust Co. Transfer office, at Wells, Fargo & Co's., 65 Broadway. Listed on New York Stock Exchange (old board).

This company was incorporated under the laws of California on the 16th of December, 1876, with full paid capital stock of \$10,000,000. The mill was completed and commenced operations on the 26th of January, 1877, after which time the stock was put upon the New York market.

The property consists of the "Ontario Mining Claim," 1,500 feet long, by 200 feet wide, and a mill site adjoining on the north, of three acres of land for building and dumping purposes, for both of which we have "United States patents." Also the "Switzerland Mining Claim," 1,500 feet long, by 200 feet wide, adjoining the Ontario on the east. An application for a patent for same has been made, and is now pending.

Upon the patented ground the necessary buildings have been erected, such as a large and commodious boarding house, and sleeping houses for the men employed, store houses, a small saw mill for sawing timbers and the hoisting and pumping works necessary for their large mining operations.

About a mile and a half north of the mine they have 15 acres of land, upon which the mill and the necessary buildings for reducing the ore are erected, consisting of one 40-stamp dry crushing mill, with Stetefeldt furnace for chloridizing base ores, retort and melting room, coal house, lodging houses for the men, boarding house and office, scale houses, barn, etc.

The ore has been worked up to a percentage of 90 8-10 per cent. of its assay value.

From January 26, 1877, when the mill was started, to August 1, 1878, the receipts were \$2,820,783.91; expenses and bullion discount, \$1,113,597.06; net profits, \$1,707,186.85; paid to stockholders, \$1,498,000; cash balance, August 1, 1878, \$209,186.85.

OPHIR SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, 203 Bush Street. C. L. Weller, president; C. L. McCoy, secretary; Wm. Patton, superintendent; C. L. Weller, George Wallace, George R. Wells, A. K. P. Harmon, James H. Dobinson, C. O'Connor, C. K. Fish, trustees. Annual meeting, third Wednesday in December. No. of shares, 100,800. No. of feet, 675. Shares per foot, 149½. No. of assessment, 32. Amount, \$1 per share. Levied, Sept. 10th, 1878. Total assessments, \$2,340,744. No. of dividend, 22. Amount, \$4 per share. Declared, March 7th, 1864. Total dividends, \$1,894,400. Bullion value, \$10,684,339. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

It is generally conceded that this mine forms a portion of the first location on the great Comstock Lode. Long before the American miners began prospecting in the vicinity, parties of Mexicans were working the croppings on the Ophir ground. Old Comstock, whose name has been immortalized by its connection with this wonderful mineral discovery, located his claim on part of what is now the Ophir ground. A very interesting volume might be written about the Ophir mine. The space at our command only admits of a mere reference to the most salient points in its history. It is situated between the California and Mexican, the Union adjoining the latter on the north. It includes the old Mexican, and was the first to produce bullion. It has been worked with energy ever since its first location in 1859. Its main shaft, of four compartments, is nearly 1,000 feet east of the croppings of the lode. It is sunk to the 1,550-foot level, perpendicular, from where an incline, with a pitch of 37° has been run, extending to the depth of 2,100 feet from the surface. This incline is still being sunk. It was 64 feet below the 2,100-foot level on 7th September, 1878.

Few events in the history of the Comstock mines exhibit the energy and resources of the men who manage them in a clearer light than is presented by the fact that when the great fire that destroyed Virginia City, and with it the works of the Ophir, in October, 1875, the company rebuilt its mill, hoisting works and workshops, and put up new and more powerful machinery than that destroyed, and were ready to resume work on the mine in thirty days! This wonderful achievement incurred an outlay of more than \$300,000. Since the date of our previous report of this mine, in THE MINING REVIEW, an immense amount of work has been done. The north drift on the 1,465-foot level has been extended through the Mexican and Union, and connected with the Sierra Nevada mine, which affords a strong current of air, and materially improves the ventilation of this mine. The north drift, on the 1,600-foot level, has also been extended through the Mexican, Union Consolidated, and into the air chamber of the Sierra Nevada, for purposes of ventilation. In the vertical shaft the old pumps and pumping gear have been replaced with improved new ones. In the incline, two new pumps have been placed, one at the 1,700-foot level, and the other just below the 1,900-foot level. Sixty feet above this level a "blower" has been placed, which is capable of supplying air sufficient for three drifts of one thousand feet each. These operations completed, preparations are now in progress to continue the northeast lateral drifts on the 2,000-foot level toward the ore body in the Union Consolidated and Sierra Nevada, and to form a general connection for operations from the Best & Belcher to the Sierra Nevada, a distance of nearly a mile. A station has been set in the Ophir-California winze, and a winze to connect the C. and C. shaft started, and it is confidently expected that this mine will soon resume its place among the dividend payers. Some idea of the work of this mine may be formed from the following list of machinery it uses: Two hoisting engines, with double reel and gear; 1 engine for incline, with gear complete and two hydraulic engines attached; 1 Burleigh air compressor; 1 Booth's air compressor; 2 double engines, underground, driven by compressed air, on winzes and fans; 4 engines for air fans; 2 blower engines and blowers; 1 engine for driving saws; 1 hydraulic water-hoist, engine and gear; 1 large pumping engine, with connections and double gear; plunge pumps, Cornish lift-pumps, 2 boiler pumps; 3,600 feet round steel wire cable, and 12,865 feet flat steel wire cable; 10 boilers, in place. This machinery enables the company to raise 1,000 tons of ore daily, and is the most powerful and costly of any mine in the world.

To prevent the recurrence of such a disaster as befell it during the great fire in 1875, the company have perfected a system of water-works, which places 2½-inch hose, in connection with an abundant supply of water, in every part of their buildings, which cover nearly 40,000 square feet of ground, and are valued, with the machinery, at upwards of \$500,000.

OREGON CONSOLIDATED GOLD AND SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 21, 328 Montgomery Street. Jas. J. Green, president; David Wilder, secretary; Matthew Canavan, superintendent; James J. Green, Charles H. Aitken, George E. Clarke, Robert Cushing, E. D. Wheatley, trustees. Annual meeting, second Tuesday in April. No. of shares, 100,000. No. of assessment, 1. Levied, January 7, 1878. Total assessments, \$25,000.

ORIENT MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 9, San Francisco Stock Exchange. F. Tagliabue, president; Victor Fernbach, secretary; Thomas Buckley, superintendent; F. Tagliabue, M. Fernbach, J. M. Wilde, Thos. H. Lawlor, V. Fernbach, trustees. Annual meeting, first Tuesday in September. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66¢.

This mine is located on the westerly slope of Silver Hill, in a direct line south of the present Bodie mine, and adjoins the Booker Consolidated. The mine was taken up Sept. 15th, 1877, and is the oldest location in the vicinity. The shaft is about 100 feet in depth, and shows a vein three feet wide, which assays well in gold and silver. Several stringers of quartz are cut by the shaft, which give good results in gold. At the depth of 25 feet the shaft cut a vein of quartz 18 inches in width, dipping east. These veins are stringers from the main Orient ledge.

ORIENTAL CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 540 California Street. R. B. Milroy, president; F. C. Mosebach, secretary; C. S. Benham, superintendent; R. B. Milroy, S. P. Warren, Edwin Merrifield, Wm. Milroy, F. C. Mosebach, trustees. Annual meeting, January 22d. No. of shares, 50,000. No. of feet, 1,600. U. S. patent. Listed on San Francisco Stock and Exchange Board.

This mine is situated about one mile from Alleghany City, Sierra County, California. The vein, which carries and is being worked for both gold and silver, is encased in slate, has an easterly and westerly strike, and a northerly dip of about 45 degrees. It has been attached by a tunnel, which, 500 feet in, strikes the lode at a depth of 130 feet. The ore chute, which has a length of 250 feet, has been worked out above the tunnel level. Below the tunnel an incline has been put down on the vein to a depth of 50 feet, showing good ore all the way. The pay portion of the vein averages two feet in width, though in places it expands into a white quartz, which heretofore has been rejected as worthless. More recently this has been found to contain \$40 per ton in silver with \$4.50 in gold, which will lead to the ore being hereafter worked for both these metals. The most of the ore milled has paid at the rate of \$23 per ton, parcels from the lower level having gone much higher, bringing the entire average up to \$42. There is

a good 8-stamp steam mill, situate at the mouth of the tunnel, and having capacity to reduce from 15 to 20 tons of ore per day. The mine is also supplied with hoisting works, pumps, etc. The Oriental has been worked since 1863, since which time it has produced a total of \$210,116. As the expenses attending this production have been scarcely half that amount, a handsome profit would have accrued to the owners but for legal complications and bad management. As these troubles are disposed of, the mine being now held under a United States patent, and the whole estate having passed into the hands of capable and reliable parties, it promises to enter upon a career of marked and prolonged success. Under the new directory, 20,000 shares of stock having been set aside and sold for working capital, the exchequer of the company is well supplied with funds, relieving shareholders of apprehensions of future assessments. The mine and mill has been put in first-class order throughout, and the work of exploration and production will henceforth be pushed with energy, and no doubt with results satisfactory to the shareholders and all concerned.

Since the above was written, another rich strike has been made in this mine, in the east drift on the 350-foot level, and being some distance from the locality of the previous finds, shows the ore-belt here to be very broad as well as prolific.

ORIGINAL KEYSTONE SILVER MINING COMPANY.

VIRGINIA MINING DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 25, Nevada Block. Joseph E. Smiley, president; Geo. C. Pratt, secretary; L. M. Pearlman, superintendent; J. Greenebaum, J. M. Walker, J. L. King, Ed. Hall, trustees. Annual meeting, first Tuesday in August. No. of shares, 100,000.

The property of the company consists of 1,800 linear feet on the ledge by 600 feet in width. It was located November 19th, 1859, and is among the first claims taken up on the Comstock. The company was incorporated August 7th, 1877. The Keystone is in a direct northerly and southerly course with the great bonanza mines :

CONSOLIDATED VIRGINIA.	CALIFORNIA.	OPHIR.	MEXICAN.	UNION CONSOLIDATED.	SIERRA NEVADA.	UTAH.	ORIGINAL KEYSTONE.
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And less than five years ago the outlook of these mines was no better than the present prospects of the Keystone. When the mine is fully opened there is every reason to believe its shares will command as high a price as any on the lode. The improvements consist of: Shaft No. 1, 30 feet deep, on the north line of the claim, some 200 feet south; Tunnel No. 1 has been driven into the hill-side 60 feet—here, also, Shaft No. 2 has been sunk to the depth of 46 feet; at about the center of the claim, or 700 feet south of Tunnel No. 1, Tunnel No. 2 has been put in 170 feet; still further south, and within 300 feet of the south line, and about the same distance from the toll-house on Geiger's Grade, Shaft No. 3 (an incline shaft) has been sunk some 100 feet.

In nearly all the above openings, quartz giving good assays in gold and silver has been found, thus demonstrating, beyond a doubt, that the lode passes through the entire length of the company's property. Later in June, 1876, the main working shaft, known as the Pearlman shaft, was commenced, with a view to deep development. A large and substantial building has been erected over it. At the present time this shaft is about fifty feet deep. The location of the Pearlman shaft has been selected with great judgment, a little north of the center of the claim, with a view to the erection of extensive works, such as will secure unlimited dumping privileges, ore houses, etc.

The report of Mr. William T. Robinson, mining engineer, shows the ledge of the Keystone to be encased between two well-defined walls; also, between the syenite or diorite on the west, and the porphyritic rock, or, as the miners term it, bird's-eye porphyry, on the east, with occasional trachytic green-stone porphyritic dikes. Indications of ore bodies present themselves at a depth of 100 feet. And, in conclusion, he remarks that an examination of the company's property, confirms his high opinion of this portion of the Comstock lode. The superintendent's report shows the judicious expenditure of \$18,000 gold coin, and confirms Mr. Robinson's theory of the ore formation. It is confidently expected that the shaft will penetrate the ore body at a depth of 500 feet. The board of directors have set aside 15,000 shares as working capital, the sale of which will furnish an amount sufficient to thoroughly prospect the mine. On the 25th of July, 1878, a new shaft, consisting of three compartments, was started, size 4½ by 4½ for hoisting, 5 by 5 for pumping, in the clear, 14 feet long; size of shaft, have, since break-

ing ground, sunk 12 feet to date, and the work of sinking and timbering is being pushed ahead with due speed. Work carried on the mine day and night. Ground works well. Expect to have machinery on hand and ready for work inside 30 days.

ORLEANS GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, W. B. Thornburgh, John Skae, Joseph Clark, W. E. Dean, trustees. Annual meeting, second Tuesday in January. No. of shares, 48,000. No. of feet, 2,000. Shares per foot, 24.

The Orleans is the old Van Bokkelen & Thornburgh, and lies north of the western end of the Utah and the Sutro. The location is on the west ledge, the character of which is well known, and which has always been found to carry precious metals.

ORO BLANCO MINING COMPANY.

ORO BLANCO, PIMA COUNTY, ARIZONA TERRITORY.

Office, Room 20, Safe Deposit Building. Geo. W. Dietzler, president; W. O. Gould, secretary; J. P. Preston, superintendent; Geo. W. Dietzler, A. G. Hawes, E. Moreau, Z. E. Brittan, W. O. Gould, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of feet, 1,500.

OVERMAN SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, 414 California Street. Geo. W. Beaver, president; Geo. D. Edwards, secretary; Chas. Forman, superintendent; Geo. W. Beaver, Richd. Wegener, R. F. Morrow, Jos. Clark, S. Heydenfeldt, trustees. Annual meeting, second Thursday in July. No. of shares, 33,400. No. of feet, 1,200. Shares per foot, 32. No. of assessment, 42. Amount, \$3 per share. Levied, September 6, 1878. Total assessments, \$2,951,600. Bullion yield, \$1,581,487.11. Listed on San Francisco Stock and Exchange Board.

The Overman lies immediately south of, and adjoining the Belcher. In its early days an abundance of rich ore was taken from the west ledge. It was then prospected through the shafts of the Uncle Sam, and Mary Ann, besides its own, those localities being now comprised within its boundaries. Subsequently a site for a new shaft was selected in the center of the claim, and 1,500 feet to the east from the old workings. Admirably arranged hoisting works have been erected, with the full complement of attachments, in lieu of shops, etc. A large ore-house has been erected, and a side-track laid from the Virginia and Truckee Railroad thereto, over which ore is shipped daily for milling purposes, and supplies received. The Overman has recently come again to the front as a bullion producer. The prospecting on the 1,500 and 1,600-foot levels has been very promising. The vein is very strong, and the prospects are very favorable.

PACIFIC MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 6, 313 Pine Street. Edward F. Stone, president; J. W. Clarke, secretary; Charles Forman, superintendent; E. F. Stone, J. M. Walker, W. F. Myers, W. S. Lyle, R. M. Graves, trustees. Annual meeting, fourth Thursday in January. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 83½. No. of assessment, 1. Total assessments, \$20,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The ground of the Pacific lies north of the claim of the Rock Island, and the development of the mine has been carried on through the Rock Island shaft.

PANTHER MINING COMPANY.

CORNUCOPIA, ELKO COUNTY, NEVADA.

Office, 310 Pine Street. C. J. Shaw, president; J. W. Pew, secretary; J. M. Wilson, superintendent; C. J. Shaw, M. J. Hussey, A. C. Taylor, L. Vesaria, C. E. Gould, trustees. Annual meeting, third Tuesday in April. No. of shares, 50,000. No. of feet, 1,500. No. of assessment, 9. Amount, 10 cents. Levied, Sept. 12, 1878. Total assessments, \$75,000. Bullion yield, \$21,720.45. Listed on San Francisco Stock and Exchange Board.

The Panther mine is located east and adjoining the Hussey mine. During the past year new hoisting works have been erected and considerable dead work done. The main shaft has been sunk to a depth of 360 feet, and a crosscut run to the main ledge. Drifts are now being run east and west, following the ledge, which is seven feet wide. Stringers of ore have been met with, carrying mineral, from which good assays have been had. The management hope to find the same chute of ore at this depth as was found on the upper level. Work is being vigorously pushed ahead at the present time. Total bullion product since incorporation, \$21,720.45.

PARADISE VALLEY MINING COMPANY.

MOUNT ROSE, NEVADA.

Office, Room 13, Safe Deposit Building. S. Linkton, president; W. Letts Oliver, secretary; P. S. Van Rensselaer, H. Janin, S. F. Cashwiler, L. W. Greenwell, Samuel Linkton, trustees. No. of shares, 100,000. No. of feet, 8,000. Shares per foot, 33½. Listed on San Francisco Stock and Exchange Board.

The Paradise mines are situate in the mountain range lying to the east of Paradise Valley, one of the most extensive and fertile farming districts in the State of Nevada. They were discovered only about two years ago, and, although the claim-owners have received but little outside aid, many properties of unmistakable value have already been developed here, the mine of the Paradise Valley Company being one of the number. The lode, strong and well defined, strikes square across the face of the mountain, which, being very steep, affords good facilities for opening the mine by means of drifts run in on the vein. These drifts, without

being extended very far, will open backs to a height of 800 feet. The company, besides pushing the work of exploration vigorously, are putting up shops, houses for workmen, etc.; it being their intention to outfit and explore the property in a style commensurate with its great apparent value. This is not a mere prospect, but already a productive mine—the lode carrying a pay streak four and a half feet in thickness, that assays from \$200 to \$300 per ton. The lodes in this district are mostly of large size, and occupy regular fissures between porphyry and granite. The ores consist mainly of the black sulphuret variety, and carry both gold and silver. They are very tractable, and can be reduced cheaply, the district being fairly supplied with wood and water, and farm produce of all kinds being extremely cheap.

PAUPER MINING COMPANY.

OWHYEE COUNTY, IDAHO.

Office, 106 Leidesdorff Street. O. H. Bogart, president; J. H. Conway, secretary; J. I. Crutcher, superintendent; D. L. McDonald, A. P. Minear, O. H. Bogart, J. H. Conway, J. M. Bogart, trustees. Annual meeting, third Thursday in July. No. of shares, 50,000. No. of feet, 1,600. No. of assessment, 7. Levied, February 26, 1876. Total assessments, \$67,000.

PEABODY CONSOLIDATED MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 308 Pine Street. H. R. Howell, president; H. H. Howell, secretary; S. Burbridge, superintendent; H. R. Howell, H. H. Howell, N. K. Lamson, — Pinkerton, S. Gulliner, trustees. Annual meeting, 26th of September. No. of shares, 100,000. No. of feet, 3,000.

The Peabody Consolidated contains 3,000 feet, located near the north end of the Comstock, in close proximity to the bonanza developments, and lies about 1,800 feet easterly of the California, Con. Virginia, Best & Belcher and the Gould & Curry. The claim consists of the Peabody ground and the Garrison location, 1,500 feet each. There is a three-compartment shaft near the line of the Garrison, which was begun in 1874, and has been sunk about 100 feet, with a good showing of porphyry and clay, and some seams of excellent ore. Work will be prosecuted vigorously.

PEYTONA GOLD AND SILVER MINING COMPANY.

CEDAR HILL, VIRGINIA, NEVADA.

Office, Room 15, 310 Pine Street. Ferd. Vassault, president; J. W. Pew, secretary; M. A. McDonald, superintendent; M. J. McDonald, Louis Vesaria, M. J. Hussey, Ferd. Vassault, J. B. Warren, trustees. Annual meeting, last Monday in February. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. No. of assessment, 14. Levied, March, 1876. Total assessments, \$97,000. Listed on San Francisco Stock and Exchange Board.

The Peytona was located November 21st, 1859, as an extension of the Sierra Nevada, prior to the Allen or Utah companies. It is proposed to consolidate with the Allen Consolidated Company, which is immediately adjoining on the east. The Peytona has several tunnels driven into the hill; one, at a depth of 300 feet below the croppings, is advanced nearly 1,100 feet, having encountered in its progress several small seams of ore. The upper tunnels, varying from 300 to 100 feet, have found good ore at intervals, with a solid ledge of over 60 feet in width.

PHIL SHERIDAN MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 12, Cosmopolitan Hotel. C. L. Weller, president; D. L. Thomas, secretary; S. L. Jones, superintendent; C. L. Weller, M. K. Landen, George Townsend, Aaron Doud, C. P. Jones, trustees. Annual meeting, fourth Monday in July. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 12. No. of assessment, 7. Amount, 50c. per share. Levied, April 16, 1877. Total assessments, \$86,375. Listed on San Francisco Stock and Exchange Board.

PINKHAM MINING COMPANY.

HARRISBURG MINING DISTRICT.

Office, 310 Pine Street. O. Y. Giffin, president; George R. Spinney, secretary; H. S. Lubbock, superintendent; O. Y. Giffin, J. H. Wise, W. H. Graves, W. M. Lubbock, R. N. Graves, trustees. Annual meeting, third Thursday in April. No. of shares, 60,000. No. of feet, 1,000. Shares per foot, 60.

PIONEER CONSOLIDATED MINING COMPANY.

EUREKA, NEVADA.

Office, Room 4, 309 California Street. R. Sherwood, president; J. M. Buffington, secretary; E. J. Elzy, superintendent; Robert Sherwood, J. A. Albertson, M. McDonald, J. D. Fry, C. D. Elliot, trustees. Annual meeting, third Monday in May. No. of shares, 50,000. No. of feet, 1,000.

PITTSBURG GOLD MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, 414 California Street. Julius Bandmann, president; R. Wegener, secretary; Julius Bandmann, J. H. Landsberger, H. Heynemann, H. Fisher, T. C. Lampe, trustees. Annual meeting, third Saturday in September. No. of shares, 100,000. No. of assessment, 2. Amount, 6c. per share. Levied, May 20, 1878. Total assessments, \$12,000.

This mine is situated between the Sierra Nevada and the old Sacramento and Meredith. It was located in 1861, and explored through a tunnel in Cedar Hill, of 540 feet in length. Nearly 400 feet of this tunnel was run through materials that paid for mining and milling. Finding the tunnel unsuited for their operations, the company concluded to sink their present shaft, which is nearly 300 feet below the mouth of the tunnel. A drift from this shaft run at 100 feet from the surface, reached the ledge at 60 feet, and struck ore that yielded seven dollars

per ton in gold. Since then the company have erected suitable machinery for a thorough prospecting of their ground. Their shaft is down 400 feet and a crosscut that was within 30 feet of the ledge on the 25th of September, 1878. Their machinery is valued at \$10,000.

PLACERVILLE GOLD QUARTZ MINING COMPANY, LIMITED.

LONDON CORPORATION.

General Manager in California, Thomas Price, 524 Sacramento Street.

PLEIADES GOLD AND SILVER MINING COMPANY.

WARD MINING DISTRICT, NEVADA.

Office, Room 13, Safe Deposit Building. J. J. Dunne, president; W. Letts Oliver, secretary; T. J. Bell, superintendent; E. A. Sawyer, W. P. Willard, T. B. Ludlum, T. J. Bell, J. J. Dunne, trustees. Annual meeting, first Tuesday in April. No. of shares, 100,000. No. of assessment, 1. Amount, 5c. per share. Levied, April 11, 1878. Listed on San Francisco Stock and Exchange Board.

This mine is adjoining the Martin White, one of the most valuable properties in Eastern Nevada. A vertical shaft is being sunk on the claim. While work on this shaft, which is already down 150 feet, will be continued, current expenditures will be confined within a narrow compass, the management being unwilling to burden the shareholders with frequent or heavy assessments. A body of rich ore has already been developed in the mine, which occupies a true and well-defined fissure, being the same as that on which the Martin White is situated.

PLIOCENE GOLD MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 312 Montgomery Street. R. E. Brewster, president; E. S. Thurston, superintendent; R. E. Brewster, G. Palache, E. Green, J. L. E. Kelly, Geo. P. Thurston, trustees. Annual meeting, May 4th. No. of shares, 60,000. No. of assessment, 8. Levied, July 2, 1878. Total assessments, \$40,000.

PRICE AND DAVIES MINING COMPANY.

EUREKA, NEVADA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edwd. F. Stone, secretary; C. Gurnee, Geo. W. Hopkins, J. H. H. Williams, N. G. Andrews, E. F. Stone, trustees. No. of shares, 100,000. No. of feet, 6,000.

The great ledge at Eureka, Nevada, is next to the Comstock in its production of the precious metals. The ore-bearing formation, between quartzite and shale, extends for a long distance, and has carried ore wherever prospected. The above claim covers the width of the croppings, and adjoins the Albion on the north. The Price and Davies, Albion, Richmond, Eureka Consolidated, K. K., Phoenix, and Jackson, being the mines on the dominant lode of the district, taken in their order, running southeasterly. The entire extent of mining ground belonging to this company is now being actively prospected, the contract for sinking a working shaft having been let, and the working of the mine progressing under the direction of experienced miners.

PRINCESS SILVER MINING COMPANY.

BULL RUN, ELKO, NEVADA.

Office, 302 Montgomery Street. Joseph Brandenstein, president; Geo. P. J. Watson, secretary; Joel E. Meacham, superintendent; Joseph Brandenstein, John A. Rice, Isaac S. Gartner, Joel E. Meacham, Gustave Sutro, trustees. Annual meeting, first Saturday in December. No. of Shares, 100,000. No. of feet, 1,500.

PROSPECT GOLD AND SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, 320 Sansome Street. F. A. Benjamin, president; Warner Craig, secretary; William Lee, superintendent; F. A. Benjamin, Benj. Flint, S. Bennett, G. W. Prescott, S. M. Smith, Geo. F. Sharp, P. N. Lilienthal, Jonathan, Kittredge, trustees.

QUINTERO MINING COMPANY.

PHILADELPHIA, NEVADA.

Office, Room 12, Cosmopolitan Hotel. J. D. Fry, president; D. L. Thomas, acting secretary; J. D. Fry, A. K. P. Harmon, Robert Sherwood, D. D. Colton, H. C. Kibbe, trustees. Annual meeting, third Monday in December. No. of shares, 50,000. No. of feet, 2,000. Shares per foot, 25. No. of assessment, 3. Amount, \$5,000. Levied, September 30, 1874. Total assessments, \$15,000.

RAYMOND & ELY MINING COMPANY.

PIOCHE, LINCOLN COUNTY, NEVADA.

Office, 310 Pine Street. M. L. McDonald, president; J. W. Pew, secretary; H. H. Day, superintendent; M. L. McDonald, M. J. McDonald, T. C. Banks, Delos Lake, C. Stevens, trustees. Annual meeting, fourth Tuesday in January. No. of shares, 30,000. No. of feet, 5,000. Shares per foot, 6. No. of assessment, 8. Amount, \$1 per share. Levied, August 6, 1878. Total assessments, \$590,000. No. of dividend, 23. Declared, September 6, 1873. Total dividends, \$3,075,000. Bullion yield, \$13,400,000. Listed on San Francisco Stock and Exchange Board.

The Raymond & Ely was the first mine to attract wide attention through its large and profitable bullion production in Eastern Nevada. It has also, from the very first, been distinguished for an economical and otherwise excellent management. The earlier records of this property contain some of the best chapters in our mining annals, and fairly offset the reverses that latterly, through the exhaustion of its first great ore-find, have clouded its history. It is one of the few mines on the Coast that has paid dividends largely in excess of assessments, as appears by the above tabulated statement of facts. For several years preceding, and including the year 1875, a great prosperity attended the Raymond & Ely, which, since the last mentioned

date, has been yielding no net revenues to the company, though the ore extracted and milled has gone far toward defraying the heavy current expenses entailed, through an uninterrupted prosecution of exploratory work in the interim. The most prolific part of the lode has been that between the 800 and 900-foot levels, where a body of good ore 400 feet in length was struck and afterwards removed and milled. The mine has now been prospected to a depth of over 1,300 feet. In extending the 1,200-foot level the past year, what is known as the Black Ledge was intersected, which was afterwards stripped for a distance of 100 feet, and found to be 30 feet in width from the bottom of a winze sunk alongside this ledge to a depth of 120 feet. Ore was obtained that assayed from \$26.50 to \$35 to the ton, and it is confidently believed that this will prove one of the most important strikes ever made in the mine. The company has lately, at an expense of \$32,000, procured and put in place a Burleigh machine drill, with compressor and other appurtenances, and through the aid of which further deep exploration will be greatly expedited and cheapened. With the hoisting and pumping machinery on hand sinking can be carried on to the 2,000-foot level. The estate of this company includes the Burke and the Creole mines, their property being outfitted with first-class steam hoisting works and two large and well appointed ore reduction mills, one of them carrying 20 stamps, located at the mine, and the other carrying 30 stamps, located at Bullionville, which place is connected with their ore dump by railroad. These mills have been kept running either on ore from the Raymond & Ely or from other mines in the neighborhood, the prospect now being that the company will be able, in a short time, to keep them fully employed on ore from their own mine. The mining public await with interest and will greet with pleasure the return of this old favorite to its former fairly earned and well-sustained dividend-paying status.

REAL DEL MONTE MINING COMPANY.

ESMERALDA MINING DISTRICT.

Office, 304 California Street. H. M. Yerrington, president; A. Baird, secretary; George Daly, superintendent; A. J. Ralston, R. N. Graves, N. K. Masten, Daniel Cook, H. M. Yerrington, trustees. Annual meeting, third Tuesday in October. No. of shares, 50,000. No. of feet, 1,000. Shares per foot, 50. No. of (last) assessment, 3. Amount, \$1. Levied, May 22, 1878. Total assessments, \$50,000.

The new Real del Monte, located in Esmeralda District, Nevada, is formed by the union of portions of the Juniata, and Last Chance grounds, all of which were held under a U. S. patent. The ground thus consolidated comprises 1,000 feet, and is very favorably located. The company was incorporated October 15, 1877, and proposes to work a deep shaft and develop all of the adjacent ground comprised in the claim. The indications are very encouraging, and the principal owners of the property are possessed of capital ample for all purposes of development. There is a first-class three-compartment shaft, two 4x6, for hoisting and one, 4x5 for pump. The engine is of capacity for sinking the shaft 1,500 feet. The shaft passes through a six foot body of ore that assays well. The formation is porphyritic and quite compact. Great interest is taken in the progress of work on the mine, as from the elaborate plans prepared it is evident that Last Chance Hill will be thoroughly explored, and upon the result of this enterprise depends, in a great measure, the renewal of operations on other claims in the vicinity that are now idle. If there is any virtue in an abundance of capital, and energy to back it, we may look for energetic work on this mine.

RED CLOUD CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 58, Nevada Block. Geo. C. Wickman, president; Joel T. Lightner, secretary; S. W. Blasdel, superintendent; H. G. Blasdel, Chas. H. Fish, Annis Merrill, Wm. H. Osgood, Geo. C. Wickware, trustees. Annual meeting, second Wednesday in October. No. of shares, 50,000. No. of feet, 1,500. Shares per foot, 33½. No. of assessment, 2. Amount, 30c. Levied, July 23, 1878. Total assessments, \$30,000. Bullion yield, \$1,927.50.

This mine is located near and on the same line as the Bodie and Standard, and belongs to the same group of mines. It is worked by a two-compartment shaft, which is 400 feet deep at present. Owing to the quantity of water in the lower depths, the company are preparing to erect suitable pumps and machinery to obviate this difficulty. Till this machinery is ready, they are crosscutting at the 250-foot level, and find promising indications of the ledge.

RED CROSS CONSOLIDATED GOLD AND SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Annual meeting, first Monday in September. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. No. of shares, 100,000. No. of feet, 1,300. Shares per foot, 76.

The Red Cross Consolidated is located on and along a line of croppings parallel with the Comstock, and which runs through the Mint and Senator. The claim lies directly east of the Gould & Curry and Best & Belcher. The work of prospecting has been but recently commenced, but great expectations are entertained as to the result when sufficient depth has been attained. A permanent three-compartment shaft is being sunk in connection with the White Cross Consolidated, the expense being borne equally by each company. This shaft is being pushed down energetically.

RED JACKET CONSOLIDATED MINING COMPANY.

DEVIL'S GATE MINING DISTRICT, NEVADA.

Office, Room 12, Cosmopolitan Hotel. A. D. Snedeke, president; D. L. Thomas, secretary; James Blackburn, superintendent; D. L. Thomas, John Crockett, Phillip Hinckle, H. O. Reinhardt, A. D. Snedeke, trustees. Annual meeting, first Monday in November. No. of shares, 100,000. No. of feet, 2,230. Shares per foot, 43.

This mine lies on the track of the Comstock as it extends in a northerly direction from the Sierra Nevada. It is an early location, and has been opened by a vertical shaft put down 250 feet. From the bottom of this shaft a drift has been run 80 feet, and a crosscut extended thence north 25 feet. This crosscut is in good ore, very similar to that found in the Justice mine. The Red Jacket is considered a valuable piece of ground, and under the stimulus imparted to operations on this section of the Comstock belt through the late ore-find in the Sierra Nevada, Union Consolidated and other claims in the vicinity, there is little doubt but shares in this mine will appreciate rapidly.

RELIEF CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; Wm. M. Stewart, Wm. F. Herrin, P. Van Clief, W. J. Hutchings, W. W. Foote, trustees. Annual meeting, first Friday in October. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

The Relief Con. is one of the oldest locations in Bodie District; its north line being 200 feet from the Bodie proper, or Mono; south line running south 1,500 feet, with a well-defined lead, of from seven to eight feet wide. To the west, and running parallel with Relief, is the Blue Belle, also 1,500 feet; this has been consolidated with Relief, making 3,000 feet in the incorporation, with only 60,000 shares. The company have been timbering the shaft until recently, and now sinking goes on again. The shaft is now 90 feet deep, carrying quartz and ledge matter all the way down and across the ledge. The company, feeling confident of its being a paying mine in a short time, have had the ground surveyed by the United States Surveyor, and have already applied for a patent. This is one of the claims in the district that crop out and have a ledge at the surface. There is no question as to its title, the location having been made prior to any other in the vicinity. On the whole, it is believed that the property is second to none in the district.

REMINGTON GRAVEL MINING COMPANY.

YANKEE HILL, TUOLUMNE COUNTY, CALIFORNIA.

Office, Room 80, Nevada Block. J. H. Freeman, president; Daniel Buck, secretary; Jas. Barron, superintendent; J. H. Freeman, C. W. Smith, James Hillman, S. N. Roberts, Wm. Kerr, trustees. Annual meeting, second Wednesday in June. No. of shares, 20,000.

REPUBLIC CONSOLIDATED MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, 310 Pine Street. Wm. M. Stewart, president; G. A. Holden, secretary; A. W. Fox, superintendent; John F. Miller, Wm. M. Stewart, Wm. F. Herrin, P. Van Clief, W. W. Foote, trustees. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

REX MONTIS MINING COMPANY.

KEARSARGE, INYO COUNTY, CALIFORNIA.

Office, 18 Nevada Block. Geo. C. Potter, president; D. Henshaw Ward, secretary; Cook Talcott, superintendent; Geo. C. Potter, D. Henshaw Ward, Thos. J. P. Lacy, Joseph W. Ward, Cook Talcott, trustees. Annual meeting, first Monday in August. No. of shares, 3,200. No. of feet, 1,800. No. of assessment, 10. Total assessments, \$53,736. Bullion yield, \$63,000.

The Rex Montis mines, situated on the northerly side of the Kearsarge Mountain, in Inyo County, State of California, consist of a series of gold and silver ore-bearing veins called the Rex Montis, Boomerang, Arctic and Potosi Nos. 7 and 8. The corporation was formed in August, 1876, with 3,200 shares of \$100 each, and the first ore was taken out in September of that year. The present workings were located at an altitude of 12,500 feet, for the purpose of demonstrating the value of the property, which is being done by a series of tunnels driven into the side of the mountain, one below the other. It has always been the intention, when the value of the property should be demonstrated, to develop the mine by driving tunnels at a lower depth, which can be done, without sinking shafts, to a point 3,000 feet lower than where work is now going on. By this manner of development no pumping nor hoisting machinery will be required, as the ore will be taken from the tunnels, which will afford ventilation and drainage.

Up to August 1, 1878, about \$140,000 had been expended on the property and in the business, of which about \$63,000 had been furnished by bullion, \$58,000 by assessments, and the balance represented the indebtedness of the company. This amount of \$140,000 includes the cost of purchase of the property and of a 10-stamp mill. But little has been done on Boomerang or Arctic, and nothing on Potosi Nos. 7 and 8. Up to the present time, four tunnels have entered the mountain on the Rex Montis claim, running southerly; the highest, No. 1, has been driven only 30 feet and is in ore. No. 2, 178 feet, from which considerable ore has been taken, yielding on an average, by milling, \$120 per ton; and No. 3, 380 feet, from which most of the ore has been taken, averaging about the same value. In No. 3, 77 feet from the face, a winze has been sunk 119 feet, most of the way in rich ore; and Tunnel No. 4 has been driven from

the face of the mountain 306 feet, and connected therewith, furnishing good ventilation and drainage. This tunnel is being continued southerly from the winze and is in ore. The ledge is here 8 feet wide, between regular walls of granite formation, and is below the point of disturbance. Against the hanging wall lies a thick seam of yellow clay. In the tunnels above the vein was narrow but very rich, but pinched in and widened out, showing the ledge to have been broken and disturbed; but in Tunnel No. 4 the walls are regular, and the presence of the clay indicates permanency. The company now propose to drive Tunnel No. 5, below No. 4, and so located as to cut all the veins mentioned above. The ore in Nos. 1, 2 and 3 was milled by wet crushing to a percentage of 80 of the pulp assay, but below No. 3 it has somewhat changed in character, containing antimony and galena, and requiring a furnace for chloridizing. This furnace and appurtenances will be set up in the Spring.

This district, and particularly the Kearsarge Mountain, was known in early days to be very rich in minerals, and, in 1860, was examined by experts, who, however, reported against the advisability of working it at that time on account of its inaccessibility, both from its distance from San Francisco and from its altitude. Since then, however, the construction of railroads have, to a certain extent, overcome the distance from the coast, and it is expected that within a reasonable time there will be communication by rail that will entirely supersede the necessity for teaming. A tramway, to be worked by gravitation, will bring the ore from the mine to a point two miles of the mill, from whence a good wagon-road will be constructed, so that the ore can be delivered at the mill at an expense of not over \$2.50 per ton. Considering the fact that the mines, in consequence of their situation, can be worked by a series of tunnels, furnishing ventilation and drainage for a depth of at least 3,000 feet without sinking a shaft, and thereby doing away with the cost of expensive hoisting and pumping machinery, it will be seen that, while a tramway will be needed to transport the ores, the location has great advantages.

The Independence Tunnel Company are driving a tunnel which will cut all these veins at a depth of some 2,000 feet, and while developing other veins, is of great importance and value to the Rex Montis property. It has been from the first the intention of the principal owners of the Rex Montis mines, in view of the many failures of mining enterprises, to proceed carefully and to get as nearly as possible their expenses within the receipts of bullion—or, in other words, to make the enterprise pay for itself. Although this has not been accomplished in full, yet enough has been done to demonstrate that the property is a valuable one, consisting of ledges of true fissure veins in a regular and permanent formation, and that the judicious expenditure of capital in driving tunnels at a lower depth will develop deposits of rich ore that will pay very largely.

The corporation was started with a capital stock of 3,200 shares, with a view to test, before offering any stock for sale, the permanent value of the property, and as the developments that have been made demonstrate the permanency and richness of the mine, it is probable that to supply the capital necessary to drive additional tunnels, the stock will be increased to 100,000 shares, and that 36,000 shares will be sold for working capital to prosecute the work.

RICHER MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 17, 419 California Street. M. S. Wadsworth, president; W. S. C. Allen, secretary; F. Warukee, superintendent; M. S. Wadsworth, F. Warukee, D. E. Coughaour, J. A. Lytle, W. E. Bridge, trustees. Annual meeting, 8th April. No. of shares, 50,000. No. of assessment, 1. Amount, 50c. Levied, August 28th, 1873. Total assessments, \$25,000.

This company is composed of some experienced men, with means to carry out a substantial system of exploration. This discovery gives promise of developing into a regular "Mother Vein" mine; and we predict for the Richer a regular dividend-paying mine in the near future.

ROCK ISLAND GOLD AND SILVER MINING COMPANY.

GOLD HILL DISTRICT, NEVADA.

Office, Room 6, 318 Pine Street. M. D. Howell, president; J. W. Clark, secretary; Chas. Forman, superintendent; M. D. Howell, W. F. Myers, E. F. Stone, J. B. McGee, J. M. Walker, trustees. Annual meeting, third Tuesday in July. No. of shares, 100,000. No. of feet, 1,200. Shares per foot, 83½. No. of assessment, 13. Amount, 20c. per share. Levied, January 9, 1878. Total assessments, \$325,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Rock Island is on American Flat, south and west of the Baltimore Consolidated. The main ledge lies west of the hoisting works, and crops to the surface in a long range, presenting indications which attracted the immediate attention of the prospectors of early days. The claim was located in 1859, and partially prospected soon after, according to the custom of the men of that period. This, however, amounted to little more than a scratching among the roots of the sage-brush, for surface ore. Subsequently a tunnel was sent into the western range, and the ledge cut. The prospect was so good that it was at once determined to organize for more extended and systematic work. Since then a permanent site for hoisting works, and the shaft, has been selected, buildings large and convenient erected, machinery of approved pattern and great power set up, and a shaft sunk 900 feet. From the 450-foot level, a drift was run to the ledge. It was found to be 270 feet in width, and filled with most promising vein matter, but carrying no pay ore. The prospecting was continued on the 650 and 850-foot levels, with much better promise of success. The ledge was intersected in the shaft between the levels, and there found to contain quartz and low-grade ore in abundance. The south drift, on the

650-foot level, exposed a fine-looking seam of quartz ready for crosscutting, while the drift west, on the 850-foot level, was continued 250 feet in a similar formation, without reaching the west wall of the ledge. The east wall is known from the dip of the ledge to be 130 feet east of the shaft, so that the ledge is not less than 400 feet wide on the 850-foot level. Such formations are never barren. The vein is filled with the true Comstock matrix, and it is only a question of time as to determining the location of the ore body belonging thereto. The company have machinery valued at \$75,000. At this date there is no work being done at the mine. The flow of water was greater than the pumps could handle, and work has been necessarily suspended till more powerful machinery can be procured.

RYE PATCH CONSOLIDATED MINING COMPANY.

RYE PATCH, NEVADA.

Office, 327 Pine Street. Geo. W. Kidd, president; D. F. Verdenal, secretary; L. W. Greenwell, superintendent; Geo. W. Kidd, Alex. Forbes, V. Fernbach, E. B. Clement, John M. Verdenal, trustees. No. of shares, 30,000. No. of assessment, 6. Amount, \$1 per share. Levied, August 26th, 1878. Total assessments, \$97,500. No. of dividend, 9. Amount, 25c. per share. Last declared payable December 31, 1878. Total dividends, \$127,500. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Rye Patch Company own the Alpha and Butte mines, located as far back as 1862, in Echo District, Humboldt County, Nevada. The ore extracted and milled has been considerable, nine dividends having been paid, aggregating \$67,500, against five assessments aggregating \$97,500. The company own a ten-stamp mill, which has been running until about the first of July. It will start up again about October 1st, with a supply of ore which will last for months.

ROUGH AND READY CONSOLIDATED GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 4, 306 Pine Street. H. Mayers, president; A. W. Robinson, secretary; J. C. Chalmers, vice-president; Wells, Fargo & Co.'s Bank, treasurer; David Lowrey, superintendent; John Tague, J. C. Chalmers, H. Mayers, E. E. McCammon, A. H. Rutherford, directors. Incorporated, October, 1878. Annual meeting, first Monday in October. No. of shares, 100,000. No. of feet, 3,000—2 parallel claims, 1,500 feet each.

The property composing this incorporation, consists of two locations of 1,500 feet each, situated on Bodie Peak, in Bodie Mining District, Mono County, directly west of the Syndicate and Sitting Bull, and north of the McClinton mine. This mine is developed by an incline shaft to the depth of 135 feet, showing a well-defined ledge of fair grade milling ore the entire distance from one to three and one-half feet wide. Also, by a drift at bottom of shaft, some 25 feet in length, showing that the true course of the ledge is nearly due north and south, being on a line with, and but a short distance from, the principal mines of the camp. The company propose to commence at once the practical working and developing of the mine, by sinking a perpendicular double-compartment working-shaft a short distance from the incline shaft. The location selected for sinking the new shaft gives the advantage of not less than one hundred feet lower surface and much more favorable ground for sinking, as well as a better location for surface improvements. The above description of this property may be verified by examination, as it is open to the public, and, being an old location, the title is indisputed. The superintendent is an experienced miner and a thorough business man—also, one of the principal owners in the mine; therefore the most economical management as well as the most vigorous prosecution of the work may be looked for, and favorable results expected by the stockholders. The company have set aside 12,000 shares of stock as working capital, which may be had at the office at a reasonable price, where maps of the property may be seen, and all information regarding it will be cheerfully given.

ROUGH AND READY MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 10, Halleck's Building. J. P. Garvey, president; Charles E. De Land, secretary; J. C. Caldwell, superintendent; C. W. Kellogg, Peter Dean, J. P. Garvey, J. M. Livingston, D. C. Ferris, trustees. Annual meeting in February. No. of shares, 100,000. No. of feet, 1,070. No. of assessment, 1. Amount, 10 cents.

The Rough and Ready Mining Company's property is located in Gold Hill Mining District, Storey County, State of Nevada, upon Grizzly Ravine, and adjacent to Gold Cañon. It comprises a mining claim of 1,070 feet upon the "Center Lead," a prominent and well-defined mineral ledge, the necessary buildings and hoisting works, with the appurtenances. The claim, or location, was made on April 10th, 1860, and all the requirements of the mining laws were fully complied with at the time. The shaft of the company has reached the depth of 230 feet, and is now in favorable looking mineral. The company has well-founded prospects for developing good milling ore at a short depth below their present workings. The ledge upon which this company is located has the reputation of producing within the past two years over \$7,000,000 in bullion, and is to-day only in primitive state of development. In addition to its well appointed shaft, the company has run a tunnel of several hundred feet in length, to strike its ledge from the ravine below, and has at the end of the tunnel the indications of the ledge in prominence. The mine of this company is well located, with reference to mines of reputation adjoining it, and whose workings have given them great celebrity in the stock market. It is surrounded by, and is bounded by the Alta, Justice, Lady Washington and Woodville mines, and will take its proper position among the prominent mines of the district within a short time.

RUBY SILVER MINING COMPANY.

GLOBE, ARIZONA TERRITORY.

Office, Room 19, Merchants' Exchange. J. I. Ayres, president; E. G. Freeland, secretary; C. W. Kinseman, superintendent; J. I. Ayres, F. H. Wells, J. W. Kinseman, L. B. Seaver, E. G. Freeland, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Bullion yield, \$75,000.

This company have a strong, well-marked lode, carrying one of those deposits of remarkably high grade ore that have gained for this section of Arizona such a wide and well-deserved notoriety. Much of the ore taken from this mine yields from \$500 to \$800 in silver per ton—a notable percentage assaying as high as \$16,000 per ton. This ore belongs to the same school as that taken from the McMillan or Stonewall claim near by, containing, like it, a considerable quantity of native silver. The best of this ore is selected and shipped to San Francisco, the consignments that have already come to hand carrying from \$4,000 to \$9,000 in silver to the ton. The company are opening the mine with a shaft, and will prosecute work without abatement.

RUSTLER GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 1, 309 California Street. Robert Sherwood, president; A. F. Main, secretary; James R. Judge, superintendent; Robert Sherwood, George Storey, D. Crittenden, W. P. Willard, A. C. Ellis, trustees. Annual meeting, second Monday in September. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

This mine, which lies squarely on the main ore belt that traverses the Bodie District, is being developed by means of a vertical shaft, now sunk to a depth of about 100 feet. Drifting will soon be commenced, and the ledge exposed in depth, with every prospect of opening up rich bodies of ore. Work will not be intermitted until the mine is thoroughly explored.

SABINE MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. T. Weaver, E. E. Smith, trustees. Annual meeting, third Thursday in August. No. of shares, 100,000. No. of feet, 630. No. of assessment, 1. Amount, 15c. per share. Levied, December 1, 1877. Total assessment, \$15,000.

The Sabine Mining Company was incorporated July, 1876. This company is one of the series organized on the original Joe Scates Consolidated ground, and the location is directly east of, and adjoining the Ophir mine. This mine will be developed and worked through a lateral drift from the Sutro Tunnel.

SAILOR BOY GRAVEL MINING COMPANY.

YANKEE HILL, TUOLUMNE COUNTY.

Office, Room 80, Nevada Block. I. R. Hall, president; Daniel Buck, secretary; Isaac R. Hall, John F. Knox, F. C. Moreback, G. J. Binder, trustees. Annual meeting, third Monday in October. No. of shares, 25,000. Acres, 1 60.

SAINT LOUIS GOLD AND SILVER MINING COMPANY.

AZTEC DISTRICT, PIMA COUNTY, ARIZONA.

Office, Room 14, 302 Montgomery Street. John Haynes, president; Chas. Cranz, Jr., secretary; John E. Magee, superintendent; C. S. Benedict, John D. Graham, W. G. Graham, E. S. Irvin, John Haynes, trustees. No. of shares, 100,000. No. of feet, 1,500.

The St. Louis mine is situated in the Aztec Mining District, Santa Rita Mountains, Pima County, Arizona Territory, and about one mile northeasterly from Camp Toltec, and is located on the eastern end of the Empress of India lode, or, as a part of the lode is here called, the General Craig lode. The western end of the mine lies on rather even ground, cut in a few places by arroyos, but the eastern end runs up over high hills. The size of the location is 1,500 feet by 600 feet. The course of the vein is north of east and south of west, and shows the whole length of the mine, from eight to twenty feet of metal. The formation, as is the case with all the other mines on this lode, which can be clearly traced for five miles, is perfect, being granite and porphyry. The ore is of high grade, and is copper-blende, copper-silver glance, sulphurets, and some chlorides. The value of all ore thus far extracted, will easily average over \$100 per ton. But little work has yet been done on this property, as the company was not incorporated until June 1, 1878, but the developments so far made are satisfactory. On this already famous lode there have already been made developments which insure its permanency, and discover the existence of great bodies of high grade ore. This mine, in the opinion of many competent experts, is one of the best on the lode, and will soon become famous for its richness and extent. Near the western end of the mine an arroyo cuts the vein, in the bottom of which the ore, or mineral, shows a solid body of eight feet in width, imbedded in porphyry and granite, while two other threads run parallel with this large body of ore of twelve and fifteen inches in width; here the mine is shown in perfect formation, the vein dipping north, quartz, quartzite, and gangue, all impregnated with copper-blende, and copper-silver glance mineral. From this arroyo, for a distance of 150 feet east, nature had done a work that would cost many thousands of dollars to perform; the wash down through the gap through the hills at this point, through centuries of time, has uncovered the vein for 180 feet, including the arroyo, and there now lies exposed to view, a body of mineral from eight to twelve feet in width, which assays from \$25 to \$250, right on the surface; with a common pick and shovel,

wagons could be here loaded with first-class ore. A shaft is now being sunk about 100 feet east of this arroyo, and on the extreme north side of the croppings, which has attained a depth of about forty feet. The work so far done develops a continuous body of ore from the arroyo, some fifteen feet in width, and rapidly widening as depth is attained. This property is now in the hands of a strong and energetic, experienced company, and will be speedily developed. The facilities for mining are the best. The climate is such that work can be prosecuted every day in the year, the temperature rarely falling below 50°, and seldom rising above 90°; wood is easily accessible. The best water-power in Arizona is within five miles, and labor is unusually cheap. Upon the erection of proper reduction works, the ores should be milled at a cost not exceeding \$12 to \$15 per ton. Col. John D. Graham, Managing Director, a first-class business man, and experienced miner, has charge of operations in the field. The reduction works of the company will soon be in course of erection, work on the mill-site, flumes, etc., being now vigorously pressed.

SAN FERNANDO MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, fourth Monday in August. No. of shares, 100,000. No. of feet, 1,560. Shares per foot, 64.

To the south and east of the Florida, there crops to the surface a broad, well-defined ledge, which has been christened the Vivian & San Fernando Lode, because these locations were made there in an early day. The San Fernando holds the southern extremity of the lode. It was prospected in early days by a tunnel from the ravine below, 750 feet, into the vein, cutting the ledge from 60 to 100 feet below the surface. The tunnel passed through two distinct ledges, both mineral-bearing: the first (called the Vivian Lode) is 300 feet in thickness, and contained ore in streaks and bunches. Twenty feet further on, the second ledge was intersected, which was 200 feet in width. While both ledges carry mineral, they are entirely distinct in their appearance and other characteristics. These ledges, where cut and on the surface, yield good assays. A large three-compartment combination working shaft is being sunk on the line dividing this claim from that of the Vivian Consolidated Company. The expense of development is equally apportioned between the two companies.

SAN XAVIER MINING AND SMELTING COMPANY.

PIMA, ARIZONA TERRITORY.

Office, Room 32, Merchants' Exchange. D. W. F. Bisbee, president; F. A. McGee, secretary; A. S. White, superintendent; D. W. F. Bisbee, R. F. Knox, H. J. Booth, George W. Hopkins, C. P. Sykes, trustees. Annual meeting, second Thursday in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 663.

This company was incorporated under the laws of California, January 28th, 1878, as a mining and smelting company, to operate in the Territory of Arizona. The mine now owned by the company is located in the Pima Mining District, about 18 miles south of Tucson, A. T. Two shafts, B and C, are being sunk on the ledge, and are now (August 15th, 1878) about 80 feet from the surface. The shafts are about 254 feet apart, and, from the surface down to their present depth, nothing but ore, scarcely, has been found, assaying from \$25 to \$180 per ton—the average of the ore on their dumps being over \$50 per ton. Over 500 tons are now out, all being taken from the shafts alone, as no stopping, drifting, or crosscutting has as yet been done. It is designed to run a drift along the vein from shaft to shaft when down 100 feet, and then to crosscut and stope out the ore.

At an early date, it is the intention of the management to erect works, complete, for smelting, and separating the silver from the lead. Abundance of wood can be had, at a cost not exceeding \$3 per cord, near the property, and water in abundance all the year. The San Xavier Ledge is said to be the most extensive one yet found in the Territory, the outcrop being over 200 feet wide in places. The ore is argentiferous galena, and easily smelted, carrying over 40 per cent. of lead. It is estimated that already ore enough is on the dump to pay for cost of erection of works, taken out at a cost for mining of about \$4,000.

SAVAGE MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 15, Nevada Block. Gen. Thomas H. Williams, president; E. B. Holmes, secretary; M. G. Gillette, superintendent; T. H. Williams, J. W. Coleman, Homer S. King, George W. Gordon, J. B. Russell, trustees. Annual meeting, third Thursday in July. No. of shares, 112,000. No. of feet, 800. No. of assessment, 35. Amount, \$1 per share. Levied, Sept. 6th, 1878. Total assessments, \$3,972,000. No. of dividend, 52. Declared, June 11th, 1869. Total dividends, \$4,460,000. Bullion yield, \$15,700,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Savage mine is situated between the Gould & Curry and Hale & Norcross. Few mines on the Comstock Lode have been as thoroughly prospected as this. It has more feet of drifts, crosscuts, shafts, winzes, and inclines than almost any of its neighbors. The croppings were worked to the depth of 335 feet by the old North Potosi and Bowers tunnels, through the latter of which a large quantity of ore was stoped out. The old shaft reached the depth of nearly 700 feet, and the ore extracted between the second (255 feet) to the seventh level (661 feet) from the surface. The new shaft is located considerably to the east of the old one. A considerable body of ore was struck in this shaft on the first level, 567 feet from the surface, which

extended to the fifth level, at the depth of 963 feet. Other bodies of ore were found on the seventh, eighth and eleventh levels, the latter being run at the depth of 1,607 feet. The workings in the Savage are very deep and extensive. The incline which begins at the 1,300-foot level has been sunk to two thousand two hundred and twenty feet, from which a winze was sunk to the depth of 120 feet perpendicular, making an extreme depth of two thousand three hundred feet. It was while drifting on the 2,200-foot level, that a vast body of water was tapped, the flow of which was so great that the pumps and baling apparatus could not control it, and it has taken nearly a year to reduce the water to 120 feet below the 2,000-foot level, at which it stood at latest reports. The mammoth compound horizontal pumping engine of 500-horse-power, similar to that at the C. & C. shaft, which has been erected since the last issue of THE MINING REVIEW, has reduced the water to such an extent as to admit of working on the 2,000-foot level. This powerful engine is controlled by the Davy differential valve. Its initial cylinder is 27 inches in diameter, the piston having a stroke of eight feet. The expansion cylinder is 40 inches in diameter, with eight feet stroke of piston. It is capable of running a column 4,000 feet of 14-inch pumps. It cost about \$175,000. The hoisting machinery of this mine is also of a very powerful and superior character, consisting of a conical reel, on which a double engine winds and unwinds in a continuous groove a steel wire cable 4,000 feet in length, made in such a tapering form that it requires no more power to hoist to the surface than to work a giraffe on the lowest level.

At latest dates, the company were engaged in crosscutting on the 2,000-foot level, about 400 feet from the Gould & Curry line. The amount paid as dividends by this company shows that the mine has been an important bullion producer; and there is little doubt that when its lower levels shall be in a condition for proper working, it will produce as well as ever. The condition of these lower levels at the time of their flooding, was most encouraging, especially at the point where the water was struck. It has been the general rule on the Comstock, that large bodies of water indicate the proximity of heavy deposits of rich ore.

The combination shaft of the Savage, Chollar-Potosi, and Hale & Norcross, is described in detail in the article on the Chollar-Potosi mine.

SCORPION SILVER MINING COMPANY.

VIRGINIA, STORBY COUNTY, NEVADA.

Office, 310 Pine Street. Robert Sherwood, president; George R. Spinney, secretary; R. P. Keating, superintendent; Robert Sherwood, C. F. McDermot, O. F. Giffin, J. P. Jackson, H. F. Cutter, trustees. Annual meeting, second Monday in May. No. of shares, 100,000. No. of feet, 1,324. Listed on San Francisco Stock and Exchange Board.

This is an old location, situated beyond the junction of Six and Seven Mile Cañons, extending north of North Con. Virginia, and reaching nearly to the Mexican and Union Con. There has as yet been but little work done on the property, beyond running a tunnel along the ledge, and obtaining an indication of the value of the mine. Recently a division of property in this locality has just been made, by which the Scorpion will retain 1,324 feet of the ground nearest the Union Consolidated and Sierra Nevada mines. This ground will hereafter be known as the Scorpion mine. The balance of the property will be conveyed in equal parts (800 feet each) to form new companies for certain considerations. The names of these incorporations are to be the Keating, Warsaw, the Garber and the Thornton. Each of them is to consist of 100,000 shares of the par value of \$100. The stockholders in the Scorpion (1,324 feet) will receive a dividend *pro rata* of the stock in the new mines, each of which has 800 feet.

SEGREGATED BELCHER MINING COMPANY.

GOLD HILL, NEVADA.

Office, 414 California Street. R. F. Morrow, president; George D. Edwards, secretary; R. F. Morrow, R. N. Graves, J. H. Dobinson, Joseph Clark, R. Wegener, trustees. Annual meeting, first Tuesday in October. No. of shares, 6,400. No. of feet, 160. Shares per foot, 40. No. of assessment, 15. Amount, \$5 per share. Levied, April 10, 1876. Bullion yield to October 1, 1877, \$235,738.65. Listed on San Francisco Stock and Exchange Board.

SEGREGATED CALEDONIAN MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, Room 21, 419 California Street. C. L. Weller, president; D. L. Thomas, secretary; C. L. Weller, Chas. S. Neal, Wendel Easton, William H. Bremer, C. F. Horn, trustees. Annual meeting, last Thursday in August. No. of shares, 30,000. No. of feet, 100. Shares per foot, 300. No. of assessment, 2. Levied, February 29, 1876. Total assessments, \$111,600.

This mine holds a narrow strip uniting the Caledonian and Knickerbocker locations. Its value is to be determined by its position rather than by any developments in the location itself.

SELBY COPPER MINING AND SMELTING COMPANY.

ROBINSON, WHITE PINE COUNTY, NEVADA.

Office, Room 32, Merchants' Exchange. Smith Ely, president; Francis A. McGee, secretary; Thomas H. Selby, superintendent; Smith Ely, Thomas H. Selby, J. W. Long, F. F. Thomas, D. W. F. Bisbee, trustees. Annual meeting, second Monday in September. No. of shares, 100,000. No. of feet, 24 mines, 1,500 each. Shares per foot, 23.

This company incorporated under the laws of California September, 1878, for the purpose of mining for copper ores, and smelting the same in the State of Nevada. Smelting works are already erected, with a capacity for smelting 50 tons of ore per day. An abundance of wood for burning charcoal is found near the mines, at a very low price, and a fine stream of running

water all the year through, gives all the power required for running machinery and furnaces. The company owns within a radius of seven miles from their furnaces, twenty-four copper mines, well developed, from which, within 12 months, they expect to take out, at least, 100 tons of ore per day. The ore is of very superior quality, easily smelted, and now averages 20 per cent. in copper. Carbonates and oxides are the characteristics of the ores yet laid bare, and many thousand tons are in sight. This company is in the hands of but few individuals, nearly all of whom are experienced in copper mining and smelting, and devote their time and personal attention to the development of their enterprise, which is destined to be, at an early day, the most important copper enterprise west of the Rocky Mountains. Refining furnaces are to be erected shortly, to produce ingot copper, instead of the black copper now produced.

SELBY HILL MINING COMPANY.

NEVADA CITY, NEVADA COUNTY, CALIFORNIA.

Office, Rooms 6 and 7, 211 Sansone Street. H. H. Pearson, president; H. Augustus Whiting, secretary; John Cashin, superintendent; H. H. Pearson, O. W. F. Randolph, Julius Jacobs, James Brooks, T. C. Lamps, trustees. Annual meeting, third Monday in December. No. of shares, 40,000. Bullion yield, \$8,123.20.

SEVENTY-SIX SILVER MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA TERRITORY.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; S. W. Foreman, superintendent; C. Gurnee, Fred. W. Hadley, C. W. Kellogg, L. Vesaria, E. F. Stone, trustees. Annual meeting, third Wednesday in October. No. of shares, 100,000. No. of feet, 1,500.

The company have a 5-stamp concentration mill at Picket Post, and the "Seventy-six" mine near the "Silver King." The mine is developed by shaft, 153 feet in depth, by several drifts. A new working shaft is now being sunk, which will be connected with the old shaft for ventilation. The mine is believed, by many experts, to be on the Silver King lode. The character and richness of the ore much resembles that taken from the King. The mill is complete and is doing fine work—the average crushing having been about 13 tons per day since it started in June last. Machinery for hoisting works at new shaft is on the ground, and is of sufficient power to sink 1,000 feet, and will be erected at once. The title to the Seventy-six mine is perfect.

SHEBA SILVER MINING COMPANY.

HUMBOLDT COUNTY, NEVADA.

Office, 312 Montgomery Street. J. L. E. Kelly, president; A. Halsey, secretary; Peter Woolcock, superintendent; J. L. E. Kelly, P. H. Kraner, E. E. Brewster, C. C. Knox, J. H. Kinkead, trustees. Annual meeting, February 28th. No. of shares, 100,000. Total assessments, \$50,604.80. Bullion yield, \$15,922.26.

SENATOR MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 5, 302 California Street. George Congdon, president; L. Reynolds, secretary; Frank M. Thayer superintendent; George Congdon, W. S. Wood, T. G. Taylor, S. Lubeck, L. Reynolds, trustees. Annual meeting, August 25th, 1878. No. of shares, 103,000. No. of feet, 2,000. Shares per foot, 54. Listed on the San Francisco Stock and Exchange Board.

This ledge was located in Virginia mining district in 1862. The claim adjoins the Julia to the southeast, and lies directly eastward of the Chollar-Potosi, Hale & Norcross and Savage. It is supplied with powerful machinery, fully ample for present purposes. Its location is one of the best on the Comstock. The mine is entirely free from debt, and energetic work is progressing toward a full development. This work will be carried on through the Sutro Tunnel, a contract having been made with the tunnel company for this purpose. The tunnel from the Sutro to the Julia will be run directly through the property, and a rich development is expected.

SIERRA NEVADA GOLD AND SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, Room 42, Nevada Block. John Skae, president; W. W. Stetson, secretary; C. M. Bonnemort, superintendent; John Skae, Jos. Clark, A. E. Head, R. N. Graves, Chas. H. Fish, trustees. Annual meeting, third Wednesday in January. No. of shares, 100,000. No. of feet, 3,600. No. of assessment, 55. Total assessments, \$2,275,000. No. of dividend, 11. Amount, \$102,500. Declared, January 16, 1871. Bullion yield, \$906,552.10. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The career of this mine is familiar to the old denizens of the Comstock. Its former successes, hardships, and sometimes disrepute, are alike known to those who have participated in the ups and downs of the developments of the mines of Storey County, Nevada. Indeed, there is no mine in the Silver State that, up to date, has had so remarkable experiences. The property contains 3,600 feet, and the original record of location can be found in Book A, page 1, of the Gold Hill Records. Thus it will be seen that it is the oldest recorded location on the Comstock. It is composed of a combination of other somewhat ancient claims with the original Sierra Nevada. These locations have, during the career of the original location, and in part since the consolidation, produced over \$2,000,000, most of which was gold. The greater portion of this was taken out before the present incorporation. The original location, as is well known, is at what was formerly designated as the north end of the Comstock. For a long time, in addition to sinking a shaft and establishing works on the original site, a great deal of gold was taken out of Cedar Hill, which in part is embraced in the original location, and into which a tunnel had been run that for a long time yielded 60 tons of ore per day.

This was stopped for about two years prior to 1875, and the managers, believing there existed a valuable bonanza development farther to the north, shut down the mill temporarily, and began the sinking of what is now known as the new shaft. In the year 1874-5, the mine produced \$90,700 in bullion; but, to start the work on the new shaft properly, more money was needed, and three consecutive assessments were levied, to the disgust of the stockholders, producing \$250,000. Since then, there have been levied 52 assessments, aggregating \$2,275,000—the last one, of one dollar per share, having been imposed July 31, 1878. The amount of dividends paid, \$102,500. During the year 1874, there were expended \$210,000 on the new shaft; and, at the end of that fiscal year, there was cash on hand, \$33,000, and \$2,200 from an assessment. The hopes of the managers still centered on the new shaft, and, in full faith in the great development, from that day to this, every effort has been made in prosecuting the work to its present fruition.

It may be well to remark that the new shaft is located about 1,100 feet east and 1,000 feet north of the old shaft. Both shafts are working at present, although the new shaft is the present attraction on the Comstock. The old shaft is prospecting by means of drifts and crosscuts on various levels from the 300-ft. down, running westerly toward the ledge. It was some time since that over 1,200 feet of the vein were laid bare on the 700-ft. level; and from this, as well as nearly all of the other levels, the indications have continued to improve. The developments on the 1,000, 1,250, and 1,510-ft. levels inspired renewed confidence, and the work has since been pushed on with great energy. Indeed, it may be said in truth, that, since this property fell under the control of the present management, it has been worked for all it is worth. Mr. Skae, who presides over the destinies of the mine, is fully competent to bring from the lowest depths all of the treasure therein contained, inasmuch as he is a thoroughly practical miner, and as competent an expert as ever examined a lead. In addition, he is indefatigable in everything he undertakes; and, since his assumption of the management, the mine has advanced with rapid strides in development, and the stock has become the most popular of those listed on the Boards. The amount of machinery now in use on the new shaft is sufficient to develop the property to a depth of 2,200 feet.

The interest in the mine at present is centered in the main south incline in the new shaft. The ore vein covers the full size of the incline, and assays from \$300 to \$800 per ton. The crosscut near the 2,100-foot level has not been worked for some time, and the face still remains, at this date (October 2) in the rich ore heretofore reported. The incline has but 15 or 20 feet to run before the 2,200-foot level will be reached and crosscutting begun. The assays taken at the latter vicinity speak for themselves: West crosscut, \$938.46; left of incline, in cap rock, \$7; right of incline, in cap rock, \$43.15; six inches deeper than face of crosscut, \$725.75; a duplicate assay reached \$838; average samples from west crosscut assayed \$115.53; center and front of incline, just below cap rock, \$111.77. Such is the property that, after long years of patient waiting, hard toil under discouraging circumstances, and too often almost hopeless surroundings, comes forth from hidden recesses to reward the perseverance of the management. Here, we are assured, is indeed a new and immense bonanza, the harbinger of better times at the north end. To successfully utilize this rich development, new reels and hoisting machinery have been put in, and are now working admirably; and in a few weeks we may look for a still more satisfactory balance-sheet from the mine. It is understood that before long the company will begin the erection of extensive reduction works on Seven-mile Cañon, a short distance below the mine. This will be needed, as the development progresses so rapidly in such high-grade ore. From present indications on every hand, there is but little doubt that the day is very near when Sierra Nevada will be a dividend-paying mine. The following statement of the highest and lowest points the stock has reached during the last four years, is suggestive of the variety of results that have attended the work of development. They are also suggestive of the estimation in which the mine has been held by operators. Really, in this bit of history, extremes meet:

LOWEST.		HIGHEST.	
1875 — May	\$9.00	1875 — January	\$ 27.50
1876 — December	8.50	1876 — “	23.75
1877 — May	75	1877 — “	10.00
1878 — “	2.75	1878 — September	270.00

In another portion of this work we have theorized somewhat, but in this connection it may not be out of place to ask, if the recent successes of this mine are not at least indicative of a new era in mining on the Comstock?—if they do not actually demonstrate the correctness of certain oft-repeated theories? May not the underground exhibit of to-day be but the forerunner of a colossal development of heretofore unknown richness? These queries, and many more, will receive their answers before many months elapse. However, sufficient unto the day is the bounty thereof. We leave developments of the future in charge of an efficient management, that can read its title clear to bonanzas yet untold.

SEGREGATED GOLD HILL MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 309 California Street. E. T. Bacon, president; J. M. Buffington, secretary; Annual meeting, at call of the president. No. of shares, 60,000. No. of feet, 1,000. Shares per foot, 60. Listed on San Francisco Stock and Exchange Board.

The Segregated Gold Hill lies immediately west of the Alpha and Exchequer, lapping upon both the Bullion and Imperial Consolidated, and east of the original Gold Hill. The prospecting was very active here in the early days, and much ore was taken out in the adjoining localities. The shaft is down about 420 feet, and has cut into a well-defined body of lively quartz, with rich spots that assay high. The ledge looks very favorable, and has well-defined walls. The mines lying east of the location will drain the property. Lately, the work has been suspended for want of funds.

SIGNAL SILVER MINING COMPANY.

MOHAVE COUNTY, ARIZONA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; C. S. Curtiss, secretary; Thomas Ewing, superintendent; A. K. P. Harmon, J. D. Fry, A. J. Ralston, W. S. Hobart, George W. Prescott, trustees. Annual meeting, first Tuesday in April. No. of shares, 100,000. No. of assessment, 2. Amount, 50c. per share. Levied, May 16th, 1878. Total assessments, \$73,576.50. Bullion yield, \$60,118.52.

SIGOURNEY GOLD AND SILVER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA,

Office, Room 25, Nevada Block. D. Perry, president; Geo. C. Pratt, secretary; S. W. Blaisdell, superintendent; Geo. W. Hazelton, J. W. Winter, D. Perry, Samuel I. Marston, John Sanborn, directors. Annual meeting, third Tuesday in August. No. of shares, 70,000. No. of assessment, 1. Levied, Sept. 27, 1878. Amount, 25c. per share. Total assessments, \$17,500.

SILVER CROWN MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, Room 1, 240 Montgomery Street. Thos. S. Atherstone, president; A. W. Robinson, secretary; T. S. Atherstone, F. M. Hackett, C. O. Dean, A. W. Robinson, M. C. Jewell, trustees. Annual meeting, 16th of March. No. of shares, 100,000. No. of feet, 1,500.

SILVER GLANCE MINING AND SMELTING COMPANY.

MOHAVE COUNTY, ARIZONA.

Office, 80 Nevada Block. E. M. Walker, president; Daniel Buck, secretary; E. M. Walker, Ira P. Rankin, Daniel B. Gillette, Jr., Emerson Gaylord, James D. Brewer, trustees. Annual meeting, second Thursday in March. No. of shares, 50,000. No. of feet, 1,500 by 600.

SILVER HILL MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; M. C. Hillyer, superintendent; A. K. P. Harmon, W. S. Hobart, C. N. Felton, George Congdon, S. Heydenfeldt, trustees. Annual meeting, last Monday in May. No. of shares, 108,000. No. of feet, 4,200. Shares per foot, 25 $\frac{3}{4}$. No. of assessment, 2. Amount, 50c. per share. Levied, Sept. 30, 1878. Total assessments, \$1,296,000. Bullion yield, \$138,033. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

From the slight excavations made on the several claims composing the property of this company, something like a \$1,000,000 worth of ore is supposed to have been taken. This ore was of such high grade that it paid a handsome profit at a time when the cost of extracting and milling was greatly in excess of present rates. These claims were among the first located along Gold Cañon, having been taken up when the pioneer prospector had his pick of the ground in that locality. During the past two years exploration has been carried on here without interruption, various surface improvements having been added to the property meantime. Among the latter may be enumerated the placing of a 13-inch plunger pump at the 800-foot station, the construction of a powerful air compressor, the erection of boiler house and machine shop and the procurement of a partial set of new boilers and an extra engine to drive the lathes, planes, drills, etc., together with a new cylinder and a 6,000-pound fly-wheel, the last two required for the further sinking of the main incline, now down about 1,000 feet, and which, with the machinery on hand, can be carried to a vertical depth of 1,500 or 1,600 feet. Work of late has been prosecuted chiefly on the 650, the 800 and the 900-foot levels, on each of which extensive drifting and crosscutting have been carried on. Some winzes, with lateral drifts, have also been excavated, an ore body four and a half feet thick giving assays as high as \$50 per ton, having been cut in the winze sunk from the 650-foot level. As its inclination carried it away from the winze, this ore find has not yet been followed up, though regarded as one of much promise. The main drift east on the 800-foot level, now advanced over 700 feet in that direction, has passed through many seams of lively looking quartz, carrying patches of medium grade ore, the face of the drift being in a favorable formation. The north drift on the 650-foot level connecting with the 1,000-foot level of the Justice secures improved ventilation in both mines. The south drift on this level, after being extended to the north line of the St. Louis, has been carried along that line northeasterly for a distance of over 100 feet. While the face of the south lateral drift on the 800-foot level is in good quartz, the entire face of the north drift on this level is in quartz and ore, the latter being of very fair grade, and the vein matter throughout of a compact and lively nature, promising the uncovering of a pay chute of ore at every foot of advancement made. The main east drift on the 900-foot level is also in solid quartz, blotched with good ore. It is due the management to state that while pushing developments steadily forward, they have operated this mine with a strict regard to economy, current expenditures having been kept within moderate bounds. As the property is well equipped and the plant in good condition, the shareholders of the Silver Hill are not likely to be heavily burthened in the future, while their chances for speedily opening up a paying mine are certainly very good.

SILVER KING MINING COMPANY.

PIONEER, ARIZONA.

Office, 320 California Street. George L. Woods, president; Wm. H. Boothe, secretary; Aaron Mason, superintendent; James M. Barney, B. W. Reagan, B. A. Barney, George L. Woods, W. H. Boothe, trustees. Annual meeting, second Tuesday in January. No. of shares, 100,000. No. of feet, 1,500. No. of dividend, 8. Amount, \$50,000. Declared, August 21, 1878. Total dividends, \$400,000. Bullion yield, \$2,000,000. Listed on San Francisco Stock and Exchange Board.

Among the many rich and notable silver mines of the Pacific States is the Silver King, situated 35 miles northeast from Florence, in Pioneer Mining District, Pinal County, Arizona, in a range of high and rugged mountains, known as the "Pinal Mountains," extending for many miles through the territory in a northwesterly and southeasterly direction, and everywhere replete with evidence of great mineral wealth—rich ores of silver, gold, copper, lead, antimony and other metals being found all along this mountain range for a distance of over one hundred miles. In fact, the "Pinal" is only a section of the great "Sierra Madre" of Mexico, and directly in the great metal-bearing "belt" or "zone" of North America. The "Silver King" is a new mine, having been accidentally discovered and located in March, 1875; but no work of note done thereupon until July, 1876, when the work of development properly commenced. The outcroppings of the ledge was found upon the apex of a small conical hill or mountain, just below the summit of the main "Pinal Range," where the same is crossed by the old military road, known as "Stoneman's Grade," in a belt of granite, very hard and compact. The vein matter of the Silver King is principally a pure quartz, highly crystalline, hard and friable, and rich in native silver and silver ores, with considerable quantities of very rich argentiferous galena, some of which is over 30 per cent. lead, and worth over \$1,000 per ton in silver. The vein has been partially explored to a depth of over 250 feet, without any apparent diminution in the richness or quantity of ore. The ledge is perfectly well-defined, and at a depth of 160 feet it is over 70 feet thick, with perfect and well-defined walls, clay gauge, etc., and shows, unmistakably, that it is destined, at some future day, to be one of the great, rich and lasting silver mines of the world. As yet, it is only partially developed; it has had no extrinsic aid whatever; no assessments have been levied; no subsidy asked or required. The mine has not only paid expenses, but a handsome profit from the start; has built roads, erected a first-class 10-stamp mill, made costly and valuable improvements, and all this under the most adverse circumstances—the mine being in a far-off territory; distant from commerce, with no supplies; away from all lines of transportation outside a mining community, and yet has been worked with profit; made a success, as a legitimate, industrial enterprise, affording a worthy example of what can be done in mining by the exercise of faith, industry and business sagacity. It is impossible to determine the exact average value per ton of the Silver King ore. Much of the inferior ore is on the "dumps" of the mine. Before the mill was erected, much of the richer ore was sold in gross in San Francisco, sent East, etc.; and since then much ore has been concentrated at the mill, and concentrations sold, etc. Much of the ore is wonderfully rich, large quantities of it being worth from \$10,000 to \$17,000 per ton; beside which are occasionally found considerable quantities of almost pure silver, called by the miners "Silver Nuggets." Of the gross product of the mine, 9,000 tons have been sold, at various prices and in various ways, but all aggregating the sum of \$1,900,000; and being, perhaps, nearly 80 per cent. of the actual assay value of all the ore so sold. The Silver King is being continuously worked, with a regular and constantly increasing yield in the production of ore, which will be still further augmented upon the completion of the regular steam-hoisting works now in contemplation.

SILVER KING NORTH SILVER MINING COMPANY.

PIONEER, ARIZONA.

Office, Room 36, 330 Pine Street. W. E. Hale, president; J. H. Sayre, secretary; J. W. Gain, superintendent; W. E. Hale, Jas. Walsh, Leon Weil, Camil Martin, H. L. Coye, trustees. Annual meeting, July. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

SILVER NUGGET MINING COMPANY.

GLOBE, MARICOPA COUNTY, ARIZONA.

Office, Room 80, Nevada Block. J. M. Martin, president; Daniel Buck, secretary; D. G. Chilson, superintendent; J. M. Martin, W. E. Dean, Jas. Fulton, A. P. Overton, L. A. Kelly, trustees. Annual meeting, last Friday in December. No. of shares, 100,000. No. of feet, 722 by 600.

This mine is located in Richmond Basin, Globe District, Pinal County, Arizona. The property was discovered February 17, 1876. The ore was first found in a float vein, and was of a very high order. It assays from \$2,000 to \$8,000 per ton. The average assay of twenty tons was about \$3,500. An open cut has been run about 400 feet on the float vein, which developed a vertical vein of fine ore. Here a shaft has been sunk to a depth of seventy feet, showing the same character of rich deposit of chloride and silver glance ore, as passed in the float vein. At a depth of forty to fifty feet the vein is from two to three feet in width. At the depth of forty feet the ore assays from \$1,000 to \$6,000 per ton. There are three shafts in all; the first, to a depth of thirty-two feet; the second, seventy feet; and the third thirty feet; each carries the same character of ore.

SILVER QUEEN MINING COMPANY.

PIONEER, PINAL COUNTY, ARIZONA TERRITORY.

Office, 320 California Street. B. A. Barney, president; Wm. H. Boothe, secretary; W. R. DeFrees, superintendent; Geo. W. Hopkins, B. A. Barney, W. R. DeFrees, B. W. Reagan, Wm. H. Boothe, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

This claim is situated about two miles southeasterly from the celebrated Silver King mine, which has made such a wonderful bullion production the past year. It is one of the earliest locations made in the Pioneer District, and from its supposed position on the rich mineral belt that here crosses the country, is a property of large prospective value. The main ore-bearing stratum in the ledge carries a grey carbonate of copper and malachite, with an exceedingly rich silver ore, some portions of which assay over \$10,000 to the ton, no inconsiderable percentage, in fact, being virgin metal. The lode proper ranges from five to six feet in width, there being on each side of it a formation that contains scattered bunches of high-grade silver ore, and which it is thought may eventually gather into the main lode, giving it great enrichment. The country rock is composed of slate, basalt, granite and mountain limestone, the formation being much mixed up. This mine has been partially prospected by means of three shafts and a tunnel, one of the shafts being about 100 feet deep. Several hundred tons of ore have been taken out, a portion of which has been shipped to market, the whole of it being of high grade. This company will proceed to explore the mine in a systematic and thorough manner, having ample means for the purpose, and being satisfied that money so expended will prove a good investment.

SITTING BULL MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 2, San Francisco Stock Exchange. Wm. M. Stewart, president; W. H. Lent, secretary; A. W. Fox, superintendent; Wm. M. Stewart, Wm. M. Lent, W. B. Can, F. Tagliabue, F. K. Bechtel, trustees. Annual meeting, first Monday in April. No. of shares, 60,000. No. of feet, 1,000. Listed on San Francisco Stock and Exchange Board.

The Sitting Bull mine is located west of the Bechtel, and has been prospected to a depth of 200 feet. At the bottom of the shaft the ledge shows a thickness of 26 inches, and the quality of ore remains the same, looking splendidly, as at first, and giving assays at from \$100 to \$200 per ton. The ledge is increasing in width, and from all indications the mine will prove a valuable property.

SLATE CREEK GOLD MINING COMPANY.

SIERRA COUNTY, CALIFORNIA.

Office, 240 Montgomery Street. F. H. Wells, president; J. L. Fields, secretary; F. H. Wells, Geo. W. Osborn, W. A. Roberts, J. H. Pohlker, E. T. Dennison, trustees. Annual meeting, first Thursday in August. No. of shares, 100,000. Six miles of bed of Slate Creek.

SOUTH BARCELONA MINING COMPANY.

SPANISH BELT, NYE COUNTY, NEVADA.

Office, 320 Sansome Street. Benj. Flint, president; Warner Craig, secretary; Benj. Flint, Richd. Homfray, F. A. Benjamin, H. K. Moon, trustees.

SOUTH BODIE GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 44, Nevada Block. Robert Barton, president; Henry Deas, secretary; H. C. Callahan, superintendent; B. B. Minor, E. C. Morton, Henry Deas, W. H. Brown, Robert Barton, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The property of this company consists of the "Hancock" claim, 1,500 feet long, located in June, 1877. It lies to the south of the celebrated Bodie mine, and indications lend a strong support to the theory that the rich veins struck by the Bodie Company will be found in the South Bodie ground when sufficient depth is attained. The surface ground on this claim was worked with great success as a placer claim in the early days of Bodie Bluff, and the richest float quartz ever struck in the district was found near the point where sinking is now in progress on this mine. A shaft has been sunk on this claim to a depth of 120 feet, over which a fine engine has been erected for hoisting ore, and satisfactory progress is being made at all points. It is proposed to sink the shaft to a depth of 200 feet, when crosscutting will commence and be prosecuted until the vein is struck. The bottom of the shaft is now in ledge matter. Within 60 days important developments are looked for.

SOUTH COMSTOCK CONSOLIDATED SILVER MINING COMPANY.

DEVIL'S GATE, STOREY COUNTY, NEVADA.

Office, 309 California Street. Robert Sherwood, president; J. M. Buffington, secretary; Robert Sherwood, George Schultz, W. F. Myers, George W. Rogers, J. M. Buffington, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. No. of feet, 2,000, (S. C. lode) 1,500 (Cliff House lode.) Shares per foot, 5.

The South Comstock lies south of the Monumental and Leo, and south and east, and adjoining the Silver Hill. The ledge is plainly traceable through the claim by croppings here and there along the surface, and by other unmistakable indications. The location for the shaft has been carefully selected to the east of the ledge, which will be found to pitch in that direction. The shaft has been sunk to the depth of 500 feet. From the station on this level a drift was run west to the ledge, which was reached at a distance of 330 feet. The drift at last accounts

had penetrated the vein nearly 100 feet, and showed no signs of approaching the west wall, which is the objective point. The company has secured a U. S. patent for their claim, and have erected hoisting works of sufficient capacity to sink, at least, 1,000 feet. The developments thus far made show a ledge of five feet, in low grade ore. The prospects for the mine are excellent.

SOUTH END MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 313 Pine Street. Edw. F. Stone, president; J. W. Clark, secretary; J. B. Overton, superintendent; E. F. Stone, J. M. Walker, M. D. Howell, S. N. Putnam, E. S. Davis, trustees. Annual meeting, third Wednesday in March. No. of shares, 100,000. No. of feet, 3,000. No. of assessment, 3. Amount, \$20,000. Levied, January 9, 1878. Total assessments, \$40,000.

The South End mine (embracing the location formerly known as the Comet) shows, for the work done upon it, very promising indications. A well-defined ledge, and carrying a body of ore which assays from \$150 to \$250 per ton. There has not been any work done for several months. Measures are being taken to secure the requisite amount of capital, and it is expected that the company will begin the further development of its property soon.

SOUTH FEATHER WATER AND UNION MINING COMPANY.

PLUMAS, YUBA AND BUTTE COUNTIES, CALIFORNIA.

Office, 312 Montgomery Street. E. Green, president; H. R. Kimball and Jno. Harris, superintendents; E. Green, G. Palache, H. M. Newhall, G. F. Bowman, R. E. Brewster, trustees. Annual meeting, August 4th. No. of shares, 60,000.

SOUTH JUSTICE MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, 419 Pine Street. E. N. Torrey, president; Edward F. Stone, secretary; E. N. Torrey, C. E. Elliott, J. H. White, J. T. Babcox, E. F. Stone, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of feet, 400. Shares per foot, 250.

The South Justice lies between the Justice and Silver Hill mines, connecting the two. The best developments of the Silver Hill are at the north end, and the big ore body of the Justice is well to the south, and makes still further in that direction. Active developments are about to be commenced.

SOUTH OVRMAN SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 21, 328 Montgomery Street. A. P. Cox, president; David Wilder, secretary; A. P. Cox, C. A. Schmitt, J. Clem Uhler, J. H. H. Williams, David Wilder, trustees. Annual meeting, fourth Saturday in July. No. of shares, 30,000. No. of feet, 1,500. Shares per foot, 20. No. of assessment, 3. Amount, \$30,000. Levied, August 6, 1875. Total assessments, \$60,000. Listed on San Francisco Stock and Exchange Board.

SOUTH SPRING HILL MINING COMPANY.

AMADOR COUNTY, CALIFORNIA.

Office, 320 Sansome Street. Benj. Flint, president; Warner Craig, secretary; Benjamin Flint, John Tregloan, W. H. Reynolds, Geo. P. Thurston, Jno. R. Tregloan, trustees.

SOLID SILVER GOLD AND SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 331 Montgomery Street. H. Cox, president; J. J. Applegate, secretary; J. Green, superintendent; R. Hewson, J. J. Applegate, H. J. Booth, H. Cox, J. C. Wilmerding, trustees. Annual meeting, second Tuesday in February. No. of shares, 100,000. No. of feet, 3,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This mine is situated on Cedar Hill, adjoining the Sierra Nevada and Union Consolidated, and consists of a main tunnel or adit about 1,500 feet in length, lapping the center of the hill about 1,200 feet from the top. From this main tunnel branches and crosscuts have been run, aggregating about 750 feet. A winze, recently sunk below the tunnel, is at a depth of 100 feet in very promising ore, and preparations are now being made to crosscut from the bottom of the winze, to tap the ledge recently cut through on the west side of the tunnel.

SOUTH STANDARD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 20, 331 Montgomery Street. Wales L. Palmer, president; C. A. Sankey, secretary; Wales L. Palmer, Israel W. Knox, C. C. Stevenson, C. H. Golding, C. A. Sankey, trustees. Annual meeting, second Thursday in September. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{3}$. No. of assessment, 2. Amount, 25c. per share. Levied, January 11, 1878. Total assessments, \$25,000.

This claim is situated on the Bruce and Burgess lodes, both of which have been demonstrated to possess great value. The property stands clearly in the track of the ore range that here passes through the country, quartz veins, well charged with the precious metals, having been intersected in the crosscuts already run in this ground. The rock bears a strong resemblance to the Comstock ores, gold thus far being the predominant metal. A shaft has been sunk on this ground to a depth of 200 feet, and arrangements perfected for placing steam hoisting works over it, after which sinking will be resumed and prosecuted with energy. The position of this ground, aside from the fine mineral indications obtained, gives it importance, being in line with some of the best claims in the district, and centrally, not over 300 feet, distant from the main workings of the Bodie. The company is made up of good men, the most

of them practical miners, and this property ought to be in favor with the investing public. The miners about Virginia City and Gold Hill, acting under advices from their companions in Bodie, are said to be buying largely into the South Standard, a pretty good guide for those less experienced in these matters.

SOUTH UTAH MINING COMPANY.

VIRGINIA, NEVADA.

Office, 303 Pine Street. H. R. Howell, president; H. H. Howell, secretary; S. Burbridge, superintendent; H. R. Howell, J. G. Jeffress, J. L. Finch, J. W. Clough, F. G. Bouton, trustees. Annual meeting, September 7th. No. of shares, 100,000. No. of feet, 1,000. Shares per foot, 100. Listed on Pacific Stock Exchange.

The South Utah is located about 1,200 feet northerly from the Sierra Nevada, and lies between the Phil Sheridan and the Utah mines. The reversed interest that has lately arisen in the mining properties of this locality has drawn attention to the South Utah, although it is not a new mine. Prospecting began on this property in 1863, and a tunnel has been constructed for a distance of about 400 feet into the hill, near which point two winzes have been sunk to a depth of 100 feet each. Here a fine body of vein matter has been developed which promises well for the future, and prompts energetic work in further effort on the part of the management. All of the surroundings, as well as the results of the labor already expended on the mine, warrant the degree of faith that the company have in their lead. It is in nowise hazardous to predict a bright future for the mine.

SPAULDING GOLD AND SILVER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 117 Battery Street. Wm. A. Searles, president; J. Berolzhime, secretary; A. F. Bryant, superintendent; Wm. A. Searles, Lewis Slessinger, A. F. Bryant, J. Berolzhime, Geo. E. Carter, trustees. Annual meeting, second Tuesday in October. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33 $\frac{1}{3}$. Listed on California Stock Exchange Board and New York Stock Board.

This company has run a shaft nearly 300 feet. Are drifting north and south on the 230-ft. level. Vein well defined, of over five feet. Assays show an average of \$200 per ton. Ground is surveyed, and United States patent applied for. Are now timbering shafts, and will commence sinking during August. The company have a patent windlass for hoisting, as well as one of the best steam hoisting works of the district, erected during the month of August by Hawkins & Cantrell, of San Francisco. Number of miners during August, 15 men. Mine was located by A. F. Bryant, of Bridgeport. Amongst the leading men of the mine, we find the Hon. G. K. Porter, of San Francisco; N. E. Spaulding, Esq., of Boston, Mass.; and the genial young Secretary, Mr. J. Berolzhime, late of Indiana, but now a well-known mining man of California Street. Mr. W. A. Searles, the President of the company, is a worker; and his constant and close attention to the interest of the company cannot help but make the Spaulding one of the leading mines of the district.

ST. LOUIS MINING COMPANY.

GOLD HILL, NEVADA.

Office, Room 3, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; M. C. Hillyer, superintendent; A. K. P. Harmon, W. S. Hobart, J. D. Fry, C. N. Felton, W. E. Dean, trustees. Annual meeting, first Monday in June. No. of shares, 108,000. No. of feet, 1,200. Shares per foot, 90. No. of assessment, 1. Amount, 15c. Levied, Sept. 26, 1878. Total assessments, \$16,200. Listed on San Francisco Stock and Exchange Board.

STANDARD GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 29, Nevada Block. Daniel Cook, president; William Willis, secretary; William Irwin, superintendent; Daniel Cook, Monroe Thomson, John F. Boyd, Robert N. Graves, Thomas Bell, trustees. Annual meeting, first Tuesday in June. No. of shares, 50,000. No. of dividend, 12. Amount, \$1. Declared, August 7, 1878. Total dividends, \$600,000. Bullion yield, \$1,278,831.48. Listed on San Francisco Stock and Exchange Board.

This property includes what was formerly known as the Bunker Hill and Bullion claims, both early locations. It was purchased two years ago by Seth and Daniel Cook and John F. Boyd, for the sum of \$67,500. These gentlemen associated themselves with several other prominent mining men and capitalists of San Francisco, and had the property incorporated under its present name, they retaining, as they still do, a controlling interest. Ore extraction, which had before been in progress, was continued by the new company, some 10,000 tons having been taken out by the 1st of April, 1877. This ore was crushed at the Syndicate mill, the company having meantime taken steps for putting up a 20-stamp mill of their own, which was completed and set to work the following Summer. As the ore is much decomposed, this mill reduces from 50 to 75 tons every 24 hours. As a means for transporting ore from the mine to the mill readily at all seasons, the snow falling here pretty deep in the Winter, an elevated wire-cable tramway has been erected between these two points, which has capacity to bring down ore steadily, cheaply and in large quantity. From the ore worked at the Syndicate Mill the company realized in one year sufficient net profits to pay for the mine, build their mill and tramway, and declare a dividend of \$1 per share, leaving them still a surplus of \$40,000 for the purchase of supplies. Dividends at this rate have been kept up monthly ever since, and it is estimated that there is enough ore in sight to enable them to continue the same for two years more at least. The product of bullion turned out at the Syndicate Mill, from April 18th to December 3, 1877, amounted to \$428,000. That turned out at the Standard Mill, from July 20,

1877, when it commenced running, to date (October 1, 1878), amounts to \$1,000,000. This is a tractable gold-bearing ore, easily mined and crushed, and capable of being worked up to 97 per cent. by common pan process. The mine is at the present time being opened and worked through an incline shaft on the line of the lode, this shaft being now about 835 feet in depth. The dip of the lode is to the west, at an angle of about 78 degrees. Drifts have been run on the various levels both north and south, some of them being nearly 800 feet in length. The vein, down to the 450-foot level, has been thoroughly explored, exposing a continuous body of ore over 900 feet long. The incline below this level is also in ore of the usual high grade. The ore in sight, estimated to be worth at least \$60 per ton, amounts to over 50,000 tons. The vein varies from 3 to 15 feet in width, its average width being from 5 to 6 feet. Both walls are regular and show good casings. Everything between the walls is put through the batteries, but owing to the presence of a fine clay in the ore the latter has to be managed with care, a troublesome slum being created. But few chemicals are used here, and the bars of quicksilver is small. The average value of the Standard ore is \$62 per ton. Cost of mining and milling, \$15 per ton. The bullion is worth from \$10 to \$12 per ounce.

In December last the company commenced sinking a vertical three-compartment shaft, at a point 650 feet west of the old incline. This shaft is now down 700 feet, and is being sunk with all possible expedition. Its position is so central to the entire system of lodes that here cross the country, that a very general interest will be felt in its progress and resultant developments. It has already cut a number of ledges, at depths ranging from 112 to 400 feet, all having a slight westerly dip. They have not, as yet, been troubled with much water, either in the new or the old shaft, the entire district being, in fact, remarkable for its dryness.

The Standard Company have a Government title for their mine, the patent covering a tract 1,500 feet long by from 800 to 1,200 feet wide. Since passing under its present ownership, this property presents as good a record as any ever opened on this coast, the remarkable success that has attended operations here, having been due not more to the fine body of gold-bearing ore developed, than to the energetic, but careful and economical management.

The Standard may be regarded as the representative mine of the Bodie district, and is an index to the results that may confidently be expected along the metalliferous belt which passes through this section of country. This mineral belt is described by Prof. Silliman, as being two and a half miles long north and south, by three-fourths of a mile wide; and that there is in the center of the series of veins, one leading, or mother vein, to which all the others gathered at various depths. The district is rapidly coming into prominence and favor, and now ranks second only to the Comstock, on the Pacific coast.

STEEP HOLLOW GOLD MINING COMPANY.

YOU BET, NEVADA COUNTY, CALIFORNIA.

Office, Room 15, 310 Pine Street. Wm. P. Dewey, president; J. W. Pew, secretary; Wm. P. Dewey, W. B. Murray, Andrew Baird, Jos. Clark, H. A. Fox, trustees. Annual meeting, third Wednesday in September. No. of shares, 10,000. No. of acres, 125.

The Steep Hollow Gold Mining Company, situated on Liberty Hill, in Nevada County, consists of 126 acres of ground on the old "Blue Lead," which extends from Sierra County in the north through Nevada County, and, crossing Bear River, runs through Dutch Flat, Gold Run, etc., in Placer County, and is widely known as one of the richest channels in California. The company's claim runs about 1,700 feet along the course of the channel, with the full width of the same—the rim-rock on both sides being within its boundaries.

The celebrated Swamp Angel claim, on Lowell Hill, about half a mile above this property, and the Little York and Liberty Hill Companies, just below it, and both paying richly, are the best and surest guarantees that the portion of the channel owned by this company will pay handsomely. The tunnel which is being run is one of the largest and best in the county, and, from its favorable position at the lower end of the claim, will serve to work the whole of the property. Plenty of fall for sluices and tailings, water and timber are on the claim, and being within a few miles of Dutch Flat, all supplies can be readily obtained at lowest prices. This claim is what is known as a "drift claim," and the gravel can be extracted at a cost not exceeding fifty cents per car-load, while the receipts will run from one dollar to four dollars per car-load—the gold found in this channel being coarse, and known among miners as "melon-seed" gold.

STEPTOE CONSOLIDATED MINING COMPANY.

WARD, NEVADA.

Office, Room 3, 306 Pine Street. Clinton Gurnee, president; Edward F. Stone, secretary; Robert Briggs, superintendent; C. Gurnee, R. F. Knox, J. E. Damon, J. H. H. Williams, S. N. Putnam, trustees. Annual meeting, last Thursday in August. No. of shares, 100,000. Number of feet, 10,500 (seven mines, 1,500 feet each). No. of assessment, 1. Amount, 10c. per share. Levied, December 14, 1877. Total assessment, \$10,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

This company have seven mines, each of them more or less prospected by shaft or tunnels. The Ready Cash has an immense body of carbonate ore perforated by shaft and tunnel. Several thousand tons from this deposit were mined and sold for furnace use. The tunnel in its face shows strong indications of the presence of high-grade milling ore. The assays of the float ore found on this location justify the most sanguine expectations. The Ready Cash has all the characteristics of the Paymaster mine, belonging to the Martin White company, at the same stage of development.

The Light mine adjoins the Paymaster, and has rich ore in its incline, found embedded in the soft manganese seam and clay selvage lying in the line of contact between the limestone and porphyry. This vein is supposed by many miners to be identical with that struck in the Pleiades mine, adjoining the Light. It is also asserted that the Paymaster ore formation runs into the Light ground. The Con. and Emily claims have shafts in which rich mineral appears in bunches, but sufficient depth has not yet been attained to warrant drifting in search of ore bodies. The Fourth of July, Old Ned and Profit mines are located on the line of the strike of the Paymaster and other mines forming the series of the district. The ore found on them seems to have come to the surface in chimneys through a limestone capping. The work done on them presents a fine showing, and there is no reason to doubt finding a fine body of ore by sinking the shafts to greater depth.

STOCK BROKER SILVER MINING COMPANY.

SHOSHONE, WHITE PINE, NEVADA.

Office, 106 Leidesdorff Street. D. L. McDonald, president; O. H. Bogart, secretary; C. S. Benham, superintendent; D. L. McDonald, A. J. Shrader, J. M. Gitchell, O. H. Bogart, J. H. Raymond, trustees. Annual meeting, fourth Monday in October. No. of shares, 100,000. No. of feet, 6,000. No. of assessment, 1. Levied, March 28th, 1876. Total assessment, \$10,000.

SUCCOR MILL AND MINING COMPANY.

GOLD HILL, NEVADA.

Office, 302 Montgomery Street. C. Jones, president; W. H. Watson, secretary; S. B. Segur, superintendent; C. Jones, E. J. Moore, H. Zadig, G. Sutro, trustees. Annual meeting, last Monday in September. No. of shares, 63,400. No. of feet, 5,400. Shares per foot, 12 $\frac{1}{2}$. No. of assessment, 19. Amount, 50c. Levied, Aug. 12th, 1878. Total assessments, \$586,534. No. of dividend, 2. Amount, \$22,800. Declared, October 1st, 1871. Total dividends, \$22,800. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The ground of this company, one of the earliest locations in the neighborhood, consists of a quadrilateral strip, running nearly east and west across Gold Cañon, between the Justice and the Silver Hill claims. The tract is 2,400 feet in length, and covers several ledges besides the principal one known to traverse this section of the Comstock belt, and which is clearly traceable to this point from the outcroppings of the Imperial works. In the early days, the owners of this ground drove in a tunnel, the first run in this part of the district, and stoped out considerable ore, which was milled with profit, that first reduced having been worked with anastras. Afterwards, a mill was erected and kept in successful operation for some time. Still later, steam hoisting works were put up, through the aid of which the ground has been prospected by vertical shaft, levels, crosscuts, winzes, etc., to a depth of about 1,100 feet. Almost from the surface down, vein matter carrying some ore has been encountered, the indications on the lower levels being at present especially encouraging. The work of exploration here has been well planned, and is being carried on with system and thoroughness.

SUMMIT MINING COMPANY.

MINERAL POINT.

Office, Room 6, 318 Pine Street. E. P. Sanford, president; J. W. Clark, secretary; E. P. Sanford, C. Lehmann, J. F. Storer, A. Martin, G. H. Waggoner, trustees. Annual meeting, second Monday in January. No. of shares, 100,000. No. of acres, 320. No. of assessment, 5. Amount, 5c. per share. Levied, Sept. 10, 1878. Total assessments, \$20,000.

The Summit Mining Company own a gravel claim in the Mineral Point Mining District, Plumas County, California, located upon the old river channel, which has in many places proved so valuable mining ground, in Plumas, and other counties. A tunnel has been run about 1,000 feet. Immediate measures are to be taken for prosecuting the work, so as to ascertain the value of the gravel.

SWANSEA MINING COMPANY.

INYO COUNTY, CALIFORNIA.

Office, 315 California Street. F. N. Delaney, secretary; George S. Mann, M. A. Wheeler, Fred. Lux, William H. Garner, B. H. Brooks, trustees. Capital stock, \$5,000,000. No. of shares, 100,000.

The mines of this company are situated at Cerro Gordo. The company have about 6,000 feet of ground, covering the richest and most valuable of the district. Several shafts have been sunk to a depth of 100 feet, and most of them in first-class ore. The works are situated at Swansea, at the foot of the mountains, and on the east side of Owen's Lake, and consist of two Castilian furnaces. The company have recently put in new pans. The developments and operations of the company have been done by the sale of Treasury stock. There has never been any assessments.

SYNDICATE MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 419 California Street. Chas. H. Fish, president; Jacob Stadtfelt, Jr., secretary; Warren Rose, superintendent; George W. Hopkins, Thomas G. Taylor, H. M. Yerrington, Robert N. Graves, Jacob Stadtfelt, Jr., trustees. Annual meeting, third Thursday in October. No. of shares, 50,000.

This property, including the Syndicate mill, formerly belonged to a New York company, with S. L. M. Barlow, Prof. Benj. Silliman, and others, as directors, who being unsuccessful, abandoned it, and permitted it to be sold by the sheriff for debts and taxes, and was thus

acquired by the present owners. The Eastern parties have since commenced suit to recover the property, but as they did no work upon the claims for several years, nor claimed title thereto, until the new owners had proved it valuable, there is no chance for them to recover the property. The present owners have run a long tunnel and various crosscuts at great expense, thereby developing valuable ledges. They also repaired and enlarged the mill, and employed it in custom work, having crushed several thousand tons for the Standard, and is at present crushing for the Bodie mine.

TALLAHASSEE MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, 88 Nevada Block. W. W. Foote, president; Daniel Buck, secretary; W. W. Foote, S. Heydenfeldt, W. M. Stewart, M. Kirkpatrick, A. W. Rose, L. Leavitt, trustees. Annual meeting, last Thursday in November. No. of shares, 50,000. No. of feet, 234x1,000.

TELFAIR MINING COMPANY.

GLOBE DISTRICT, ARIZONA.

Office, Room 12, 511 California Street. T. F. Palmer, president; J. Pentecost, secretary; F. H. Wilder, superintendent; F. F. Palmer, Ira G. Hoyt, James Eva, J. Pentecost, Donville Libby, trustees. Annual meeting, second Tuesday in February. Number of shares, 100,000. No. of feet, 1,500.

TEXADA MARBLE AND COMMERCIAL COMPANY.

TEXADA ISLAND, BRITISH COLUMBIA.

Office, 80 Nevada Block. Gregory P. Harte, president; Daniel Buck, secretary; H. Evelyn Sturt, superintendent; G. P. Harte, Jno. J. Palmer, Jno. H. Boden, R. H. Chinn, Daniel Buck, trustees. Annual meeting, last Friday in July. Number of shares, 100. Extent of property, 160 acres.

TIGER MINING COMPANY.

BRADSHAW DISTRICT, ARIZONA.

Office, San Francisco Stock Exchange. Joseph Clark, president; W. H. Lent, secretary; J. H. Helm, superintendent; Jos. Clark, Geo. B. McAneny, Levi Bashford, A. D. Allen, E. O. F. Hastings, trustees. Annual meeting, first Monday in May. No. of shares, 100,000. No. of feet, 12,000. No. of assessment, 1. Amount, 30c. per share. Levied, July 16, 1878. Total assessment, \$30,000. Listed on San Francisco Stock and Exchange Board.

This is an old claim, that has for many years been known to the mining world. For a long time it produced liberally in bullion, and closed for awhile because of an excessive flow of water. A thorough examination of the property resulted in a favorable report, and the present management have started about development in earnest. There is no doubt in the minds of the present owners that in the near future they will be rewarded for their enterprise.

TIOGA CONSOLIDATED MINING COMPANY.

BODIE DISTRICT.

Office, Rooms 2 and 3, San Francisco Stock Exchange. A. J. Ralston, president; W. H. Lent, secretary; W. Rose, superintendent; A. J. Ralston, John F. Boyd, R. N. Graves, W. M. Stewart, J. McAneny, trustees. Annual meeting, second Monday in April. No. of shares, 100,000. No. of assessment, 2. Total assessments, \$20,000. Listed on San Francisco Stock and Exchange Board.

This mine is one of the features of Bodie District. It is situated among some of the best locations, and adjoins the Standard on the north. A shaft has been sunk to the depth of 200 feet, and discloses three veins, all gold-bearing. The indications partake of the same properties as the Standard, and there is no doubt, should present indications be verified, that the Tioga will prove one of the most prosperous mines in the district.

TIP TOP MINING COMPANY.

BLACK CANON, PRESCOTT, ARIZONA TERRITORY.

Office, 327 Pine Street. Jos. Clark, president; D. F. Verdental, secretary; Geo. E. Webber, superintendent; Jos. Clark, Wm. M. Lent, J. B. Haggin, Alex. Forbes, A. E. Heald, trustees. No. of shares, 100,000. No. of assessment, 3. Amount, 50c. per share. Levied, July 15, 1878. Total assessments, \$120,000. Listed on San Francisco Stock and Exchange Board.

This company was incorporated September 20th, 1877, and shortly after erected at the mine a ten-stamp mill at considerable expense. The output of silver bullion from February 23d to August 15th, 1878, was a gross approximately of \$154,400, with an interruption of six weeks, during which the mill was stopped for want of water. No further stoppages are anticipated from this cause, water in ample supply having been provided for; and the mine promises to yield ore enough to keep the mill running indefinitely. The expense of running Arizona mines, on account of the distance from the base of supplies, is considerable, and Tip Top is no exception to the rule. The managers are confident, however, of the future success of the enterprise.

TOLO MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 16, 408 California Street. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, second Thursday in August. No. of shares, 100,000. No. of feet, 603. No. of assessment, 1. Amount, 15c. per share. Levied, November 12, 1877. Total assessments, \$15,000.

TOQUERVILLE SILVER MINING COMPANY.

HARRISBURG, WASHINGTON COUNTY, UTAH.

Office, 310 Pine Street. Louis Janin, president; J. W. Pew, secretary; G. F. Williams, superintendent; Louis Janin, P. S. Van Rensselaer, E. N. Hooper, H. P. Livermore, W. L. Oliver, trustees. Annual meeting, second Wednesday in November. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40. No. of assessment, 1. Amount, 10c. per share. Levied, June 23, 1878. Total assessments, \$6,000. Bullion yield, \$9,500.

A striking peculiarity of the Harrisburg Mining District is the occurrence of the ore bodies in two separate "reefs," one on either side of an anticlinal valley. On the west is the "White Reef," on which are the claims of the Leeds and Harrisburg Mining Companies; and on the east is the "East Reef," on which are the claims of the Toquerville Company, and others equally well known. The richest ore of the district has come from this "East Reef." Some shipments from the Toquerville mine have netted over \$1,000 to the ton of ore. The quality of the ore is the same as that on the White Reef, namely, chloride of silver and copper-silver glance. The ore is easily reduced in pans, and yields a high percentage of its contents.

Since the present company has assumed control of the Toquerville mine, it has been entirely self-sustaining, and the receipts continue to exceed the disbursements. The mine is free of indebtedness, and the balance in the treasury is constantly increasing. With ore in sight of a high grade, and with an economical management, there is a strong assurance felt that the Toquerville will soon rank among the best mines of the district.

TORONTO MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 414 California Street. T. W. Colburn, president; Wm. P. Gummer, secretary; N. D. Thayer, Isaac R. Hall, J. P. Gilman, J. W. Brown, T. W. Colburn, directors. Annual meeting, in November. No. of shares, 60,000. No. of feet, 1,500. Shares per foot, 40.

The Toronto is an old claim, which was originally located in 1861, but, like most other Bodie claims, was abandoned until recent developments again turned capital toward Bodie. The mine is on the Burgess ledge, southwest of Bodie, and is adjacent to the Spaulding mine, which has recently developed some very rich rock.

TROJAN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 21, 328 Montgomery Street. John Turner, president; David Wilder, secretary; Albert Lackey, superintendent; John Turner, P. Connolly, Sidney M. Smith, J. H. Jessen, John W. Rowe, trustees. Annual meeting, third Friday in February. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 8. Amount, \$25,000. Levied, June 4, 1878. Total assessments, \$215,000. Bullion yield (to June 30, '78), \$71,200.67. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange, and California Stock Exchange Board.

The Trojan is located west of the Overman, and south of the Belcher mine. The hoisting works are ample for all purposes, conveniently arranged, and well constructed. The main hoisting works are 31x47 feet; blacksmith shop, 16x30; boiler-house, 16x30; and wood-house. From the hoisting works a track leads to two ore houses; one, of a capacity of 300 tons, over the track of the Virginia and Truckee Railroad; the other, of a capacity of 200 tons, facing the wagon road. The machinery consists of a 40 horse-power engine (12-inch cylinders, 24-inch stroke), pump for supplying the boiler and other uses; two reels, main shafting, etc., with ample power to sink to a depth of 800 to 1,000 feet. The reels are supplied with two cables of 800 feet each, 4x $\frac{1}{2}$ -inch, and a good gallow's frame. The boiler is 16 feet in length, 54 inches diameter, containing 42 3-inch tubes. The shaft is in two compartments, each 4x4 $\frac{1}{2}$ feet, well timbered, with 12x12 timber, and 400 feet in depth. Work is being done from second, third, and fourth stations, drifts north and south, from 100 to 300 feet, having been run from each station, the entire length of drifts being in the vein, with frequent crosscuts. All the different levels are connected by winzes, giving a good circulation of air throughout the mine. At present (August, 1878), good ore is being taken from all three stations, and shipped to the Vivian Mill, on the Carson river. There is a large amount of ground to prospect on the lower levels, and the vein is of a very promising character, and from present indications, will give a large yield of ore. Since March 1, 1878, the shaft has been sunk from the third to the fourth station, and there will be no need to sink deeper for some time to come. There are two pumps Cope & Maxwell, which handle the water with ease.

TWIN PEAKS MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 414 California Street. Isaac R. Hall, president; William P. Gummer, secretary; I. R. Hall, J. W. Stetson, J. W. Brown, G. J. Binder, J. S. Gregory, trustees. Annual meeting, in January. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$. No. of assessment, 1. Amount, 15c. Levied, February 26th, 1878. Total assessment, \$15,000.

The Twin Peaks is located on the Crevice ledge, which runs through by the Imperial works and along the line of the big crevice east of Gold Hill, opened by an earthquake four years ago last Christmas, and which crops to the surface along south, and is being opened up by the Alta, Succor, etc. The developments made are of the most encouraging character. The old one-compartment shaft cut the ledge 40 feet from the surface, and at 60 feet brought to light some as fine ore as was ever found on the Comstock at that depth. The ore has the open, porous appearance which characterizes that taken from large ore bodies, and is composed of sulphurets

and chlorides of unusual richness. It having been deemed advisable to cut the ledge at greater depth, the work on this shaft has been stopped, and a new three-compartment shaft, started a few months ago, has attained about 100 feet in depth, and will be pushed forward with dispatch.

TUMACACORI MINING COMPANY.

ARIVACA AND ORO BLANCO, PIMA COUNTY, ARIZONA.

George W. Deitzler, president; William A. Andoe, secretary; George W. Deitzler, James P. Preston, William O. Gould, James H. Van Vleet, William A. Andoe, trustees. No. of shares, 100,000.

TYBO CONSOLIDATED MINING COMPANY.

TYBO, NYE COUNTY, NEVADA.

Office, Room 7, Safe Deposit Building. Arthur K. Hawkins, president; William W. Parrish, secretary; A. K. Hawkins, superintendent; Vincent Neall, Theodore H. Hittell, Morton C. Fisher, Camilo Martin, Arthur K. Hawkins, trustees. Annual meeting, first Wednesday in June. No. of shares, 50,000. Bullion yield, \$2,500,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Tybo Con. Mining Company now comprises the following claims: The La Fayette, 1,200 feet; the Two G., 1,125 feet; the Casket, 650 feet; the Crosby, 800 feet; the Hunki Dori, 800 feet; and the Bunker Hill, 1,500 feet. These claims have been variously prospected to the depth of 1,000 feet, and ore has been stoped out on every level. The yield averages from \$50,000 to \$100,000 per month in bullion. The company have two furnaces of a capacity of 150 tons per day, and have just completed new hoisting works and placed therein \$25,000 machinery. They employ about 250 men, and are expending monthly from \$45,000 to \$70,000 in the development of their property. At the inauguration of this enterprise the Tybo Company adopted the wise policy of securing for future use a number of metaliferous lodes, situated near each other, to the end that their reduction works might never suffer from an inadequate supply of ore, inasmuch as some one or more of these lodes, all of which have been extensively prospected, would be likely to be in bonanza, furnishing the requisite working stock, should others, for the time being, fail to do so. As yet no such emergency has occurred, the Two G. and the La Fayette having furnished ore enough to keep their mill in part and their furnaces wholly employed, neither of these mines having as yet been explored to any great depth, nor have they been worked in a way rapidly exhaustive of present ore reserves.

UNCLE SAM MINING COMPANY.

TOMBSTONE, ARIZONA.

Office, 320 California Street. No. of shares, 100,000. No. of feet, 1,500.

This mine, though a recent discovery, is situated in a region of country rendered classical by the early Spanish explorations made in this part of Arizona. The Tombstone District, so named because of the peculiar manner in which the rocks there project above the ground, is distant about 76 miles, in a southeasterly direction from the town of Tucson, from which place it can be reached by a good wagon road at all seasons of the year. The lode on which this mine is located is of large size and of well-defined outlines. It has a northerly and southerly strike, with an easterly inclination. The matrix is quartz well charged with silver. The ore is of high grade, much of it assaying from \$1,000 to \$2,500 per ton in silver, with about \$30 in gold, and it is probable that the entire body of ore available for reduction will yield over \$200 per ton, a number of tons sent to San Francisco having greatly exceeded this amount. It is a fine, clean ore and can be worked closely at small cost. At present the company is shipping the ore taken from the mine, but they will ultimately reduce it at works put up for the purpose on the San Pedro River, where they own a superior mill site, only four miles from the mine. Besides an abundance of water, furnished by this river, the district is well supplied with wood of different kinds, the climate here being healthful and the other natural advantages exceptionally good, wherefore, this property may justly be considered one of great prospective value.

UNION CONSOLIDATED SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, Room 4, 309 California Street. Robert Sherwood, president; J. M. Buffington, secretary; W. H. Patton, superintendent; Robert Sherwood, Geo. Wallace, Geo. R. Wells, J. W. Coleman, Cornelius O'Connor, trustees. Annual meeting, third Monday in July. No. of shares, 100,000. No. of feet, 825. No. of assessment, 11. Amount, 25c. per share. Levied, April 10, 1878. Total assessments, \$290,000. Listed on San Francisco Stock and Exchange Board.

The Union Consolidated mine has had a peculiar experience, and to-day occupies a place high in popular favor; in fact, its stock is only second on the list. After years of doubtful record, three years since it assumed a positive attitude, so far as title was concerned, and fell back upon its intrinsic merit for claims upon popular favor. A patent for 825 feet on the Comstock was secured, and active work at development began. The claim is located between the Mexican and the Sierra Nevada, and developments have shown that its richness is beyond doubt extensive. From the 1,300-ft. to the 1,600-ft. level, everything has proved satisfactory as work has progressed, and progress is being made toward a connection with the Sierra Nevada mine, as well as in the joint east crosscut on the Mexican north line. At a distance of 620 feet, the face of the north drift was in porphyry and clay. Here heat was encountered to a high degree, but the winze has been prosecuted to connect with the north drift on the 1,700-ft.

level. This winze will occupy a very important position, and has enabled the prospecting and opening up of a large portion of entirely virgin ground, and will greatly aid the ventilation of both the Mexican and Union Con. mines. The north-east drift, running to connect with the North Con. Virginia shaft, is making good headway, the face in clay and porphyry carrying occasional streaks of good quartz. The latest reports from the mine show satisfactory results, and the management is determined to spare no efforts to place the mine among the most renowned of the Comstock properties. If the possession of a good mine, an abundance of capital, and a determination to produce a complete development, are a guarantee for success, there can be no doubt as to the future of the Union Consolidated Company.

UNION CONSOLIDATED MINING COMPANY OF CERRO GORDO.

INTO COUNTY, CALIFORNIA.

Office, 402 Front Street. Egbert Judson, president; T. M. Converse, secretary; Mortimer W. Belshaw, superintendent; E. Judson, B. S. Brooks, M. W. Belshaw, I. L. Jones, M. Allison Wheeler, trustees. Annual meeting, second Wednesday in January. No. of shares, 100,000. No. of assessment, 1. Amount, \$1.25. Levied, July 1, 1878. Total assessments, \$125,000.

UNION FLAG SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 17, 419 California Street. A. H. Yeazell, president; W. H. Allen, secretary; A. H. Yeazell, Chas. H. Aitken, N. Gimboni, John Bayle, H. Bredhoff, trustees. Annual meeting, February 13th. No. of shares, 100,000. No. of assessment, 1. Amount, 10 cents. Listed on California Stock Exchange Board.

UNION WEST MINING COMPANY.

PIONEER, ARIZONA.

Office, 320 California Street. Amos Roberts, president; Edwin B. Boothe, secretary; M. A. Baldwin, superintendent; Amos Roberts, Wm. H. Boothe, L. T. Carr, E. Wolfskell, B. A. Barney, trustees. Annual meeting, first Wednesday in June. No. of shares, 100,000. No. of feet, 1,500.

This claim, which is situated about half a mile northwest of the Silver King mine, ranks among the early locations made in the Pioneer District. The company is a San Francisco incorporation, and the property is being opened in fine style. The old shaft, now 60 feet deep, has been retimbered and is in good order. This shaft is in ore of a mixed character, some being of high and some of low grade, its entire length. The claim comprises 1,500 feet on the ledge. Some very rich antimonial silver ore has been taken out here, portions of it assaying as high as \$2,800 per ton. The great body of the workable ore will yield at the rate of \$300 per ton, the very lowest grade yielding about \$40. A few tons of ore have been extracted of extreme richness, besides some 20 tons of second-class, worth about \$100 per ton. The ledge on the surface is from 3 to 4 feet thick and much broken up, but widens out and becomes more compact below. Work here is in progress and will go on without intermission.

UNIVERSITY GOLD MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 13, Safe Deposit Building. R. G. Brown, president; William Letts Oliver, secretary; Lee H. Newton, superintendent; N. K. Masten, G. W. Beaver, Dwight Crittenden, H. M. Yerrington, R. G. Brown, trustees. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

This mine is situated on the northwesterly slope of Queen Bee Hill, adjoining the Old Dan and Booker mines. A vertical shaft has been sunk on the ground to a depth of 100 feet. At a point half way down this shaft a drift was run a distance of 40 feet on the ledge, here nearly four feet wide and composed wholly of good ore. This ore, which was formerly worked quite extensively, yielded between \$30 and \$40 per ton, being equal to any ever found in the district at no greater depth. At a depth of 100 feet further drifting will be done, the shaft being meantime continued downward. Very soon another shaft will be started 300 feet south of the present one. These shafts will be connected below, insuring good ventilation and establishing considerable ore reserves in the mine. No trouble will be experienced here from water, this mine being drained by those lying further down the hill. The company have set aside 15,000 shares of this stock, to be disposed of for raising a working capital, and which, as it well deserves to do, is meeting with ready purchasers.

UTICA CONSOLIDATED MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel; A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, W. B. Thornburgh, R. N. Graves, John Skae, W. E. Dean, trustees. Annual meeting, second Wednesday in January. No. of shares, 45,000. No. of feet, 15,000. Shares per foot, 30.

The Utica Con. lies next north of the Orleans or the Old Van Bokkelen and Thornburgh, on a line with the Sutro, and separated therefrom by the Orleans. It is a west ledge location.

UTAH SILVER MINING COMPANY.

VIRGINIA CITY, NEVADA.

Office, Room 25, Nevada Block. R. H. Follis, president; Geo. C. Pratt, secretary; W. B. Sheppard, superintendent; John Skae, Geo. Wallace, R. H. Follis, trustees. Annual meeting, second Tuesday in July. No. of shares, 20,000. No. of feet, 1,000. No. of assessment, 21. Amount, \$2. Levied, August 15, 1878. Total assessments, \$620,000. Listed on San Francisco Stock and Exchange Board.

The Utah lies north of the Sierra Nevada. It was located in 1859, but the company owning it re-incorporated in 1871, since which date the work of development has been steadily

prosecuted. The old company had sunk a shaft on the croppings of the ledge to a depth of 280 feet, from which they obtained some good ore. The present company, better informed by experience, in 1871, commenced sinking a new shaft 200 feet further east than the old one. This new shaft, at latest date (21st September, 1878), had reached a depth of nearly 1,500 feet, and is being rapidly pushed to reach the lowest level of the bonanza mines. Several lateral drifts have been made. The northeast drift, on the 1,150 feet level, had reached a distance of 361 feet on 31st of August, 1878. On the 1,350-foot level, the south lateral drift connects with the works in the Sierra Nevada, after running 885 feet, and secures good ventilation on the lower levels. On the 400-foot level a crosscut on the lode showed it to be 165 feet wide, and of the same character of ore as the other mines on the Comstock lode. At a depth of 650 feet the lode was again crosscut, with similar results to that above. The works and machinery of the company are nearly all new and of the most approved description, and are abundantly sufficient to develop the mine to a depth of 2,500 feet.

VANCOUVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 8, Cosmopolitan Hotel. J. C. L. Wadsworth, president; O. C. Miller, secretary; J. C. L. Wadsworth, O. C. Miller, I. Gutte, P. S. Weaver, E. E. Smith, trustees. Annual meeting, second Wednesday in August. No. of shares, 100,000. No. of feet, 571. No. of assessment, 1. Amount, 10c. Levied, August 8th, 1877. Total assessment, \$10,000.

This company is one of the series organized on the original Joe Scates Consolidated ground, and the location is directly east of and adjoining the Savage mine. The Sutro tunnel passes through the claim, having cut a ledge 60 feet wide in the company's ground, at a depth of about 1,650 feet. The mine will be developed by means of this tunnel.

VERMONT CONSOLIDATED MINING COMPANY.

VIRGINIA, STOREY COUNTY NEVADA.

Office, 306 Pine Street. E. R. Warsaw, president; H. H. Johnston, vice-president; E. F. Stone, secretary; Henry Snell, superintendent; E. R. Warsaw, J. E. Shawhan, H. H. Johnston, I. P. Rankin, S. D. Woods, trustees. No. of shares, 110,000. No. of feet, 1,300. Shares per foot, 84 8-13. Annual meeting, first Thursday in August.

The ground of this company, which was incorporated August 1, 1876, lies east of the Ophir and Mexican mines. The oldest of the claims now belonging to the company is the Vermont, recorded on the 16th day of December, 1859, in Book A of Virginia Records. Several locations under this organization have been united, and the title thereto secured by United States patent. The company has hoisting works complete for sinking the shaft, already down 200 feet, to a depth of 1,000 feet or more. This shaft has been in vein matter nearly all the way from the surface down. The formations, lay of the grounds, croppings northeast of the shaft, and all surroundings, justify the expectation of finding a chimney of quartz nearer the surface than has yet been found in any of the adjoining mines. The Ophir ore-body, developed on the 2,000-foot level of that mine, is known to lie immediately adjoining, if not chiefly, in the Vermont on the west, and the more recent "find" in the Union and Sierra Nevada is almost, if not quite, as near the Vermont property on the north. California has an ore-body adjoining on the southeast. In view of the fact, that three ore bodies are being uncovered adjoining the Vermont, on the south, west and north respectively, it would be strange, indeed, if the shaft of this company should fail to show ore, going down as it does in the center of such surroundings. The sinking of this shaft is at present attracting more attention than that of any other company on the Comstock, and it is believed, by almost all of the old Comstockers, that the croppings on this ground will yet prove to be the surface exposure of an immense ore chimney lying chiefly within its limits, and at present being uncovered by adjoining properties at a depth of 2,000 feet or more.

The Vermont shaft is being driven down as rapidly as possible, and so confident is the management of finding pay ore in a short time, that provision has been made for money, without calling on the shareholders by assessments for the current expenses of the mine. With the general improvement in the mining share market, occasioned by developments immediately contiguous to the Vermont, this property, embracing 1,300 feet, running southwest and northeast, by 600 feet east and west, must inevitably attract purchasers, offering, as it does, the chance of a fortune, through an investment of only a few hundred dollars, the stock of the company now selling in the open market at about \$5 per share. But for the general depression prevailing almost everywhere in business channels for several years, and especially on the Comstock for two years past, this property would have been developed long since, for at no time have the chief owners thereof doubted the certainty of developing here an immense ore body, whenever the company should determine to explore their ground. Having at last entered vigorously on this work, great activity, with advancing prices in this stock, may be counted on in the early future, the appreciation that has already taken place being but the prelude to that which may be expected to follow.

VENTURE MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 26, 419 California Street. W. H. Reed, president; Jacob Stadfeld, Jr., secretary; J. C. Lennon, superintendent; W. H. Reed, W. C. Hendree, N. F. Bean, Robt. Sherwood, John McNally, trustees. No. of shares, 100,000.

VICTORIA CONSOLIDATED GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, third Monday in December. No. of shares, 100,000. No. of feet, 650. Shares per foot, 154.

The Victoria Consolidated holds the north end of the Red and White Cross lode, and lies east of the North Consolidated Virginia, and north of the Plutus,

VICTORIA AND IMPERIAL TUNNEL AND MINING COMPANY.

LITTLE COTTONWOOD, UTAH.

Office, 302 Montgomery Street. C. Jones, president; W. H. Watson, secretary; S. W. Blakely, superintendent; M. Saulsbury, C. P. Robinson, S. W. Blakely, W. H. Watson, C. Jones, trustees. Annual meeting, second Thursday in September. No. of shares, 60,000. No. of feet, 500. Shares per foot, 120. No. of dividend, 1.

VICTOR MILL AND MINING COMPANY.

COLUMBUS, ESMERALDA COUNTY, NEVADA.

Office, San Francisco Stock Exchange. H. L. Coye, president; Chs. Land, vice-president; Victor Fernbach, secretary; A. J. Rhodes, superintendent; H. L. Coye, Chs. Land, R. H. Lloyd, Samuel Grosh, A. J. Rhodes, trustees. Annual meeting, third Tuesday in January. No. of shares, 50,000. No. of assessment, 1. Amount, 20c. Levied, March 29, 1877. Total assessment, \$10,000.

The Victor is composed of three separate locations—the Victor, 1,400 feet, the Magnet, 1,000 feet, and the Chloride, 1,000 feet, running in a northeasterly and southwesterly direction, dipping northeast, and about one-third of a mile from the Northern Belle, on the same ledge. The mine is opened by a tunnel 700 feet, in which it cut a ledge twenty feet wide. Drifts have been run east and west about 250 feet, and all the way in ore. Raise in east drift 190 feet in good milling ore. Winze in east drift 150 feet deep, in good ore. The ore assays from \$50 to \$1,175 per ton, averaging about \$65 per ton. There are over 4,000 tons of milling ore on the dump.

VIVIAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 6, 240 Montgomery Street. Henry S. Fitch, president; Thad. S. Fitch, secretary; Henry S. Fitch, Silas Selleck, Henry F. Morris, E. L. B. Brooks, Thad. S. Fitch, trustees. Annual meeting, third Monday in August. No. of shares, 100,000. Shares per foot, 135. No. of feet, 740.

The Vivian Consolidated is the second claim on the Vivian and San Fernando lode, lying to the south and east of the Florida. The location covers two ledges about twenty feet apart, which, while similar in their ore-bearing properties, are distinct in other and distinguishing characteristics. These ledges are, respectively, 300 and 200 feet in width, and yield liberal assays, both in their croppings and where cut by the tunnel run into the ground in early years. A large three-compartment, combination working shaft is being sunk on the line dividing this claim from that of the San Fernando company. The expense of development is equally apportioned between the two companies.

VIVIAN MINING COMPANY.

DEVIL'S GATE, NEVADA.

Office, Room 8, Cosmopolitan Hotel. A. K. P. Harmon, president; W. E. Dean, secretary; A. K. P. Harmon, J. D. Fry, R. F. Morrow, A. M. Edgington, D. L. Bliss, trustees. Annual meeting, second Wednesday in December. No. of shares, 50,000. No. of feet, 1,600. Shares per foot, 31½.

WARD GOLD AND SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 26, 419 California Street. Thomas Cole, president; Jacob Studtfield, Jr., secretary; F. M. Thayer, superintendent; J. M. Livingston, Thomas Cole, C. W. Kellogg, W. C. Parker, J. C. Palmer, trustees. Annual meeting, fourth Thursday in March. No. of shares, 110,000. No. of assessment, 2. Amount, 30c. per share. Levied, September 13, 1878. Total assessment, \$66,000. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

The Ward is located south of and adjoining the Julia and east of the Bullion. That it is on the same ledge as the Julia has been demonstrated by a drift into its ground from the 1,600-foot station of that mine, which is near the line and which has followed a broad, well-defined ledge of quartz the entire distance. The drift run south on the 1,800-foot level of the Julia also proves conclusively this fact. A four-compartment well-timbered vertical shaft has been put down on this ground to a depth of 1,400 feet, the work being still in active progress. In view of the excellent prospect of this mine the company have determined upon the erection of new and first-class hoisting works, to which end an early but by no means onerous assessment has become necessary. Only one call of this kind has as yet been made on the Ward stockholders, and that only for the small amount of 30 cents per share, a fact that sufficiently endorses the economy of the management. As the ore body alluded to in the Julia mine is situated near the north boundary of the Ward ground there can be little doubt but it will pass in great strength into the latter, the same favorable indications having been met with here that abounded in the Julia.

WATT BLUE GRAVEL MINING COMPANY.

NEVADA COUNTY, CALIFORNIA.

Office, 414 California Street. Geo. W. Beaver, president; R. Wegener, secretary; William Watt, superintendent; Geo. W. Beaver, Robt. Watt, F. Berten, A. B. Dibble, William Watt, trustees. Annual meeting, third Monday in February. No. of shares, 100,000. No. of acres, 900. No. of assessments, 3. Amount, 10c. per share. Levied, Sept. 6, 1878. Total assessments, \$35,000.

WEBFOOT SILVER MINING COMPANY.

PIONEER DISTRICT, PINAL COUNTY, ARIZONA.

Office, Room 47, 330 Pine Street. John F. Snow, president; W. Meeks, secretary; John Dore, superintendent. John F. Snow, H. Rosekrans, A. J. Miller, W. Meeks, Jno. Dore, trustees. Annual meeting, third Wednesday in December. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

The Webfoot is situated in Pioneer Mining District, Pinal County, Arizona, in the foot-hills of the western slope of the Pinal range of mountains. The width of the vein is from eight to ten feet on the surface, and traceable the whole length of the claim, with hanging walls of granite and porphyry, and foot-walls of quartzite, with some traces of lime and clay seams. Two shafts have been sunk on the ledge 18x35 feet, and a tunnel 4x6 feet has been run in 80 feet, from which fine carbonates of silver has been taken, from which 10 assays averaged \$319.50 in silver. It is not the intention of the company to levy any assessments, and have therefore set aside 20,000 shares for expenses and working the mine. There is at present about 75 tons of ore on the dump, that will nett \$6,000, which is about the amount already expended on the mine, and which is now free from debt. The company are now engaged in taking the ore to one of the mills about a mile from the mine, where it can be crushed and concentrated for \$20 per ton.

WELLS FARGO MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 309 California Street. D. M. Seaton, president; W. M. Hellman, secretary; D. M. Seaton, A. J. Adams, Geo. W. Dixon, Geo. McConnell, Geo. R. Perrin, trustees. Annual meeting, last Thursday in January. No. of shares, 108,000. No. of feet, 1,500. No. of assessment, 11. Amount, 50c. per share. Levied, September 11, 1878. Total assessments, \$226,800. Listed on San Francisco Stock and Exchange Board, Pacific Stock Exchange and California Stock Exchange Board.

This is one of the oldest locations in the mining section known as North Virginia. It is situated a little less than a mile in a direct line to the eastward from the original locations on the Comstock. Formations similar to those on the Comstock are plainly traced across the dividing cañon, and are found in North Virginia. The situation of the Wells Fargo is directly east of the Utah, Sierra Nevada, etc. A shaft has been sunk that cuts through a large ledge of promising vein matter, from which liberal assays have been made. Hoisting works have been erected, with machinery sufficient to conduct operations 1,200 feet down, at least.

WESTERN UNION MINING COMPANY.

DEVIL'S GATE, LYON COUNTY, NEVADA.

Office, Room 80, Nevada Block. M. E. Sperring, president; Daniel Buck, secretary; Wm. T. Robinson, superintendent; M. E. Sperring, R. H. Sinton, Holland Smith, W. T. Robinson, John O'Brien, trustees. Annual meeting, last Thursday in January. No. of shares, 60,000. No. of feet, 1,500x600.

WHITE CLOUD MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 25, Nevada Block. Charles H. Fish, president; George C. Pratt, secretary; S. W. Blasdel, superintendent; Charles H. Fish, W. H. Osgood, H. G. Blasdel, George C. Wickware, Annis Merrill, trustees. Annual meeting, second Monday in January. No. of shares, 60,000.

This mine adjoins the Red Cloud on the east. It was located January 26, 1878, and the work of prospecting has been carried on continuously ever since. It has a shaft about 50 feet deep, with several lateral drifts. The company has expended nearly \$10,000 in work and materials. It will be necessary to erect pumping machinery at once as the water already impedes operations.

WILLIAM PENN MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 20, Safe Deposit Building. Almarin B. Paul, president; J. N. White, secretary; George Langridge, superintendent; Almarin B. Paul, W. Seawell, E. Chequette, George Langridge, J. S. Adams, trustees. Annual meeting, third Wednesday in February. No. of shares, 100,000. No. of feet, three claims, 2,500 feet. Shares per foot, 40. No. of assessment, 3. Expended on mine, \$25,000. Listed on Pacific Stock Exchange and California Stock Exchange Board.

The Wm. Penn mine is located on what may be termed the lower Comstock mineral belt, being in line and near by the Alta, Sucker, Niagara and other prominent mineral deposits of the lower Comstock range. It is one of the oldest locations in the vicinity. The lode shows here an immense surface exposure, indicative of great power below, everything giving promise of a valuable mining property. This company have now a tunnel 900 feet in length, which will strike the lode somewhere near 500 feet below the croppings. The work of development is being actively prosecuted, and will so continue to be until determinate results are reached.

WOODVILLE CONSOLIDATED SILVER MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, Room 2, 419 California Street. J. P. Cavallier, president; R. E. Kelly, secretary; S. F. Curtis, superintendent; J. P. Cavallier, R. H. Lloyd, H. Borland, R. Sherwood, J. H. Dobinson, trustees. Annual meeting, first Monday in May. No. of shares, 120,000. No. of feet, 1,300. Shares per foot, 92½. No. of assessment, 6. Amount, \$30,000. Levied, January 23, 1873. Total assessments, \$630,000. Listed on San Francisco Stock and Exchange Board and Pacific Stock Exchange.

YELLOW JACKET SILVER MINING COMPANY.

GOLD HILL, NEVADA.

Office, Gold Hill, Nevada. George A. King, president; Mercer Otey, secretary; T. G. Taylor, superintendent; George A. King, James G. Fair, F. A. Frittle, George Wallace, T. G. Taylor, trustees. Annual meeting, third Monday in July. No. of shares, 120,000. No. of feet, 957. Shares per foot, 125 125-319. No. of assessment, 30. Amount, \$1 per share. Levied, Sept. 12, 1873. Total assessments, \$3,798,000. No. of dividend, 25. Amount, \$2.50 per share. Declared, August 5, 1871. Total dividends, \$2,184,000. Bullion yield, \$14,372, 172. Listed on San Francisco Stock and Exchange Board. Transfer office, Room 10, Cosmopolitan Hotel. James Newlands, transfer secretary.

The Yellow Jacket is exclusively a Nevada incorporation. The claim was the first one located in Gold Hill, and was made in the early Spring of 1859, by John Bishop and a man named Camp. Subsequently others were added, and the name of the original location given to the whole. The name Yellow Jacket was given to the first location because the locators ran across a nest of yellow jacket wasps when making it. The mine lies next north of the Kentuck, by which it is separated from the Crown Point, and south of the Challenge, which lies between it and the Imperial Consolidated. The Yellow Jacket has been a prominent bullion producer, as the amount set down in the above statement shows. Not, however, since the exhaustion of the ore body discovered between the 1,740 and the 1,940 levels, now over a year ago, has much ore been taken from the mine, the more recent efforts of the company having been directed mainly to the prosecution of that deep and thorough exploration that the mines situated on the great Washoe channel justify and require. To this end they have devoted their financial energies, having projected this work on a grand and systematic scale. In pursuance of this policy, while continuing vertical as well as lateral explorations on the vein through their old works, they have driven downward an immense working shaft, situated far to the east, and through which hoisting, pumping, and all other operations will in the near future be carried on. The principal exploratory work done here of late, may be summarized as follows:

In the old shaft a winze has been put down from the 2,200 to the 2,400-foot level, and a station opened on the latter. On 2,200 level run drift east from this winze 873 feet, to a point 2,280 feet vertically below the collar of the new shaft. Drift all in vein matter. Have also drifted north and connected with the Con. Imperial for ventilation. On the north line, this level, run crosscut east 252 feet, and west 116 feet. Both drifts nearly all in favorable quartz. Also drifted south from winze 327 feet, and made drifts west and east, all in quartz favorable to ore. On 2,000 level drifted north from south winze 323 feet, and connected with drift run by Crown Point company from their incline.

On the 1,740-foot level a dam has been built for the retention of a heavy flow of hot water, which would otherwise have to be pumped out at a considerable expense daily. Work at the old shaft has latterly been suspended, with the exception of running air compressor for north winze below 2,000 level, from which Crown Point raises waste matter, men, tools, etc., for \$1.25 per ton. From old mine two miners' inches of water come in, which is passed to the Belcher pumps at a cost of \$500 per month. All expenses at old shaft do not exceed \$6,000 per month. In all work from this shaft there have been sunk 421 feet of working winzes, and 2,500 feet of drifts run. Mine cool all through.

THE NEW SHAFT AND ITS APPURTENANCES.—Convinced of the utility of larger shafts for deep exploration, the Yellow Jacket company secured in good time a suitable site for a work of this kind, locating the same so far to the east that their lode would not be intersected until a considerable depth was attained. This shaft has been planned on a large scale, comprising the unusual number of five compartments, all of extra size, two being designed for hoisting purposes. Its four working compartments are each 5 feet by 6½, and the pump compartment 6½ by 7½. This shaft has now reached a vertical depth of about 1,800 feet, and will be pushed downward with all possible expedition. That it has been substantially timbered and otherwise protected in the most thorough manner, it is superfluous to say.

The hoisting and pumping machinery connected with this shaft are the most ponderous, powerful and perfect yet put up on the Comstock, and are not perhaps surpassed by any similar works elsewhere to be found. The receipts of the Yellow Jacket during the past year, derived, of course, mainly from assessments, have amounted to \$846,522.65, their aggregated disbursements having been the same. Among leading items of expenditure have been, for machinery, transportation, supplies, labor, etc., on account of the new shaft, \$535,749.89. For labor on the old works, \$68,765.75, have been expended; for wood, \$34,791.62; and for mine supplies, \$25,669.60, the balance of expenditure being made up of diverse minor items.

YOUNG AMERICA MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. F. F. Coffin, president; R. H. Brown, secretary; F. F. Coffin, J. W. Hussey, Jacob Schleicher, P. Kitz, Wm. A. Weed, trustees. Annual meeting, fourth Tuesday in June. No.

of shares, 60,000. No. of feet, 1,000. Shares per foot, 60. No. of assessment, 10. Amount, 20 cents. Levied, June 27, 1878. Total assessments, \$94,500. Bullion yield, \$9,463.09. Listed on San Francisco Stock and Exchange Board.

YOUNG AMERICA SOUTH MINING COMPANY.

TUSCARORA, ELKO COUNTY, NEVADA.

Office, Room 20, San Francisco Stock Exchange. J. W. Hussey, president; R. H. Brown, secretary; George Seitz, superintendent; J. W. Hussey, O. C. Mendell, Geo. Seitz, Geo. O'Briter, F. F. Coffin, trustees. Annual meeting, fourth Monday in June. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66½.

MINES RECEIVED TOO LATE FOR CLASSIFICATION.

ETNA MINING COMPANY.

GLOBE DISTRICT, PINAL COUNTY, ARIZONA.

Office, Room 12, 420 Montgomery Street. E. B. Jogo, president; A. F. McGrew, secretary; D. Tomkinson, A. F. McGrew, H. Searle, E. B. Jogo, L. W. Holt, trustees. Annual meeting, March 23. No. of shares, 100,000. No. of feet, 1,500 by 600. Listed on California Stock Exchange Board.

AMADOR GRAVEL MINING COMPANY.

AMADOR COUNTY.

Office, 424 Montgomery Street. Samuel Hubbard, president; Morris Speyer, vice-president; W. A. Lawson, secretary; W. H. Taylor, treasurer; Samuel Hubbard, Morris Speyer, W. H. Taylor, W. B. Cummings, trustees. I. Bluxome, superintendent. Annual meeting, first Monday in September. No. of shares, 100,000.

The property of this company is located about two miles from Jackson, Amador County, California, and comprises 270 acres of placer mining ground, with a title secured by U. S. patent. It contains one of the deepest deposits of gravel in the State, and is being worked in the interest of the owners solely, hence is not listed on either of the Stock Boards. The location of the ground is highly favorable for cheap and rapid working. The work is prosecuted from the surface down to the bed-rock, without any outlay for deep shafts and costly tunnels. Extensive prospecting has been done, and excellent indications obtained. The working machinery consists of 11 and 15-inch pipe, carrying 350 inches of water, 3¼ miles of ditch, with flume, etc. The water is drawn from the Blue Lakes, through the Amador Canal, and the cost is moderate, not to exceed eight cents per inch. There are no debts, and the mine is expected to pay from the start. To meet any possible emergency, 10,000 shares of capital stock have been reserved. The property above alluded to, was formerly known as "The Moon Mining Claim," and has been thoroughly examined by a number of competent experts. A letter from J. H. Reed, dated October 3, 1878, says: "I find an evident river channel, with every prospect of a lasting claim, that will warrant expenditure of money for full development." Mr. N. G. Young, an accomplished expert, says: "The claim is the largest and best fitted up in Amador County, and the facilities for working are excellent. I have been mining since 1852, in different parts of the country, and as yet have not seen any better or more extensive showing in any one mine." He also remarks that "2,000 inches of water can be brought on the mine throughout eight months in the year, which is one more advantage in so extensive a mining claim, that few possess. The outlook is splendid throughout. A tunnel has been run in about 40 feet, and with the use of a pan, will show from 10 to 30 colors to pan." Any number of favorable reports may be seen at the office of the company.

ATLANTA MINING COMPANY.

SILVER HILL, WEST TINTIC, UTAH.

Office, 420 Montgomery Street. A. H. Noon, president; A. F. McGrew, secretary; A. A. Noon, superintendent. A. H. Noon, A. F. McGrew, Antonio P. Troy, Charles Atherton, Lewis Smith, trustees. Annual meeting, April 5. No. of shares, 100,000. No. of feet, 1,500. Listed on California Stock Exchange Board.

The mine belonging to this company is the original "Noon" lode, situated on the ridge of Silver Hill, Oquirrh Range, West Tintic Mining District, Juab County, Utah. It is easily accessible, and wagons can be driven to the mouth of the shaft. Wood and water are plentiful in its neighborhood. At the 50-foot level the walls are about 11 feet apart; the shaft vertical that distance, pitches slightly to the west below that level, so far as yet developed. The ores of this mine have a remarkable resemblance to the celebrated Ontario ores, the same mineralogical specialties, and peculiar colorings, and appearance of the quartz, like that mine too. Its character as a true fissure vein is indicated by the well-defined foot and hanging walls; the country rock is quartzite and granite. There can be no question but that this mine is the mother-lode of Silver Hill, and will develop into a large mine of permanent character and great value. The company own a good mill site and water-power, but the custom mills of East Tintic are sufficiently convenient for present use.

BATEMAN GOLD AND SILVER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 106 Leidesdorff Street. S. E. Holcombe, president; O. H. Bogart, secretary; James Gunn, superintendent; C. D. Morrison, O. H. Bogart, S. E. Holcombe, D. L. McDonald, A. J. Baldwin, trustees. Annual meeting, second Monday in March. No. of shares, 60,000. No. of feet, 1,500.

BODIE CHIEF MINING COMPANY.

BODIE, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. Alex. Forbes, president; H. A. Charles, vice-president; D. F. Verdenal, secretary; Alex. Forbes, H. A. Charles, Robert Sherwood, S. F. Gashwiler, E. B. Clement, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

BODIE HYDRAULIC MINING AND WATER COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 22, Nevada Block. A. J. Ralston, president; E. C. Masten, secretary; Joseph H. Coulter, superintendent; A. J. Ralston, H. M. Yerington, G. T. Coulter, R. N. Graves, N. K. Masten, trustees. Annual meeting, second Tuesday in September. No. of shares, 50,000.

This company bids fair to be one of the most prominent corporations of its character on the coast. It has already purchased extensive water rights and privileges, including several large lakes located about twelve miles from Bodie; as well as ten one-quarter sections of excellent timber land. It is the purpose of the company to supply the town of Bodie and its surroundings with water for domestic, mechanical, and mining purposes. The work of developing extensive gravel beds has already begun. Several prospecting shafts have been sunk, one of which has reached the depth of 30 feet, carrying gold all of the way from the surface. About one-half mile of ditching has been completed, and it is proposed to prosecute the work with vigor during the present season.

CALEDONIA GOLD MINING COMPANY.

WHITE WOOD, BLACK HILLS, DAKOTA TERRITORY.

Office, Rooms 6 and 7, San Francisco Stock Exchange. Solomon Heydenfeldt, president; M. L. McDonald, vice-president; D. F. Verdenal, secretary; Bank of California, treasurer; Solomon Heydenfeldt, Henry D. Bacon, M. L. McDonald, Frank Locan, J. W. Gashwiler, directors. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

CHARTER OAK MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 424 Montgomery Street. Wm. H. Howland, president; John Daggett, vice-president; W. A. Lawson, secretary; L. J. Lewis, superintendent; W. H. Howland, John Daggett, John S. Morgan, A. P. Cox, C. B. Putnam, trustees.

This mine was purchased by L. J. Lewis in October, 1878, containing 1,500 feet in length and 100 feet in width; is situated in a southerly direction and contiguous to the Con. Pacific Company's ground, and about 900 feet south-westerly from the Bodie mine. A shaft is being sunk vertically on the vein, which has been exceedingly hard for 50 feet, with a mixture of quartz and porphyry. When at 60 feet in depth, the vein changed to softer gangue, with some water—giving unmistakable evidences of near approach to a body of milling ore. The location of this mine is one of the best in the district for cheap working, being near the town, with roads in close proximity; while it is contended by experts that the rich veins of ore already developed on the northerly end, and adjoining this mine, must surely pass through this company's property. Hoisting works will be erected at an early day.

CHIEFTAIN MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. Robert Sherwood, president; F. Tagliabue, vice-president; D. F. Verdenal, secretary; Robert Sherwood, F. Tagliabue, D. F. Verdenal, George Wilder, J. W. Harker, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

The Superintendent, Mr. Thomas Buckley, under date of September 19, 1878, writes as follows:

"The Chieftain is favorably located, joining the Summit on the north and the May Belle mine on the south. The main shaft is down 75 feet and is in good condition. On the 50-foot level a crosscut has been run to the west, cutting the ledge at the distance of 15 feet from the shaft. The vein is fully three feet wide, enclosed between well-defined walls, dipping to the west at an angle of 60 degrees. I have not as yet tested the quartz myself, but I am assured by those last working the vein that it is good and prospects well in gold. The contractors commenced work on the mine yesterday, and I will see that they fulfill the letter of their contract, and I will report to your office the weekly progress of the work."

COLUMBIA CONSOLIDATED MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA

Office, Rooms 6 and 7, San Francisco Stock Exchange. John P. Jackson, president; James H. Crossman, vice-president; D. F. Verdenal, secretary; J. V. Simons, O. H. LeGrange, James H. Crossman, John P. Jackson, Geo. W. Kidd, directors. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,000.

This mine lies directly east of the Gould & Curry, on the line of the new bonanza developments, and has one of the best prospects in the district.

CONSOLIDATED WYOMING GOLD MINING COMPANY.

NEVADA CITY, CALIFORNIA.

Office, Room 4, 309 California Street. A. G. Gurnett, president; J. M. Buffington, secretary; J. M. Buffington, Jr., superintendent; A. G. Gurnett, W. J. Gurnett, Chas. Pace, J. J. Hucks, J. M. Buffington, trustees. Annual meeting, last Monday in March. No. of shares, 100,000. No. of feet, 4,000. Shares per foot, 25. Bullion yield, \$253,761.65.

This mine, the location of which is given above, is composed of the Ural and Wyoming claims. The ledges have been prospected through a shaft 400 feet deep on the Ural ledge, and a shaft 300 feet deep on the Wyoming ledge. The ore body in the Ural ledge is five feet wide; in the Wyoming ledge, two and a half feet wide. Assays from the Ural average \$100 per ton. The company have two hoisting works, one steam engine, and one hurdy-wheel for water, and a sixteen-stamp mill run with water power, together with machinery which cost \$25,000. The amount of precious metals which have been extracted already reaches the sum of \$253,761.65.

CRESCENT HILL AND MINING COMPANY.

CRESCENT MILLS, PLUMAS COUNTY, CALIFORNIA.

Office, 106 Liedesdorff Street. D. L. McDonald, president; O. H. Bogart, secretary; T. J. Shackelford, O. H. Bogart, W. F. Bogart, J. M. Bogart, trustees. Annual meeting, first Monday in January. No. of assessment, 1. Levied, January 8, 1876. Total assessment, \$10,000.

CREVICE MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA.

Office, 414 California Street. E. D. Wheeler, president; William P. Gummer, secretary; E. D. Wheeler, J. W. Winter, Philip Hinkle, J. A. Chandler, George Humphrey, trustees. Annual meeting, first Monday in November. No. of shares, 100,000. No. of feet, 1,500. Shares per foot, 66 $\frac{2}{3}$.

DON QUIXOTE MINING COMPANY.

LAKE DISTRICT, MONO COUNTY, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. J. P. Dyer, president; C. X. Hobbs, vice-president; D. F. Verdenal, secretary; Lazard Freres, treasurer; J. P. Dyer, C. X. Hobbs, A. H. Rutherford, T. B. Reynolds, R. H. Lloyd, directors. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

DUDLEY MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 22, Nevada Block. A. J. Ralston, president; E. C. Masten, secretary; W. P. Holmes, superintendent; A. J. Ralston, N. K. Masten, W. M. Stewart, R. N. Graves, J. M. Quay, trustees. Annual meeting, second Monday in September. No. of shares, 64,000. No. of feet, 1,125. Listed on San Francisco Stock and Exchange Board.

The Dudley property is located in one of the most favorable portions of the now famous Bodie district. The claim was conveyed to the present owners by the Aurora Tunnel and Maybelle companies. It is situated about south of the Jupiter and southeast of Mono. A shaft has been sunk to a depth of 100 feet and discloses a vein of ore 15 feet wide that is about equal in assay to the Standard and the Bodie. There also have been discovered four other veins of ore of less width, but paying high. Some very valuable specimens have been taken from this ledge that approximate very near to pure silver and gold. The vein, in its general character, carries with it a great deal of silver, and instances of finding specimens of free gold and wire silver together. Active work is progressing in the development of the mine, and the hoisting works are pushed to their fullest capacity. Crosscutting will begin at once and will be pushed ahead as fast as giant powder and muscle can operate. The company does not propose to allow a valuable property to lie dormant. Great results are ultimately expected from this mine.

EAST BONANZA MINING COMPANY.

FLOWERY DISTRICT, STOREY COUNTY, NEVADA.

Office, Room 4, 426 California Street. C. L. Weller, president; O. C. Miller, secretary; W. Rose, superintendent; O. H. LaGrange, J. P. Garvey, C. L. Weller, J. P. Jackson, A. Andrews, directors. Annual meeting, first Tuesday in September. No. of shares, 100,000. No. of feet, 1,500.

The Bonanza lies south of the Flowery Con., in a very favorable location. The claim is an old one, and has been worked for years. Pay ore having been struck in their new shaft, the work of development will be pushed vigorously and systematically until the mine is thoroughly prospected. And under the management of Col. C. L. Weller as President and W. Rose as Superintendent, the mine cannot fail to be a success.

ENTERPRISE MINING COMPANY.

BODIE, CALIFORNIA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. M. Mayblum, president; Alex. Forbes, vice-president; D. F. Verdenal, secretary; J. C. Lennon, superintendent. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

FAIRFAX MINING COMPANY.

VIRGINIA, NEVADA.

Office, Rooms 2 and 3, London and San Francisco Bank. O. H. LaGrange, president; O. C. Miller, secretary; John W. Coleman, John Rosenfeld, O. H. LaGrange, Max Morganthau, O. C. Miller, trustees.

This mine is located directly east and in front of the Mexican and Union Consolidated mines—two very prominent mines, holding an advanced position in the mining market, and whose future is second to none upon the Comstock Lode. The title to the Fairfax mine is perfect, and is supported by United States patent for 800 feet on the ledge, with a mill site. The location of the Fairfax mine was made in February, 1863, in full compliance with the requirements of the laws of the district, and the claim has been sustained by use and occu-

pation to this date. The tunnel of the company was run to develop the ledge a distance of 270 feet; and its shaft is now in the most promising condition for pay ore within a short distance of the present workings. It is the intention of the company to push the development of the mine with great vigor, having the assurance of a bright future, from the recent prospecting of an ore body by the Sierra Nevada directly on a line with the shaft of this company, and only a short distance from it.

In the early days of the Comstock, it was upon the ground belonging to the Fairfax Mining Company that rich discoveries of gold were made upon the surface, and, by the further working of the claim, feeders and stringers of ore, and small veins here and there, were encountered, from which good assays in gold and silver were obtained. These are sure indications of a chimney or large deposit of ore in close proximity.

FLOWERY CONSOLIDATED MINING COMPANY.

FLOWERY DISTRICT, VIRGINIA CITY.

Office, 426 California Street. T. P. Jackson, president; O. C. Miller, secretary; W. Rose, superintendent; General LaGrange, I. P. Garvey, T. P. Jackson, Colonel Anderow, Wm. Rose, trustees. Annual meeting, 1st of September. No. of shares, 90,000. No. of feet, 3,000. Shares per foot, 30.

The Flowery Consolidated lies southeast of the old Flowery mine. The company are now engaged in running a tunnel. A large body of pay ore has been struck, but owing to the position of the stratification of the bed-rock, a shaft will be required, and hoisting works erected, and preparations are being made, by W. Rose, our well known mining engineer. The mine is under the management of Col. T. P. Jackson, and will, undoubtedly, be a bullion-producing one, and lucrative to its stockholders.

GARIBALDI GOLD MINING COMPANY.

CALAVERAS COUNTY, CALIFORNIA.

Office, 318 Pine Street. L. J. Lewis, president; J. W. Clark, secretary; L. J. Lewis, superintendent; Cyrus Palmer, R. H. Rogers, S. J. Corbett, A. P. Cox, L. J. Lewis, trustees.

The Garibaldi mine has been worked at intervals since 1861. It lies on the eastern side of the Stanislaus River, one mile below the celebrated Melones mine and about one mile west of the northern lode at Carson. Has bold croppings at intervals for 3,000 feet, is 10 feet wide, and yields from \$10 to \$20 per ton, the ore worked in arastras. Since L. J. Lewis & Co. have owned this mine they have run a tunnel 150 feet, and drifted on the vein 100 feet, finding a splendid vein of ore 10 feet in width, running from \$10 to over \$100 per ton, with from three to 15 per cent. in sulphurets, worth over \$200 per ton. A mill is about being erected, while there is ore in sight sufficient for 40 stamps. Five thousand miners' inches of water cuts the mine at one end sufficient for 100 stamps. So far as opened, this mine gives indications of being one of the largest and best mines in the State. Another evidence of the richness of this great vein is, that below the ledge the gravel, which is five to ten feet deep, carries over one dollar per cubic yard in quartz gold, while above the vein but a trace of gold is discovered.

GLOBE CONSOLIDATED GOLD AND SILVER MINING COMPANY.

STOREY COUNTY, NEVADA.

Office, 106 Leidesdorff Street. D. L. McDonald, president; O. H. Bogart, secretary; J. I. Ayres, B. L. Schmidt, D. L. McDonald, I. H. Conway, O. H. Bogart, trustees. No. of shares, 100,000. No. of feet, 5,500. No. of assessment, 10. Levied, July 23, 1877.

GLYNN-DALE MINING COMPANY.

BODIE DISTRICT, MONO COUNTY, CALIFORNIA.

Office, 405 California Street. John Neate, president; A. T. Crocker, secretary; Charles Dale, superintendent; Henry T. Scott, F. B. Taylor, Geo. B. Hibbard, John Neate, F. Homer, trustees. Annual meeting, second Wednesday in October. No. of shares, 100,000. No. of feet, 2,634. Listed on San Francisco Stock and Exchange Board.

The Glynn-Dale mine comprises two claims—the Dale and the Glynn—consolidated. The property lies directly south of the Mono, and adjoins this well-known claim. Upon the mine there are two shafts—the one at the north, upon the old Dale ground, being down about 150 feet, and the southern one, on the Glynn ground, being only down about 55 feet. The north, or Dale shaft, has penetrated a fine body of ore, with well-defined walls, which prompts renewed faith in the locality. At the north side of the shaft the ore body is two feet in width, and at the south side it is about eighteen inches in width, and with every advance in sinking the character of the ore improves steadily, assaying at last accounts as high as \$50 to the ton. On the Glynn property there is a shaft about 130 feet deep, which is situated 1,000 feet from the Dale shaft, which corresponds with the latter by showing a splendid fissure with two good walls, enclosing seven feet of excellent rock, which assays well. From this point, on the 100-foot level, a drift has been run 30 feet north on the vein carrying a fine body of ore, which improves as the drift progresses. The company are so well pleased with their prospects that they propose, at as early a day as possible, to sink a two-compartment shaft in the center of the consolidated ground, which will bring it on to the original Glynn claim, that having the most feet. Machinery and hoisting works will be put up as speedily as possible, and lively times may be expected in this locality. This consolidation is located on the main ore belt of the district, and the claim is second to none other in the locality, so far as future prospects are concerned. The owners of the mine appreciate this fact, and propose to exhaust their resources, if necessary, to bring about a verification of their present great expectations. We look for flattering reports from this mine as soon as active work is fully advanced.

GOLDEN GATE MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 20, Safe Deposit Building. J. R. Scupham, president; Otto Metchke, secretary; A. J. Lynche, superintendent; J. R. Scupham, B. B. Minor, A. W. Havens, T. F. Thompson, J. E. McElrath, trustees. Annual meeting, first Monday in September. No. of shares, 50,000. No. of feet, 1,500 by 300.

The properties of Golden Gate Mining Company are the Sacramento, the Ophir in the center, and the Indianola west, adjoining each other, giving it 1,500 feet in length with 300 feet of surface ground. These properties lay on Bodie Bluff, near the Summit on the south, and but a short distance east of the Standard and Bodie mines, stringers of which were cut into sinking the shaft. This shaft is now down about 90 feet, and carries in the bottom ledge matter of about 4 feet in width. Assays of the ledge, about 18 inches thick, running as high as \$700 per ton. The ledge is in a straight line, with the Dudley and Black Hawk ledge, and evidently the same. Developments are to be pushed as rapidly as possible, which will, to judge from present appearance, show up a good property.

IDA ELMORE MINING COMPANY.

OWHYEE, IDAHO.

Office, 106 Liedesdorff Street. O. H. Bogart, president; J. H. Conway, secretary; D. A. McKinley, T. B. Pheby, O. H. Bogart, J. W. Young, J. H. Conway, trustees. Annual meeting, first Monday in August. No. of assessment, 2. Levied, Sept. 13, 1875. Total assessments, \$105,000.

JOSEPHINE CONSOLIDATED SILVER MINING COMPANY.

PHILADELPHIA, NYE COUNTY, NEVADA.

Office, 106 Liedesdorff Street. A. K. Grim, president; O. H. Bogart, secretary; W. F. Leon, superintendent; A. K. Grim, V. Fernbach, D. L. McDonald, O. H. Bogart, W. F. Leon, trustees. Annual meeting, third Tuesday in October. No. of shares, 25,000. No. of feet, 2,500. Shares per foot, 10. No. of assessment, 1. Levied, July 20, 1874. Total assessment, \$3,750.

JUNIATA CONSOLIDATED SILVER MINING COMPANY.

ESMERALDA, ESMERALDA COUNTY, NEVADA.

Office, 312 California Street. A. J. Ralston, president; C. V. D. Hubbard, secretary; George Daly, superintendent; H. M. Yerrington, A. J. Ralston, S. P. Smith, R. N. Graves, Thomas Brown, trustees. Annual meeting, October 14. No. of shares, 50,000.

This claim is located in Esmeralda district, and is the original claim from which the Real del Monte was segregated. The property is owned by the same parties, and the development of the latter mine will determine the character of the Juniata. The exterior indications are necessarily similar to those of the Real del Monte, and it is fully believed that the mine will ultimately prove in the highest degree remunerative. The owners of the property propose to utilize every facility that capital can command to develop the mine. We anticipate a prosperous future for both this and the Real del Monte.

JUPITER MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 22, Nevada Block. A. J. Ralston, president; E. C. Masten, secretary; R. D. Braven, superintendent; A. J. Ralston, H. M. Yerrington, Wm. M. Gwin, Jr., N. K. Masten, Josiah Belden, trustees. Annual meeting, third Monday in September. No. of shares, 64,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

This property was formerly known as the old "Savage" claim, and is located east of the Bodie, adjoining that famous claim. It is bounded on the north by the Standard and the Summit claims. There is a shaft upon the property, that has been sunk to the depth of 110 feet. At this point assays reach from \$30 to \$40 per ton, and is supposed to carry the Standard ledge. The property has been carefully examined by experts, and it is conceded by all who have visited and investigated its indications, that it possesses one of the most valuable locations in the Bodie District. It is proposed by the management to push the work vigorously through the Winter, and it is confidently expected that, as the work progresses, we shall be favored with developments of a character second to none in the district.

LOLA MINING COMPANY.

GLOBE DISTRICT, MARICOPA COUNTY, ARIZONA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. L. L. Robinson, president; Clinton Gurnee, vice-president; D. F. Verdenal, secretary; L. L. Robinson, Robert Sherwood, Clinton Gurnee, Alex. Forbes, J. W. Gashwiler, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

MARYLAND MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, Room 20, Safe Deposit Building. John N. Risdon, president; Otto Metchke, secretary; G. H. Howard, superintendent; E. C. Locke, L. W. Mix, John N. Risdon, G. H. Howard, Henry C. Hyde, directors. Annual meeting, third Wednesday in September. No. of shares, 60,000. No. of feet, 1,500.

The Maryland joins the Atler on the North, running almost to the apex of Queen Bee Hill. It is one of the few locations which show bold croppings on the surface. These croppings have been followed down by a shaft, which developed a ledge of about 3 feet of very lively quartz, giving fair assays. The location is very favorable; and, to judge from the energy with which developments are pushed, and the present indications, it will soon be also a favorite and remunerative location.

McCLELLAN CONSOLIDATED GOLD AND SILVER MINING COMPANY.

SIGEL, NEVADA.

The McClellan claims are situated in Sigel District, about eight miles due north from Virginia City. A shaft has been sunk on the ledge, which shows good vein matter, and a crosscut proves it to be twenty-three feet wide. Another ledge of larger extent runs parallel to this, the extent and value of which is being determined daily, and bids fair to prove as valuable as any of its neighbors.

MIDES MINING COMPANY.

GOLD HILL, STOREY COUNTY, NEVADA. ●

Office, San Francisco Stock Exchange. H. Rosekranz, president; J. P. Couch, vice-president; D. F. Verdenal, secretary; H. Rosekranz, J. P. Couch, George W. Kidd, William Hoglehirst, J. Morgan, directors. Annual meeting, fourth Saturday in May. No. of shares, 30,000. No. of feet, 200.

The Mides lies between the Seg, Belcher and the Overman. The location is looked upon with especial favor on account of the developments recently made in the Overman. The claim is an old one, the only work done of late being sufficient merely to hold the ground. The probabilities are that within the coming year the claim will be heard from.

MONO AND CROSS CONSOLIDATED MINING COMPANY.

BODIE, CALIFORNIA.

Office, Room 4, 309 California Street. W. H. Dolman, president; J. M. Buffington, secretary; Cor. P. R. Dolman, superintendent; W. H. Dolman, Geo. W. Rogers, H. H. Flagg, G. W. Hopkins, C. W. Hoare, trustees. Annual meeting, last Monday in August. No. of shares, 100,000. No. of feet, 3,000. Shares per foot, 33½. Listed on California Stock Exchange Board.

The Mono and Cross is situated on the western slope of Silver Hill, just west of and running parallel with the South Standard; 3,000 feet in length; is within the porphyry belt of the district. A double-compartment shaft is being sunk, and has developed a well-defined quartz ledge 5 feet in width. At a depth of 65 feet a cross-ledge was cut 6½ feet in width, and of a most promising character. The prospective value of this mine bids fair to remunerate the stockholders at an early day.

MORNING STAR MINING COMPANY.

VIRGINIA CITY.

Office, Room 7, Stevenson Building, corner California and Montgomery Streets. W. H. Reed, president; J. B. Maholin, secretary; John R. Logan, superintendent; W. H. Reed, George Stone, George E. Clarke, J. S. Wilson, J. F. Broadhead, trustees. Annual meeting, last Tuesday in April. No. of shares, 80,000. No. of feet, 1,600. Listed on San Francisco Stock and Exchange Board.

This is one of the earliest locations on Cedar Hill, having been taken up and recorded in 1860, and the chain of title kept up all the way through. The claim is an extensive one, and covers a section of what is known as the "Red Ledge," one of the main Comstock group, here shown by a series of parallel croppings. The Morning Star adjoins the Sierra Nevada on the north and east, the Utah on the South; wherefore, if they have a bonanza in the Sierra Nevada ground, it is almost certain to extend into the claim of this company. In 1860, a shaft was started in the Morning Star location and sunk, until a heavy influx of water forced a suspension of the work. A tunnel was then started at a point about half-way between the present working shafts of the Sierra Nevada and the Utah mines, and carried in 600 feet, cutting the "Red Ledge" at a depth of about 200 feet, and nearly under its croppings, showing it to stand almost vertical. This lode, at the point where the tunnel intersected it, carried a streak of good milling ore, about 15 inches thick, the lode itself being strong and well defined. The tunnel was then continued through quartz and vein matter, nearly another 100 feet, where a second lode, between 20 and 30 feet in width, was intersected. This lode carried a large body of ore, having all the types of the genuine Comstock variety, the bluish-white tinge, and abounding in sulphurets and chlorides. This ore could now be milled with a handsome profit, but would not at that day pay for working, the cost of reduction alone amounting to \$30 per ton. Encouraged by this showing of ore, the company proceeded to sink a winze in this tunnel, but here again their purpose was frustrated by the inflow of water, which compelled them at a depth of 30 feet, to suspend work, the bottom of this winze being in \$50 ore. This ore, like most of that obtained near the surface on Cedar Hill, contained 65 per cent. gold, with a heavy percentage of the sulphurets and chlorides of silver, as can be demonstrated by an examination of the dump, where it has been lying in considerable quantity since the time of extraction. Finding it impossible to further explore their mine, without machinery to relieve it of water, the company suspended operations, doing very little work upon it for a long series of years. The ground being wet and heavy, the most of the tunnel, meantime, caved in, cutting off access to the ledges below.

The recent great ore strike in the adjoining grounds having inspired the Morning Star Company with new hopes, they have recommenced work on their mine with the purpose of exploring it with system and thoroughness. The old tunnel has been cleaned out and retimbered for its entire length. The shaft will be at once sunk to a depth of 500 feet, and be connected with the tunnel by drifts. Active ore extraction will at once follow, in the confident belief that the mine can thenceforward be made self-sustaining, and soon thereafter be advanced to a dividend-paying position.

There is no more promising mine among the new aspirants to fortune and fame on the "North End" than the Morning Star. If the bonanzas that have been strewn along this great metaliferous highway do not stop short at the Sierra Nevada, they must continue on through this ground. But, having traveled up to this point, they will not stop here. The geology of this ground, the developments already made, the heavy flow of water, all point to the presence of a broad and prolific ore channel here. The history of this mine lies mostly in the future; until which we postpone a further writing, in the expectation that its future will prove a great success.

NORTH SIERRA NEVADA SILVER MINING COMPANY.

VIRGINIA, NEVADA.

Office, Room 1, 309 California Street. Robert Sherwood, president; A. F. Main, secretary; J. G. Mather, superintendent; Robert Sherwood, D. Crittenden, J. W. Roberts, Geo. Barstow, John E. McDonald, trustees. No. of shares, 100,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board, California Stock Exchange Board, and Pacific Stock Exchange.

The North Sierra Nevada mine is located directly east of the Utah, and north of the Sierra Nevada about 200 to 400 feet, and is in a most favorable neighborhood. Upon the property are two shafts, one of which is down about 30 feet, and the other about 100 feet deep. The indications are very flattering, and it is proposed as soon as possible to sink a three-compartment shaft. The appearance of the ground, so far as exhibited by the two shafts, is of the same character as that of the vein in the surrounding properties, and the management are very sanguine as to the future of their mine. They propose to be liberal in their outlay, and anticipate ample remuneration corresponding to the work of development.

PIONEER MINING COMPANY.

VIRGINIA, STOREY COUNTY, NEVADA.

Office, 310 Pine Street. W. H. Wallace, president; J. W. Pew, secretary; W. H. Wallace, W. H. A. Mason, C. Land, J. M. Byrne, E. Straus, trustees. No. of shares, 100,000.

The Pioneer claim lies about 1,000 feet northeast of the Sierra Nevada shaft, and north of and adjoining the Scorpion claim. A three-compartment shaft has been located and sunk to the depth of 100 feet. In making this depth, the shaft passed through a strata of vein matter yielding fair assays. The property has, since September, 1878, passed into new hands, been re-incorporated, and all conflicting titles settled. The present managers propose to at once start work upon the claim, continue sinking the shaft, and erecting the necessary hoisting machinery. Number of feet in claim, 1,200 by 1,500, consisting of the Pioneer and Japan claims.

REAL DEL MONTE MINING COMPANY.

ESMERALDA MINING DISTRICT.

Office, 312 California Street. A. J. Ralston, president; C. V. D. Hubbard, secretary; George Daly, superintendent; A. J. Ralston, R. N. Graves, N. K. Masten, Daniel Cook, H. M. Yerrington, trustees. Annual meeting, third Tuesday in October. No. of shares, 50,000. No. of feet, 1,000. Shares per foot, 50. No. of (last) assessment, 3. Amount, \$1. Levied, May 22, 1878. Total assessments, \$50,000.

SANTA MINA MINING COMPANY.

BODIE, MONO COUNTY, CALIFORNIA.

Office, 405 California Street. John Neate, president; A. T. Crocker, secretary; John Hendry, superintendent; John Neate, J. H. Fish, George B. Hibberd, J. S. Famald, J. Homer, trustees. Annual meeting, third Thursday in September. No. of shares, 50,000. No. of feet, 1,500. Listed on San Francisco Stock and Exchange Board.

The Santa Mina mine is located on the west side of Bodie Peak, to the north of and adjoining the Sitting Bull claim. It is in a most desirable situation, and is surrounded with ample facilities for successfully working. There are upon the property two shafts, one of which is about 10 feet deep and the other about 40 feet deep, and, at these depths, the rock displayed appears to be of the same character as that of the Bodie and the Standard. The assays reach as high as \$50 per ton, and from the character of the ore at the bottom of the shafts, it appears more than probable that the assays will greatly improve as a lower depth is reached. The company are now contemplating in addition to the shafts already sunk, to run a tunnel into the hill, by which they calculate to get a backing of 400 feet on the ledge. The work on the tunnel will commence in a very short time, meanwhile it is proposed to sink the shafts already begun to a depth of at least 200 feet, when it is believed the assays will run far up in the hundreds. The general outlook of this mine is highly propitious, and the directors propose to use every means at their command to develop the property to its fullest worth.

UNCLE SAM MINING COMPANY.

EUREKA, NEVADA.

Office, Rooms 6 and 7, San Francisco Stock Exchange. L. L. Robinson, president; Clinton Gurnee, vice-president; D. F. Verdenal, secretary; Lazard Freres, treasurer; L. L. Robinson, Clinton Gurnee, J. H. H. Williams, D. F. Verdenal, Thos. Findley, Francis Cutting, Geo. W. Hopkins, trustees. Annual meeting, first Tuesday in June. No. of shares, 100,000. No. of feet, 1,500.

CARD OF THANKS.

MR. R. S. LAWRENCE, editor-in-chief, desires, for himself and his assistants, to express sincere thanks to the Presidents, Secretaries and Trustees of mining companies, for the uniform kindness and courtesy extended by them all during the compilation of the foregoing MINING REVIEW.

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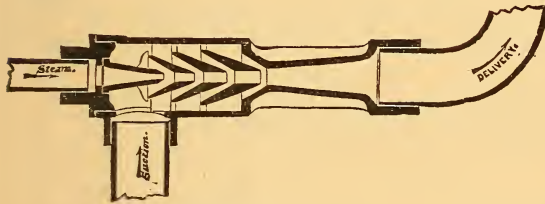
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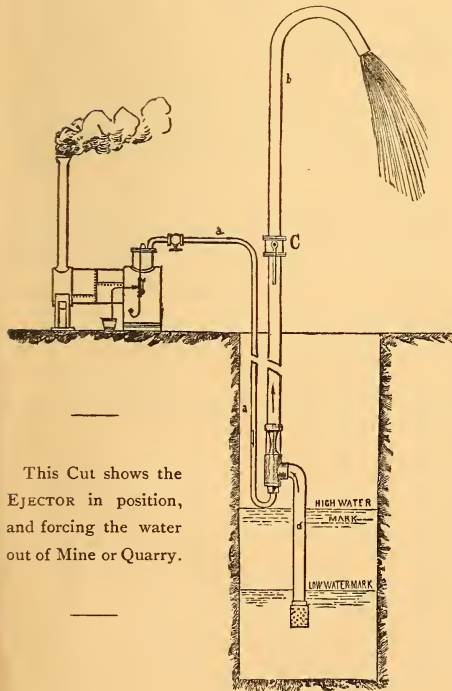
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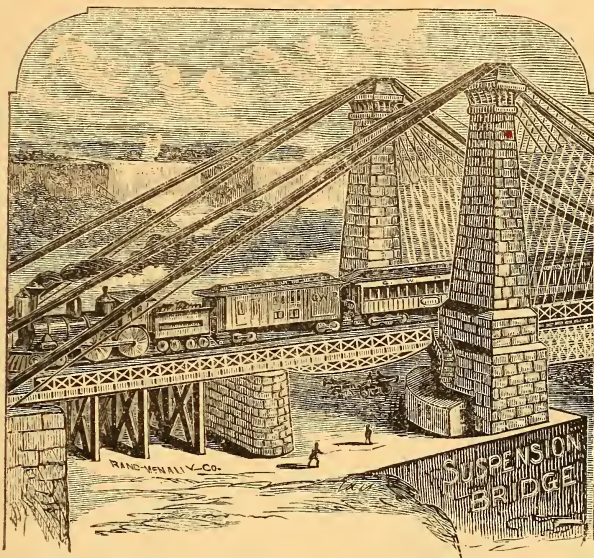
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