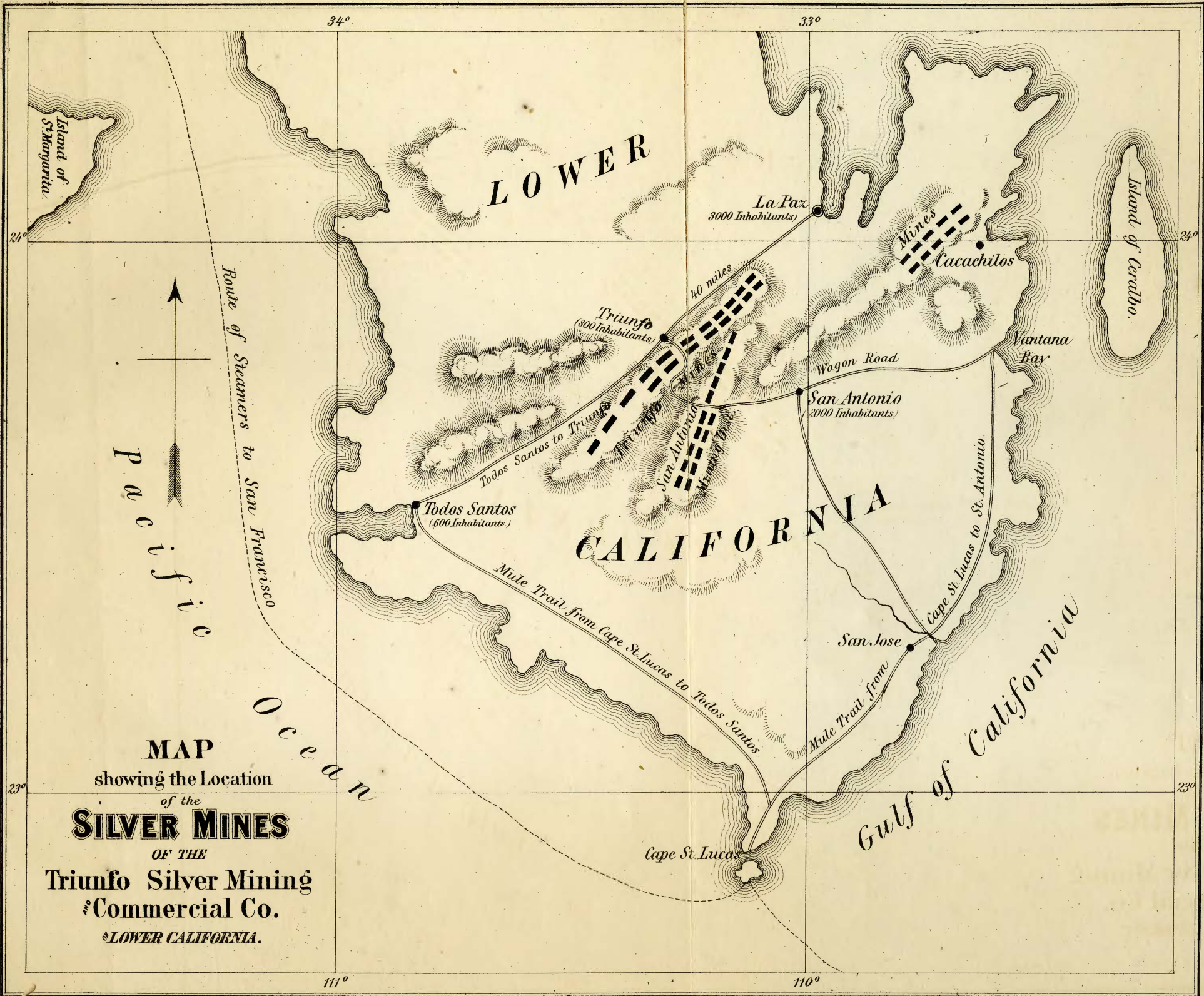


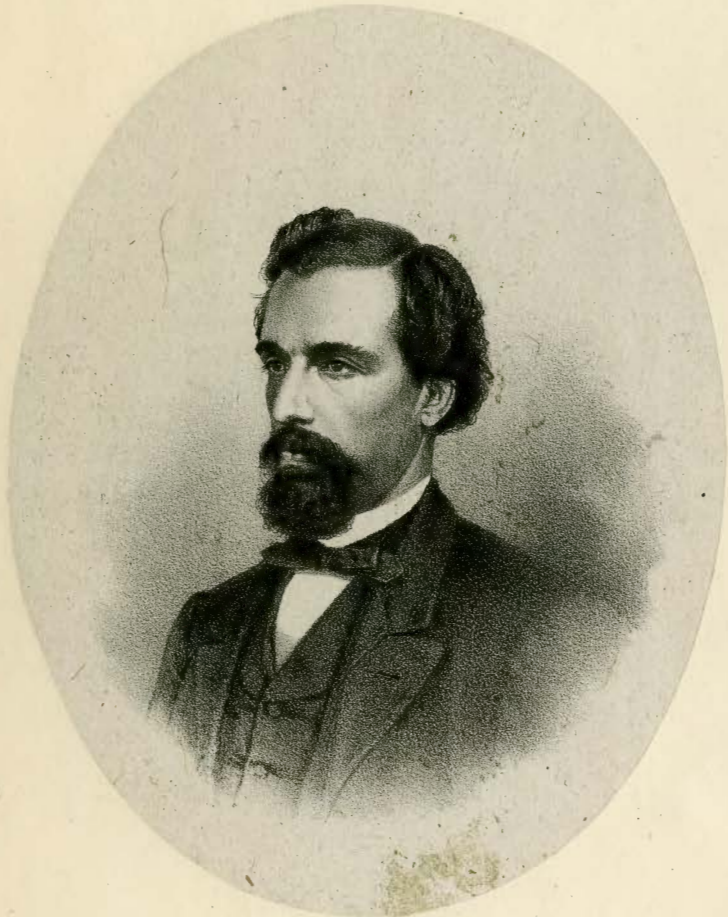
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Vol. 16. 1517

TRIUNFO



MAP
 showing the Location
 of the
SILVER MINES
 OF THE
**Triunfo Silver Mining
 and Commercial Co.**
 in LOWER CALIFORNIA.



J. Hilbert.

Governor of Lower California.

REPORT

ON THE PROPERTY OF THE

TRIUNFO
SILVER MINING
AND
COMMERCIAL COMPANY
OF
LOWER CALIFORNIA,

WITH SOME ACCOUNT OF THE MINES OF THE PENINSULA AND
OBSERVATIONS ON THE MODE OF

Beneficiating Silver Ores.



PHILADELPHIA:

KING & BAIRD, PRINTERS, 607 SANSOM STREET.

1866.

THE
TRIUNFO SILVER MINING
AND
COMMERCIAL COMPANY
OF
LOWER CALIFORNIA.

Organized under the Laws of Pennsylvania.

OFFICERS:

President,

L. MONTGOMERY BOND.

Vice-Presidents,

JAMES B. FLINT, **J. FISHER LEAMING.**
Of Flint, Peabody & Co., San Francisco.

Treasurer,

ROBT W. LEAMING.

Secretary,

CHARLES BLAKISTON.

Board of Directors,

L. MONTGOMERY BOND,	JNO. R. BLAKISTON,
JAMES B. FLINT,	BENJAMIN ORNE,
J. FISHER LEAMING,	GEO. S. REPPLIER,
JOSHUA LIPPINCOTT,	THOS. A. BIDDLE,
THOS. T. TASKER, JR.	

Solicitor,

MCGREGOR J. MITCHESON, Esq.

Office of the Company, No. 53 South Front Street.

Agent and Manager of the Mines,

HENRY S. BROOKS.

Amalgamator,

GUSTAVUS YUNGJOHANN.

CAPITAL STOCK \$750,000, ACTUALLY PAID IN.

7,500 Shares—Par Value, \$100.

**ISSUED FOR THE PURCHASE OF MINERAL LANDS AND FOR
MINING, MILLING AND TRADING IN LOWER
CALIFORNIA, MEXICO.**

“THE TRIUNFO SILVER MINING AND COMMERCIAL COMPANY” is chartered for the purpose of mining silver, and conducting commercial enterprises in Lower California, Mexico, and is the union of the Triunfo Gold and Silver Mining Company of San Francisco, and the Molineña Silver Mining Company of Philadelphia.

The former has had an existence of four years, and has mined and “beneficiated” a large amount of ores. The latter has been working one year, and has fully proven its mines, and shipped ores also.

The property is situated in the Mineral District of San Antonio, about two leagues distant from the town of that name, and consists of the following mines, *to wit*:

LA CANOA,
LA VALENCIANA,
EL CARMEN,

LA MOLINEÑA,
LA MENDOCEÑA,
LA TRIUNFANTA.

Containing together 13,000 feet, more or less, of continuous ledge, traceable by the croppings throughout the entire distance.

ALSO: The "*Sitio*" of *Triunfo*, covering the mines and embracing six square leagues of territory, including the town plot of *Triunfo*, now containing 800 inhabitants, and increasing.

ALSO: The *Sitio of Marguerita*, one square league in extent, near *Vantana Bay*, a shipping point on the coast.

ALSO: A *Sitio* on the *Aroyo Honda*, with a superior *Mill Site*.

ALSO: One 3-16 interest in the *Sitio Pisonaña*, of same size.

ALSO: A superior 30-stamp Mill and Reduction Works, with a 50-horse Power Engine, Roasting, Melting, Retorting, and Assaying Furnaces, Laboratory and Apparatus for Assay and Analysis, complete, and unsurpassed in superiority by any upon the Pacific Coast.

ALSO: An 8-horse-power Steam Hoisting Engine and Apparatus, together with all the *et ceteras* belonging to a perfect Mining and Milling concern, to *wit* :

Buildings for residences and Offices for Agent, Chief Engineer, Amalgamator, and Bookkeeper; Stabling, Shedding, Storehouses, Forges; and Movable Property—Horses, Mules, Oxen, Wagons, Harness, Mining Tools, and Materials.

The reports which follow, show very fully the character and quality of the mines, as well as the advantages of the region for the shipment and working of ores. But as the principal report has reference more particularly to the *Molineña* and *Canoa* Mines, (because the writer of it was the agent of that Company,) it is proper to state that the *Mendoceña* and *Carmen* Mines are much more fully developed than either the *Molineña* or *Canoa*, both of which former are producing abundant metal of very fine quality. The *Mendoceña* is opened to a depth of 300 feet, with diverging gal-

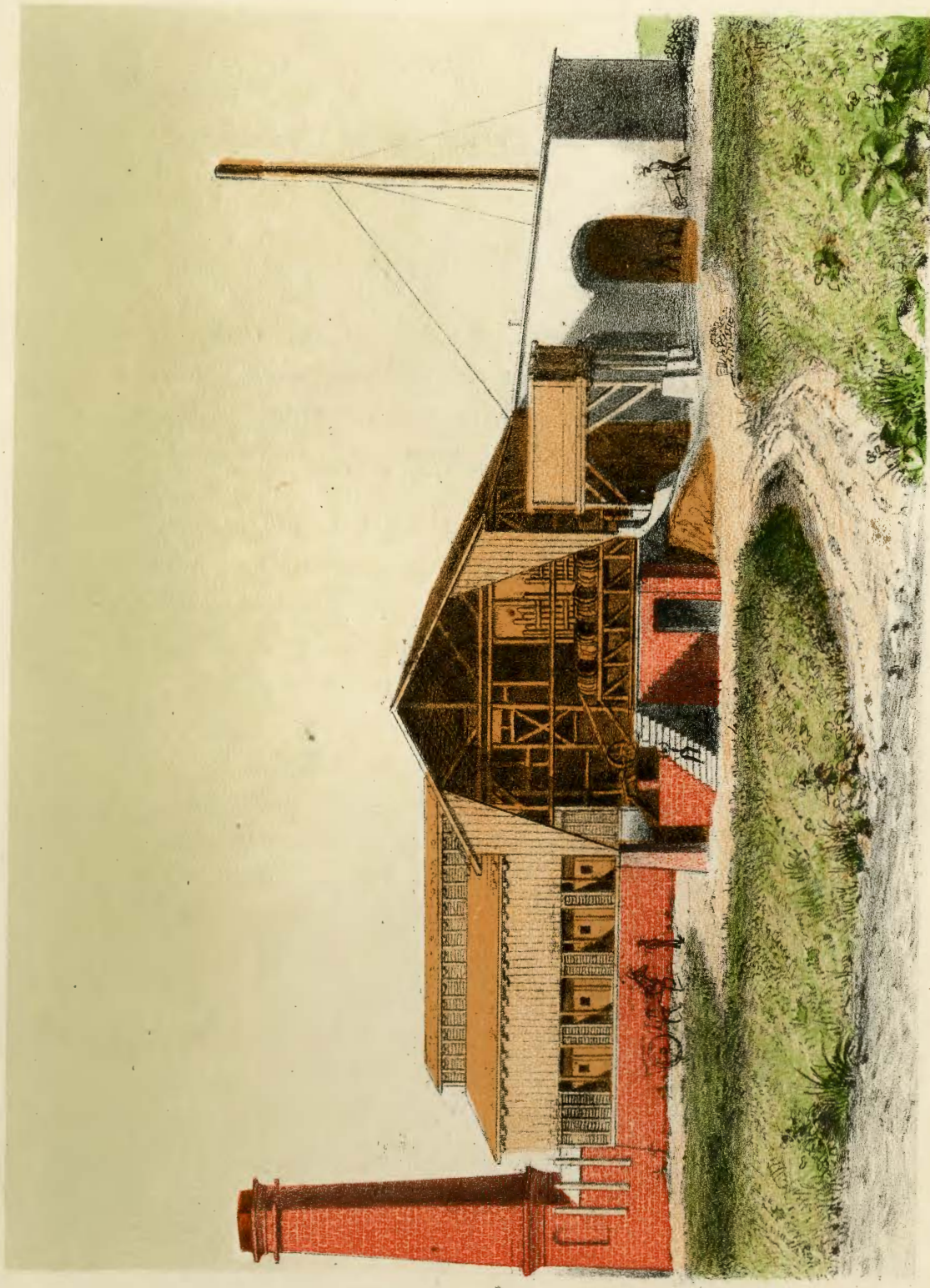
leries; and the *Carmen* also to a considerable depth; the latter producing the finer metal of the two.

The capital stock of the Company is \$750,000 actually paid in, excepting \$70,000 reserved. \$50,000 of the capital is appropriated for the enlargement of the Company's Mill, now under contract, and for establishing a commercial depot at Triunfo.

IT MAY BE STATED, without derogating from other mining regions, that the Lower California mines have a great advantage in the fact that they are almost upon the coast, which renders transportation to and from them both easy and cheap.

The ores are so rich in mineral, that the better class of them can be shipped *abroad* for reduction* at a large profit. There are two fine roads, one to La Paz, 40 miles long, owned by the government; the other to Ventana Bay, 30 miles in

* See letter of Richardson & Co., of Swansea, and of Professor Price, of San Francisco, following this report.



E. Hartman Lith. 632 Chestnut St. Phila.

TRIUNFO COMPANY'S MILL.

length, built by this Company. Both are level roads nearly all the way to the coast, and can be used either for mules or wagons.

Another advantage of Lower California in silver mining, is the cheapness of labor, wood, and salt, the principal items of expense in mining and working ores. Common labor is abundant at \$1 to \$1.50 per day. Wood is delivered to the mill at a cost of \$4 per cord, and salt at \$17 per ton.

In Nevada labor costs \$3 to \$4 per day, wood \$12 per cord, and salt \$70 per ton.

It is confidently expected that after a few months delay, consequent upon the enlargement of their Mill, that the Company will be in the regular receipt of bullion by the arrival of each steamer from La Paz.



REPORT BY L. MONTGOMERY

BOND to the subscribers to the Molineña and Canoa Silver Mines, San Antonio District, Lower California, the 20th day of April, 1865 :

GENTLEMEN:---Being honored as your representative to visit the Pacific coast of America, and report upon certain Silver Mines in the San Antonio District of Lower California, known as the Molineña and Canoa Mines, I started on the somewhat responsible mission, leaving New York by steamer on the 3d of December last, *via* Panama and San Francisco, and after a pleasant passage arrived in the latter city on the 27th of the same month. There being no communication with the Peninsula from the lower coast, I was compelled to travel two thousand five hun-

dred miles* out of my way to reach the point of destination.

Learning upon my arrival at San Francisco, that an extra steamer would leave on the 30th for Mexican ports, *via* Cape St. Lucas, I took passage on her, and reached the Cape on Friday, January 6th. From that point the route was over a very rough country, one hundred and twenty miles to *Triunfo*, near which place the said mines are situated.

In company with two other persons and a guide, I continued my journey from the Cape the same day, travelling upon well-trained mules provided by CAPTAIN RITCHIE. It was a ride never to be forgotten—over precipitous ledges, in deep gorges, through the dry beds of rivers, following intricate trails, without comfortable stations, by day and by night. The third day we reached the town of *Triunfo*, the situation of the works of the "*Triunfo Gold and*

* By an arrangement recently made, communication will soon be direct in twenty days, *via* Acapulco, Mazatlan, and La Paz.

Silver Mining Company." We found the Secretary of the Company, MR. HENRY S. BROOKS, and the Superintendent, JUDGE McELROY, had gone to *La Paz*, forty miles distant, to convoy silver bars for shipment to San Francisco.

Their absence for several days afforded me opportunities for an examination of the mines without restraint, and I lost no time in improving them. The mines are but half a mile distant from the town, and every facility was afforded me by the Triunfo Company to pursue my examinations.

I was charged by you with the following duty, *to wit*:

FIRST.—To ascertain the situation and condition of the *Molineña* and *Canoa Mines*; whether they have been opened, and to what extent; and whether they are "rich and abundant in metal," as represented, in comparison with certain other mines.

SECOND.—To investigate the titles.

THIRD.—These examinations being satisfactory, then to have the mines conveyed to you; and

FOURTH.—In general terms, to do whatever else should seem to myself necessary for systematic and energetic work upon them, so as to insure their early development and productiveness.

In obedience to these directions, I have to report as follows, *to wit*:

FIRST—HISTORY AND SITUATION OF THE COUNTRY.—

About midway between the Pacific coast and the Gulf of California, fourteen leagues southeast from *La Paz*, and two southwest from the flourishing Puebla of *San Antonio*, stretched at the feet of o'ertopping mountains, on both sides of a little aroyo, lies the ancient town of *Triunfo*. In the early days of the *Montezumas* it was the scene of a deadly conflict between the Aborigines and the Spaniards. The leader of the latter, says the legend, was a

priest, who wished not only to subdue the natives, but to coerce them to accept the Catholic faith, and to this end had driven their forces to the protection of these mountains. Both parties were obstinate, the Mexicans holding to the fastnesses, the Spaniards endeavoring to draw them into the valley. After months of suffering, the mountaineers were compelled to come down and fight. The Spaniards proved too strong for them, and they were defeated. The priestly leader of the Spaniards—tired out with waiting—when he at last heard the victorious shouts of his soldiers, threw up his hands towards heaven, and, in a loud voice, exclaimed, *Triunfo!* A triumph of arms gave name to the valley and town.

THE MINES.—The *Molineña* and *Canoa* Mines are upon the *San Nicolas* and *San Pedro** ledge, and adjoin the *Men-*

* The San Nicolas and San Pedro are the mines of the Great Mexican Company, and from their prominence give name to the ledge.

*doceña** and *Valenciana* of the Triunfo Company to the southward, and their croppings overlook the old town. *El Carmen* and *Triunfanta*, of the same Company, and the *Maria*† and *Santa Guillermo*, belonging to other parties, are contiguous, in the same direction.

The *Molineña* and *Canoa* appear to gather the veins of all these; the former receiving not only that of the *Mendoceña*, but that of the *Triunfanta*‡ also, which passes to the east; and the latter, those of the *Valenciana*§ and *Santa Guillermo*|| besides an *hilo*¶ from the *Mendoceña*, running through the *Santa Guillermo*.

No mine has yet been prospected southward of the *Molineña*, which is consequently the last one in that direction on that ledge.

* The *Mendoceña* is about one-third the size of the *Molineña*.

† The *Maria* is about one-fourth the size of the *Molineña*, and has a mill with four stamps.

‡ The *Triunfanta*, it is supposed, has the vein of the *Maria*.

§ The *Valenciana* has the vein of *El Carmen*.

|| The *Santa Guillermo* lies on the *arroyo*, east of the *Canoa*.

¶ Thread.

Southward from the *Canoa* is the *San Miguel*, and some others.

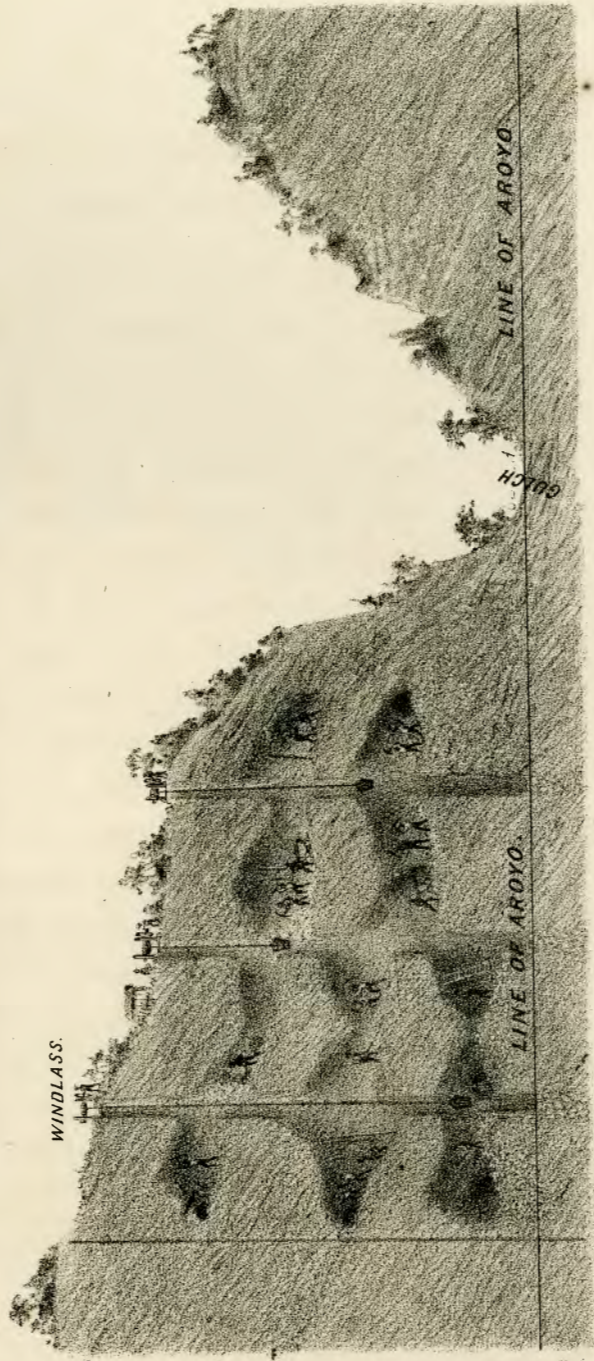
THE MOLINEÑA MINE.—The size of the *Molineña* is four pertinencias,* or eight hundred metres†, in length, by two hundred in width. Reduced to feet, it is *two thousand six hundred and twenty-two*, by *six hundred and fifty-five*. The surface is irregular, beginning on the north a little below the apex of the mountain, and descending gradually to a deep gulch, which cuts it about half way of its length, from which it rises again, taking in nearly the whole of a smaller hill. At its feet runs an *arroyo*,‡ separating it, in part, from the *Canoa* mine. This makes the mine favorable for working, since it can be approached from several directions by tunnel, or pierced at many points by shaft.

* A pertinencia is two hundred metres square.

† A metre is $38 \frac{1}{100}$ inches. A vara, $32 \frac{1}{100}$ inches. The French metre has been adopted, instead of the Spanish vara, in the measurement of mines in Mexico.

‡ Creek, dry.

PLAN OF OPENINGS ON THE MOLINENA MINE.



About two hundred feet from the northern line of the mine, is the old "poso,"* now continued off the main vein, to the depth of ninety feet, in its course discovering a smaller vein of two feet of fine metal.† This shaft was commenced by MR. FLORES for the great Mexican Company,‡ and continued by MR. BROOKS, late part owner of the mine, with the expectation of reaching the vein at one hundred to one hundred and twenty feet. In order to prove the vein at a higher point, however, a level has been started to run from the shaft to the vein, about sixty feet down. This main vein, in the cut at the entrance of the shaft, is ten feet wide, with five or six feet of metal;§ and dips to the east under the ridge of the mountain, at an angle of

* Shaft required to be made by law, thirty feet deep, to prove the vein, before possession can be had.

† From this vein was taken the metal from which the bar hereinafter named, and brought home with me, was made.

‡ At the time of the "denouncement" of the mine for that Company.

§ The ore is familiarly called "metal" by the miners.

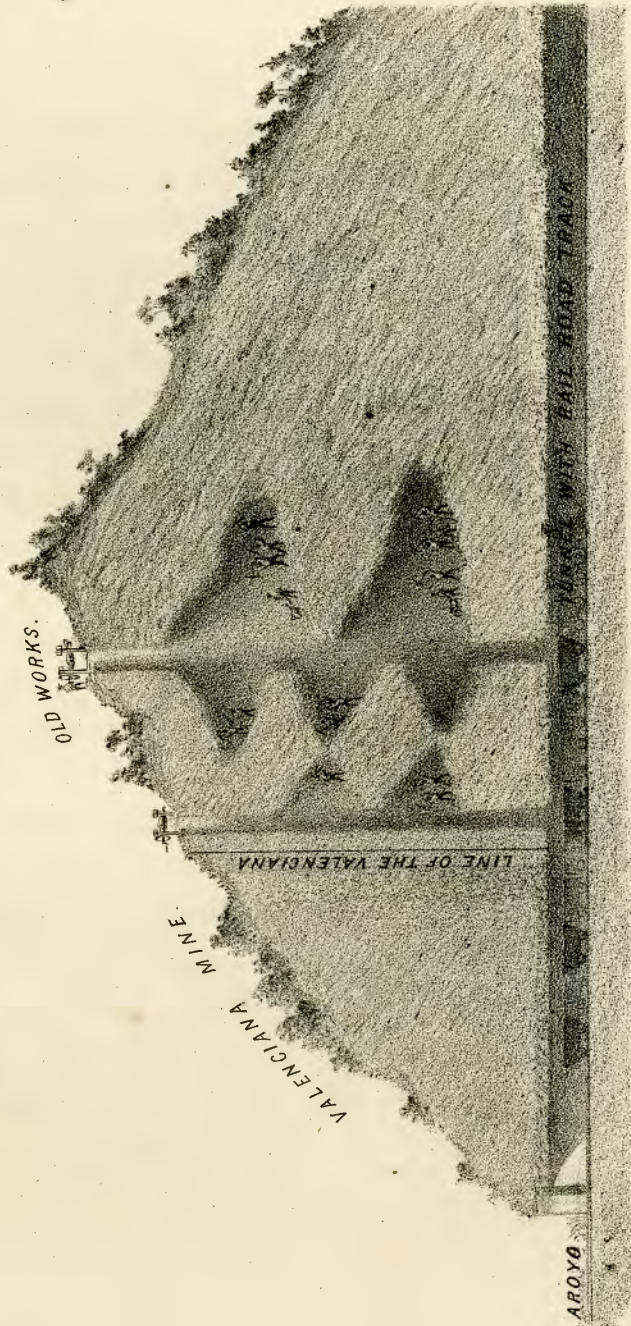
about sixty degrees. There are other smaller veins in the hill, dipping in the same direction.

THE CANOA.—The *Canoa* Mine is of same size as the *Molineña*, and overlooks it. Between them is a triangular “demascias,”* and a corner of the *Santa Guillermo* Mine. The latter has but a small vein, and was denounced for the purpose, no doubt, of securing, at a certain depth, the vein of the *Valenciana* and *Canoa*, which mines lie west of it, and their vein dips towards it at an angle of forty-five degrees.

The Canoa Mountain is the highest one in the immediate neighborhood, and is sugar-loaf in shape on three sides. The mine begins about a third way up its side on the north, and passes southward to the line of the *San Miguel*, in the same hill. The mine is opened by a “poso,” thirty-five feet deep, which is sunk

* Plot of unclaimed ground, too small for a mine, and free to its neighbors. See Map.

PLAN OF OPENINGS ON THE CANOA MINE.



upon the vein, almost on the line of the *Valenciana*, and is already in metal. The vein is heavy, but the depth attained is not sufficient to enable me to report accurately upon the quality. It is the judgment of MR. FLORES—the most experienced miner in the Territory—that the *Canoa* collects several veins which split off from the mines immediately north of it. This seems probable, for it appears that from this point there is but one main lode to the south, while north of it there are three, with numerous *hilos*.

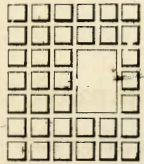
From all the data that I could obtain then, the quantity of metal in these mines, “at the depth attained,” is *equal* to the representations of the seller.

From the *Molineña*, two and a half tons of *la fuego*, or fire metal,* was taken out; and from the *Canoa* half a ton of *azogue*, or surface ore, in my sight. These were several times assayed; first by MR. YUNGJOHANN, the obliging Amal-

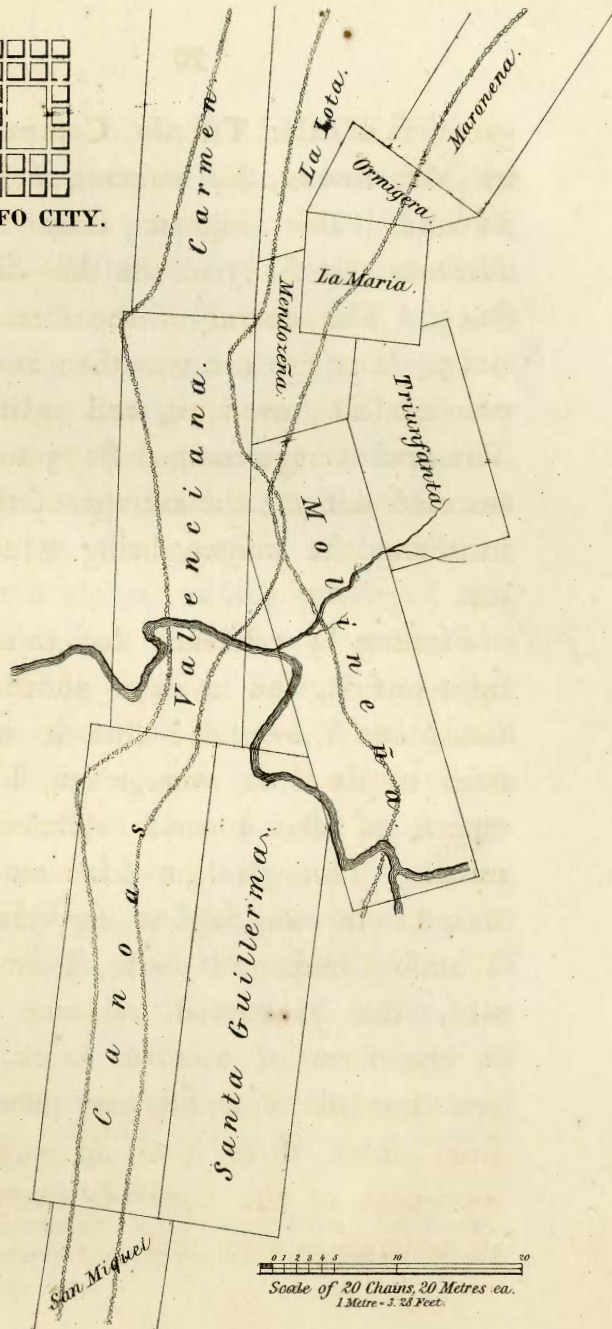
* Fire metal is the Mexican name for the Sulphurets which lie too deep to be affected by the action of air or water.

gamator of the Triunfo Company; then by MR. BRONN, his assistant, and by MR. BROOKS. The highest assay from the *Molineña* was \$183 to the ton—the lowest, \$143. The *azogue* of the *Canoa* reached \$105. The fire ore was then assorted into two qualities, averaged, and again assayed. The first average reached \$173 to the ton; the second, \$91; the average of the whole, including the *azogue*, being \$120 to the ton.

Finding by reference that this exceeded by two-fold, the average of the famous *Gould and Curry*, and that it has rarely been surpassed as average ore, I was convinced of the superior richness of the mines. Through the kindness of MR. BROOKS in working it for me, at the Triunfo Company's works, I submit herewith the substantial evidence of value in the form of a silver brick, weighing two hundred and fifty-six ounces, made from these three tons of ore; besides specimens of the metal in every stage of its progress in reduction.



TRIUNFO CITY.



0 1 2 3 4 5 10 20
Scale of 20 Chains, 20 Metres ca.
1 Metre - 3.28 Feet.

TITLES AND PRIVILEGES.—

My next business was to investigate the titles, for which purpose I visited *La Paz*, the capital. While there, I had free access to the government. Through the kindness of GOVERNOR GIBERT,* and the American Consul, MR. ELMER, I had no difficulty in obtaining the necessary information. I examined, with much care, the Mexican Mining Laws, the question of boundaries, incorporated rights, mining privileges, &c., &c. I consulted Gamboa's Commentaries on the Mining Laws of Spain,† and other authors on those of Europe, Mexico, and the United States, and found all to agree that the Mexican Laws are the most perfect of any known laws for regulating mining privileges, and for protection against trespass, which are the chief points of difficulty. As for security of tenure, the Government of Mexico is the owner of all the unclaimed mines in its territory,‡

* Pronounced *Hevair*.

† An exceedingly rare work.

‡ This is not the case in the United States. See the decision of the Supreme Court in the case of *Fremont vs. Flower*, in the Mariposa estates.

and grants titles on certain conditions, *to wit: that work shall be done upon them four months in every year.* If these conditions are complied with, persons holding a title from the Government cannot be displaced, but may dispose of their rights at pleasure. If these conditions are not complied with, the mine is forfeited and reverts again to the Government, which is final against all other claimants.

A government title, therefore, is all that the holder of a mine needs to prove his perfect claim, which cannot be disturbed so long as he conforms to the law. If an owner of a mine from the Government dispose of it to a third party, said party has only to see that the transfer is made at the office of record—a transcript of which is his perfect title, and his only deed of conveyance. This record shuts out all other claimants.

The *Molineña* and *Canoa* Mines being thus held of the Government by WHEELER, GALLAHER & Co., they sell them, and the Government gives the title. Nothing

could be stronger; and I could no longer hesitate as to my duty on all the points of my commission. I then accepted the mines, and had them properly conveyed to you. Subsequently I had them surveyed, and correct maps prepared for reference, herewith submitted.

SUPERINTENDENCE.—A Superintendent should be a competent Mining Engineer and a good business man. He is not only to open and work the mines, but is to direct an important business, disburse large sums of money, &c., &c. He must also understand the character and value of ores, and know how to assay and reduce them. It is also essential here that he should speak the Spanish language.

All these requisites I had discovered in the person of Mr. M. A. WHEELER, Mining Engineer of San Francisco, besides having the most favorable recommendation of him. If I could secure his services, I felt that I should be fortunate, and I had strong hopes of being able to do so

upon my return to San Francisco. In the mean time MR. BROOKS himself would take charge of the work.

The Mines having now been acquired, and the temporary Superintendent on the spot, I proceeded, without delay, to have them put in hands for opening. You had provided me with funds to do so. MR. GALLAHER had offered, for his firm, to open both mines by contract, for twenty-seven thousand dollars in gold, but his proposition only contemplated running tunnels transversely into each mine, until they reached the vein. After giving a great deal of thought to the subject, I was satisfied that this would not be the proper mode of opening in this case. It would involve a large amount of work through very hard rock, causing a delay of months; and, when done, would only touch a single point in each mine, and admit of the working of only a few miners. The situation of both the *Molineña* and *Canoa* would allow of their

being opened *on the vein*, either by an adit* or shaft. By thus working them, ores would be taken out to repay the cost, and, with good superintendence, I concluded that it would be economy not to contract for the opening, but to do it under our own superintendence, and in this decision MR. BROOKS fully agreed with me. He estimated that three hundred tons of good ores could be taken out during the progress of the work of opening, which would be worth, perhaps, thirty thousand dollars. Besides, the mines would then be opened in a number of places, admitting of the employment of many more miners. Immediately upon coming to this decision, tools, with some difficulty, were procured, and men set to work at various points upon the mines. Before leaving the country, I had the pleasure of seeing the grounds cleared, and shafts commenced at three points in the *Molineña*, and an adit and one shaft

* Tunnel.

in the *Canoa*, and all in metal. A smith's forge was in operation, and sheds in progress of erection, for storage, &c.

My work on the Peninsula was done. To many persons at San Antonio, Triunfo, and La Paz, I am under obligations for various acts of kindness. Among them I feel bound to name MR. HENRY S. BROOKS, JUDGE ALEXANDER McELROY, and MR. YUNGJOHANN, as well as DON FELIX GIBERT, Governor of the Territory; DON CONRADO FLORES, of the Great Mexican Company; DON SANTIAGO VIOSCA, Agent of Wells, Fargo & Co.; and F. B. ELMER, Esq., United States Consul at La Paz.

The steamer had arrived, and I took my leave of the country. When I arrived in it, it had no attractions for me. Now I was attached to it—had property there—“where a man's treasure is, there will his heart be also.” But I liked the climate, and had found congenial spirits among the inhabitants. God bless them, and the land they have adopted!

On the 21st February I sailed for San Francisco, *via* Mazatlan, and arrived on the 28th. As MR. BROOKS would need more funds before I could reach home, and get them to him, and as it was extremely desirable that the work on the mines should continue without interruption, I telegraphed you for an assessment, and received it in time to forward by the steamer of the 10th of March to La Paz.

I had but one other duty to perform, and that was the securing of MR. WHEELER as a permanent Agent and Manager. He was identified with the sale of the mines to you. I had noticed in him a strong desire to see them successful, and felt that his acceptance of the post would be a guarantee, not only of his sincerity, but of his confidence in the mines, while his long experience in mining would enable him to develop them to the best advantage. I am happy in being able to report, that after some days consideration, and at the urgent solicitation of both of his partners, he consented finally to accept the post, and

he will sail by the April steamer to take charge.

Should you decide upon erecting Reduction Works, which I earnestly recommend at the proper time, MR. WHEELER or MR. BROOKS will, either of them, be found competent to superintend their construction and management. Both are alive to the progress of improvements in machinery for beneficiating ores, and appear to have just ideas of combining economy with utility in the construction of works.

I left for home on the 13th ultimo, by steamer from San Francisco, and arrived without accident on the 5th instant.

Respectfully submitted,

L. MONTGOMERY BOND.





E. Herberich Lith. 657 Chestnut St. Philad.

TRIUNFO FROM THE EAST.

SUPPLEMENTAL REPORT,
WITH SOME ACCOUNT OF
LOWER CALIFORNIA—ITS
MINES—THEIR POSITION
AND VALUE.—For two centuries

the existence of rich mines of Silver, in Lower California, has been known to the natives of that country. The evidence of this knowledge is seen in the innumerable excavations upon every mountain and hill-side. Originally Indian, without any knowledge of metallurgy or chemistry, and later, with only a small infusion of such superior knowledge, the inhabitants did not understand the science of “beneficiating” ores, excepting such kinds as yielded easily to a process suggested by necessity.

They found the “*surface-ores*” tractable, requiring only to be crushed fine, and the silver precipitated. This they learned to do by the “*Patio* process,” in *arastras*; which is simply grinding the ores between burrs, and amalgamating with quicksilver, losing in the process about half the silver.

At a certain distance down, however,

they found the ores to assume the form of sulphurets, which they could not manage. They could only follow up nature, and complete the work which the elements had begun. What air and water desulphurized, they crushed and precipitated,—nothing more. But they had no necessity for more. They were a simple people, with few wants. They had full range of the country, and there was enough of these surface ores for all their necessities, and they worked them only as they had need. They abandoned a mine when they reached the point of contact between the “*azogue*,” or *oxidized ores*, and the sulphurets, or “*fire*” ores; just where modern science fixes the *beginning of value*. Sometimes this point is but a few feet below the surface—it is rarely more than fifty feet—depending upon the character of the upper strata.

PROGRESS OF THE PENINSULA.

—The unattractive character and isolated position of the Peninsula of Lower California, and the rapid discoveries of mines farther north, combined to keep back inquiry there until 1859, when informa-

tion of a remarkable success in that country became noised in San Francisco. A commission from the City of Mexico, in the person of DON CONRADO FLORES, had been sent to the region, about two years before, to open the way for an investment, should the mines prove as rich as they were reported to be. MR. FLORES was every way competent to undertake the task. He was a graduate of the Mining College of Mexico, at which institution he acquired two years practical experience in the great mines of the *Real del Monte*, which is a part of the discipline of this celebrated Mining Institution. After a thorough examination of the country, MR. FLORES advised the working of the *San Nicolas* and *San Pedro* Mines in the name of the Great Mexican Company.

MINES OF THE PENINSULA—

THE GREAT MEXICAN COMPANY.—The Great Mexican Company's Mines, under the management of MR. FLORES, have been worked five years. They are opened by two long tunnels and interior galleries—the tunnels being connected by a gallery.

There are three distinct veins on the line of these tunnels, each possessing a different class of fire metal, and having an aggregate width, as it is claimed, of twenty-eight feet of metal. About eighty men are employed in taking out ore, which is assorted into three classes; the first class being that assaying \$120 and upwards per ton; the second, that from \$50 to \$120; the third class being all below \$50. The first and second class are shipped to *Freyburg*, in Germany, and sold; the third is left at the mouth of the mines, and is practically worthless to the Company, for the want of beneficiating works.* MR. FLORES has worked his mines, Mexican fashion, without any of the appliances of modern science. His ores are taken out with *peon* labor, and removed from the mines, up shafts and through tunnels, upon the backs of men, and conveyed to the sea-board on mules—each mule carry-

* The principal owners of these mines, MESSRS. MÜLLER & Co., of Mazatlan, are extensive German importers, who have a house at Freyburg. They find employment for their ships in return freight with these ores, which is doubtless their reason for shipping them to that almost inaccessible point, instead of working them at home, or marketing them at the easier port of Swansea.

ing a "carga," or three hundred pounds, at a load. Notwithstanding this, I am assured, by an employee of the Company, that the gains of the Company, for the past three years, have been over half a million dollars. Now that their mines are opened thoroughly by extensive galleries, and large bodies of metal exposed to view, the expenses of getting out the ore is materially lessened, and as the work goes deeper the quality is improving.

THE TRIUNFO COMPANY.—The adventure of MR. FLORES proving a great success, DON RAMON NAVARRO, afterwards Governor of the Territory, visited San Francisco, to sell some of his own mines near the old town of Triunfo, in the San Nicolas ledge. The TRIUNFO COMPANY is the result of this visit. JUDGE ALEXANDER McELROY, a miner of Mariposa, was sent down with NAVARRO, and his report determined the formation of this Company, and the purchase of the *Sante Fe*,* *El Carmen*, and *Valenciana* Mines, to which were afterwards added the *Mendoceña* and

* The Santa Fe mine has since been merged with the Valenciana.

Triunfanta. This Company determined to work their ores, and at once commenced the erection of a mill, which, though too small, is now in successful operation. The *Mendoceña*, the smallest of these mines, has a fine body of metal "in sight," and which is increasing daily, both in quantity and quality.

Besides these two Companies, which are first in importance on the Peninsula, there are several others worthy of notice; and

FIRST.—The *Franco-American*, owning four good mines, *to wit*, the *Nacimiento*, *Guasava*, *Ocote*, and *Franco-Americana*, together with a beautifully situated *hacienda* of seven acres in extent, skirting the town of San Antonio, which has already extended itself to the boundary line, and must soon spread over it. At this *hacienda* the Company have some works out of repair, there being no capital to renew them, or even to work the mines properly.

SECOND.—The *Peninsular Company*, owning the rich *Santa Cruz* Mine. This mine is situated in a deep valley, and its main shaft is sunk at the bottom of an

aroyo, so low that its pumps drain the adjoining country, stopping the fountain in the great plaza of San Antonio. This makes it expensive to work, but it is producing some of the most beautiful "brilliant" metal to be found anywhere; specimens of which I brought with me from the ground.

THIRD.—The *San Jose*, an enterprising San Francisco Company, who are opening their mine in the most substantial manner, with "great expectations."

FOURTH.—The *Kohler Brothers Company*, working the *Espinoseña*, and producing splendid metal.

FIFTH.—The *Allemania Company*, with the *Fortuna and Permanencia* Mines, both of excellent repute, and well situated. The *Pecacho*, with a small mill. The *Maria*, in fine metal, and doing well. The *Soledad*, of Boston, the *Mexico-California*, of New York, and now the *Molineña*, of Philadelphia. There are good mines, perhaps as good as any of those named, awaiting capital, such as the *Maroneña*, *Confidencia*, *Codicia*, *San Bartolo*, *Prieta*, *San Migel*, *San*

Antonio, Ophir, and others. The undeveloped mines of the region are all in the hands of men without capital, enterprising adventurers, or native Mexicans. There are just about a hundred discovered mines there, many of them in good azogue metal, but without a single custom mill to work them. They are waiting the patient influx of capital to build them a large mill of a hundred stamps, which would give them an ample market for their ores. They are praying for such a God-send, and say that it would set a thousand miners to work.

CHARACTER OF THE ORES.—

The character of the silver ores of this region is classified as *Petanke*. They are sulphuret of silver, mixed with iron, copper, lead, and zinc, with an admixture of antimony and arsenic, which are rebellious in working. They have to be got rid of, or the silver will not amalgamate. This is effected by roasting, and the use of salt, which I shall now endeavor to explain.

MANNER OF REDUCTION.

—After the ores are perfectly assorted, they are thrown under stamps, and pulverized

as fine as dust. In this state they are passed by elevators to the ovens, where they are literally roasted, by stirring in a very strong flame, emitting an arsenical odor, most offensive and unhealthy.—About ten per centum of salt is stirred in during the roasting, to reduce the sulphurets, antimoniates, and carbonates to chlorides. After roasting, the purified mass is conducted into large revolving receivers, called barrels, with water and scraps of iron—the latter to bring the chloridized silver into the condition of metal. About a thousand pounds of quicksilver is next added to each barrel, which amalgamates with the silver, and the two settle together at the bottom of the barrels. In this form it is called “amalgam,” and is four or five parts quicksilver to one of silver. The retort afterwards evaporates the quicksilver, which is returned without much loss, and the remainder is *bullion*.

There are other modes of reduction, but this process, known as the “Freyburg process,” is at present in use, though I am inclined to think a few years experience will work changes favorable to economy

CONCENTRATING.—A process for “concentrating” ores has been introduced lately, by which the crude constituents are driven out, and \$50 ores made worth \$200. Such a process would render unnecessary the erection of mills, as all ores could then be made fine enough to export. The perfection of the invention would quadruple the value of mining property in Lower California. Her mines, lying so near the coast, and consequently convenient to the markets of the world, would derive advantages from such an invention which would be incalculable.

As it is not probable, however, that such an invention will immediately succeed, or, at best, without losing a good part of the precious metal in the process, it still leaves the question of a mill one of great importance to a Company with plenty of ores.

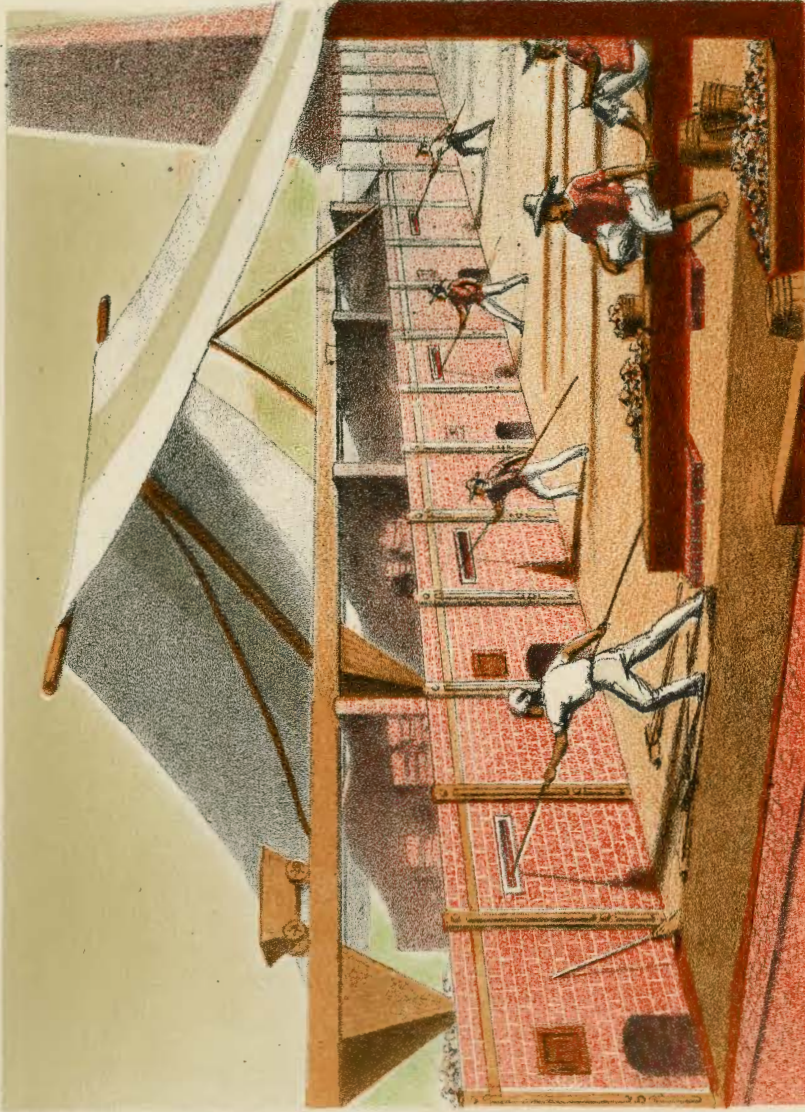
ADVANTAGES OF A MILL.—The advantages of beneficiating the lower classes of ores on the spot are obvious. While it is undoubtedly a great recommendation to a mine, that it is convenient to navigation, which permits the shipment

of the best ores, it is nevertheless true that there is a large proportion of all ores which cannot be shipped at a profit, but which may be *worked* to a great profit. For proof of this, I refer to the report of MR. HENRY S. BROOKS, following this. An argument will also be found on the other side of the question, in the letter of PROFESSOR PRICE, of San Francisco. Both of these gentlemen are right. There are qualities of ores which will pay best to *ship*, and there are qualities that will pay best to *work*. MR. PRICE unintentionally acknowledges this, in stating that there is no need of shipping ores worth less than \$150 from Lower California. He pays a high tribute to the quality of those ores in this remark; but he does not tell us what to do with all the ores which fall below that value. Ores that will assay \$200 to the ton may be shipped to Swansea to advantage, because they can be worked closer there than with us at present; while \$50 ores, which constitute the great bulk of the product, would all be absorbed in expenses of carriage and commissions. Without a mill, all the latter class of ores would have to be thrown aside as valueless.

With a mill, they can be worked, and pay a profit of \$20 to \$25 per ton.

ECONOMY OF MILL.—A mill of 30 stamps is more economical than one of 20 stamps; provided you have a sufficiency of ores to keep them busy. The additional cost of running a mill of the larger number, is scarcely more than running one of the smaller. The same engine, only a little larger; the same engineer and assistants; the same firemen; the same amalgamator and assistants, etc., etc.

WHAT 30 STAMPS WILL DO.—A mill with 30 stamps will reduce 25 tons of dry ores per diem; and if there should be sufficient lead in them, as there probably is in the ores about *Triunfo*, 10 tons more may be *smelted* in the same works. The expenses of beneficiating these 35 tons will be, say, \$20 — the mining and et ceteras, \$10 more — making the total cost \$30 per ton. Now, if your ores fall below the average of \$60, and reach but \$50, you will still realize a net profit of \$20 per ton, or \$700 per



L. Hortine Lith. 682 Chestnut St. Phila.

FURNACES OF THE TRIUNFO WORKS.

day. In this calculation I have allowed nothing for stoppage of mill for repairs, or accidents. Allow one-seventh off for these contingencies, and you still have a net return of \$600 per day, or \$219,000 per year, with a mill of 30 stamps, which is \$7,300 profit per annum for each stamp. It will be easy now to calculate the product of a mill of any given size, as each stamp will certainly earn \$7,000 per annum. I have never seen an estimate so low as this, and therefore submit it without hesitation. A 100 stamp mill will yield \$700,000 per annum, if there are sufficient ores that will work \$50 per ton to keep it busy.

CUSTOM WORK.—I would advise a *large mill*, and that it be built for custom work. If you have not sufficient ores from your own mines, there are more at hand that can be bought lower than they can be mined; as also quantities that would be sent in by miners of small means. Small miners would be increased if there was a good custom mill there, as many are now deterred from work because they have not enough ores to

ship, and have no other means of realizing. A custom mill would build up the whole country, and realize greater results to its projectors than *any mine* could do *without a mill*.

COST OF MILL.—The following will be about the cost of a mill of 30 stamps, which will reduce 25 tons of silver ores per diem, *to wit*:

ITEMS.	Cost in San Francisco.
6 Batteries of 5 stamps each, .	\$6,000 00
15 Randall & Wheeler's Pans, .	7,500 00
7 Separators,	2,500 00
1 Fifty-horse Power Engine, .	3,500 00
1 Boiler,	2,000 00
Counter-shafting and Pullies, .	800 00
Retort for 1,500 pounds amalgam,	400 00
Piping,	200 00
Transportation from San Francisco,	2,000 00
Mill House, Furnaces, and Putting up,	20,000 00

Additional.

Assay Office and Apparatus, .	1,500 00
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Residence for Amalgamator and	
Agent,	1,500 00
Out-buildings,	1,000 00
Mules, Wagons, and Accoutrements,	2,000 00
	<hr/>
Total in coin,	\$51,300 00

SILVER MINES AS AN INVESTMENT.—As an investment silver mines have the preference over gold mines, inasmuch as their lodes can be relied upon with more certainty. A mine situated upon the main lode of a productive region, and properly managed, will generally prove a success. To secure this result, however, the work should be under experienced and skillful management. The disposition of the age is to realize profits without *legitimate* effort. Ignoring the admonition of Holy Writ, that in the “sweat of his brow shall he eat bread,” man cannot, in these days, wait the slow motions of honest labor. In silver mining, he MUST wait, and he must exercise the same careful attention which all legitimate business requires, when he will as certainly be rewarded as in any business whatever.

In proof of this statement, the *Gould & Curry* Mine of Nevada realized in gross \$7,200,000, netting \$4,500,000 in a single year.* The "*Mexican Claim*," though but 100 feet in length, has produced millions. It is not known how much, because the mine is owned by a few individuals, who make no report of results, though its gains are notorious. The *Cholar, Savage, Potosi, Yellow Jacket, Ophir*, and others, whose history is familiar to every well-informed Californian, have divided large sums, sending altogether \$55,000,000 in a single year to San Francisco.

MR. WARD, in his "History of the Mexican Mines," estimates the annual product of some of the principal ones, as far back as 1830, to have been as follows, *to wit* :

The Real del Monte (English),	\$2,500,000
Bolanos (Mexican),	2,000,000
Anglo-Mexican (English), . .	3,700,000
United Mexican (Mexican), .	3,000,000

Now when it is considered that these mines were mostly worked without the

* From their report of 1863.

advantages of modern machinery, and with very crude knowledge of metallurgical science, as it is now understood, it proves what silver mines are capable of doing, if worked with patience and skill.

A QUESTION.—In conclusion: If mines may be made so productive, why do we not hear of more successes?

ANSWER.—FIRST.—Because new Companies formed in the East have not had time to develop their property. There are few of these which have had an existence of more than a year or two. A well-situated mine may be “opened” within a year, but not sufficiently to make it immediately profitable. A single shaft, reaching into the largest body of metal, will only admit of the working of a few men. Many openings must be made with galleries and adits, &c., to admit of a large number of miners, before great results can be expected.

—YOU MUST WAIT.

AGAIN.—It may be said, of gold mines especially, that the most successful of them have been and are worked by private firms, who have no constituents, and consequently

have no object in making reports. It is safe to say that there are scores of individual miners in California who possess great wealth, without being known beyond the limits of their own neighborhood.

AGAIN:—Many good mines *languish* for the want of liberal capital to work them properly. Incorporated Companies, situated far from their property, and not knowing its value, often become tired of being assessed, refuse to pay up, the work stops, and all that has been expended is lost, the Company ruined, and a good mine perhaps prejudiced. The hand once to the plough, it should not be turned back without good cause.

Silver mines are not likely to prove profitable to *poor men*, therefore, nor to the mere speculator, for the same reason, *to wit*, that both must realize immediately.

The first for his need,
The second for his greed.

Both these will fail, while the legitimate miner, in earnest in his work, will almost always succeed.

Respectfully submitted,

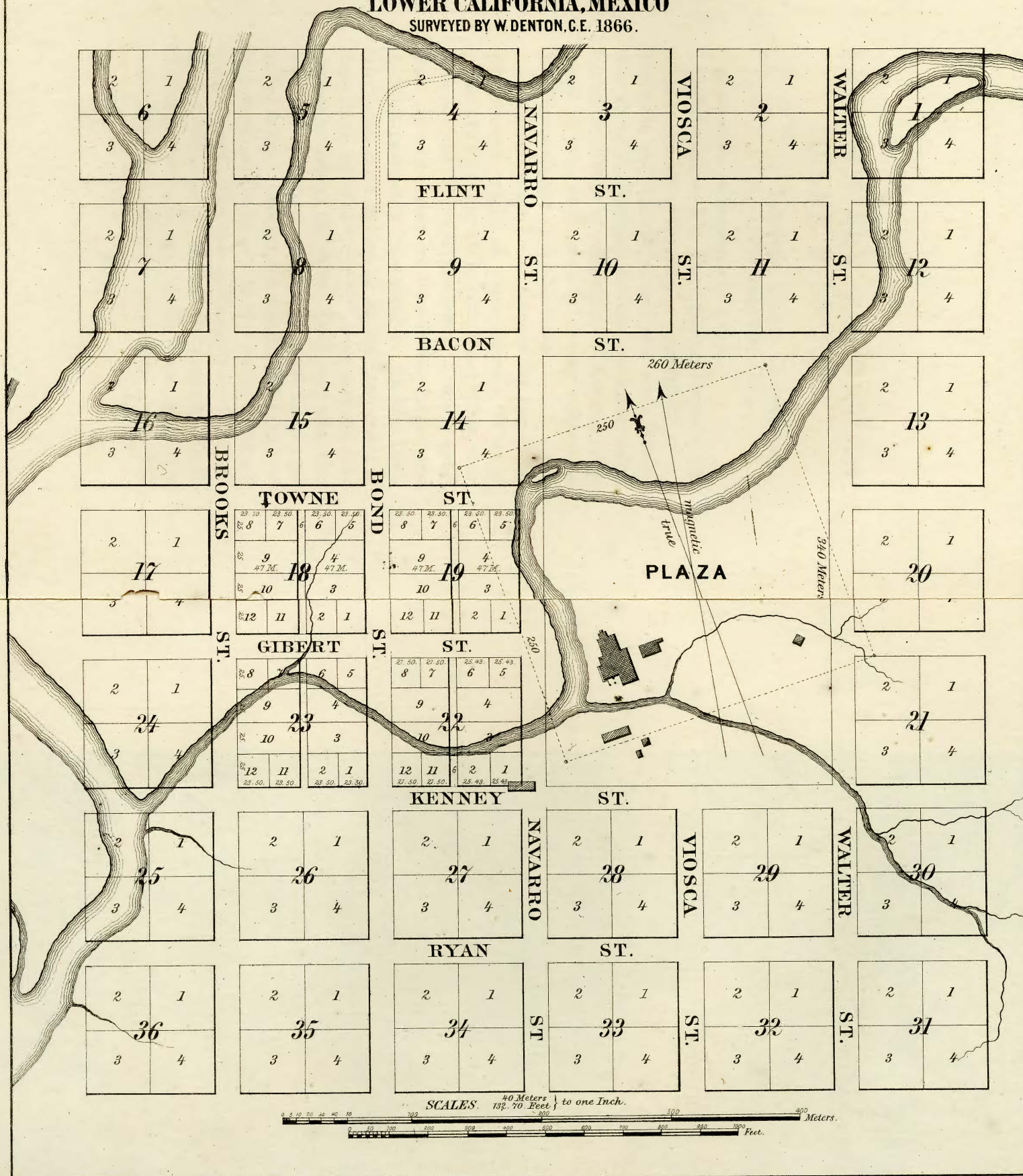
L. MONTGOMERY BOND.

At Sea, April 1, 1865.

PLAN OF TRIUNFO CITY

LOWER CALIFORNIA, MEXICO

SURVEYED BY W. DENTON, C.E. 1866.



PRELIMINARY REPORT OF HENRY S. BROOKS.

TRIUNFO, LOWER CALIFORNIA,
February 8th, 1865.

To the Subscribers to the Molineña and Canoa Mines.

GENTLEMEN :—Mr. Bond having formally signified to me his acceptance, in your behalf, of the Molineña and Canoa Mines, and work having been already vigorously commenced upon them, I take the liberty of offering a few remarks, suggested by long experience in mining matters on this Peninsula and Alta California.

In the first place, I wish to convince you of the richness and extent of these mines. When I assure you that they are as rich, if not richer, than those of the Triunfo Company, I say a great deal. In extent they are considerably larger, and therefore practically inexhaustible. As Mr. Bond brings you such evidences as are procurable of these facts, and doubtless will enter into the fullest details concerning them, I will only add, that the most competent and experienced miners are united in the belief that this district is unsurpassed in mineral wealth by any in the world, Washoe* not excepted. The ores of the celebrated "Comstock Ledge," on which are situated the Gould & Curry, Ophir, Savage, North Potosi and other world-renowned mines do not average over \$60

* Nevada.

per ton. The available ores of this region average over \$100. Here, ores averaging \$60 and even \$70 per ton have been thrown aside, for the reason that, until very lately, all the metal was shipped to Europe, via San Francisco, for reduction, at an expense of \$60 or more per ton. The Triunfo Works are the only ones, at present, complete in the Territory, and these are totally insufficient for the reduction of their own ores. In consequence, the shipping process still continues, and thousands of tons of valuable metal are thrown aside as worthless.

The great drawback to the prosperity of these mines is then evident. The natives are poor. Those mines which are being worked with any vigor, excepting always those of the "Great Mexican Company," are in the hands of San Francisco men, of a calibre utterly insufficient to meet the expenditures necessary to the development of a first class mining operation. Superintendents are beset with debt and difficulty from the very outset. In a month or two the companies become clamorous for dividends, and the mine is often ruined in order that a few dollars may be realized from the shipment of ores, long before the works are fully opened.

One of the first questions for you to decide, at an early date, will be this matter of the shipment or reduction of metal. Mr. Bond has, I believe, industriously collected all the facts pertaining to this subject. Here I will state simply the expense of

either process. That of shipment is \$50 per ton, at least; that of reduction, with a mill of twenty-five stamps, would be \$15, at most. I make these statements confidently, having fairly tried both methods. I have also seen all the papers of Don Conrado Flores (Superintendent Great Mexican Company) on this subject. We have been over the matter together several times. His expenses of shipment, with very rare facilities, shipping direct from La Paz, amount to \$48.75 per ton on an average. In fact it is merely a question of capital; there is not a mine on the main lode but could work a mill to great advantage.

Should you conclude to erect a mill, it would be well to have one somewhat larger than that which the Triunfo Company has at present. It consists of ten stamps and four furnaces only; the engine being of sufficient capacity to run twenty-five stamps. The remaining batteries it is the design of the Company to complete at an early period. For a company about to build, I think it would be better policy to complete a mill of twenty-five stamps at once. Such a mill would reduce twenty tons per diem. A work of this magnitude would not be complete without a smelting furnace. A portion of the ores contains sufficient lead for smelting, and this proportion will, in all probability, constantly increase, as depth is attained. A furnace capable of reducing ten tons per diem would be ample. This would make the total capacity of the works

thirty tons a day. The smelting process is much cheaper than that of amalgamation; while at the same time a superabundance of lead metal always occasions serious difficulty to the amalgamator. The advantages of erecting a furnace are therefore obvious. While speaking of machinery, I would mention that, in my opinion, it would be advisable at an early day to open an engine shaft on one or both of the mines. It is true there is plenty of metal for years to come, in either mountain, but at the same time the mines would never be opened in first class style without works of that nature. A nominal twenty-horse power engine would be amply sufficient for both hoisting and pumping in a shaft of the kind, besides leaving a reserve force in cases of emergency.

If the Company decide to erect a mill, I would respectfully urge the advisability of having it built at San Francisco, under my own superintendence. San Francisco mechanics understand the requirements of metallurgists better than Eastern millwrights. You will see the importance of this matter more fully in view of the fact, that of all the mills erected for the reduction of these metals that of the Triunfo Company alone has been completely successful. With some few modifications, the principle adopted by them would be perfect, and with the experience which we have had, we could build works for the Molinaña and Canoa which would be superior to anything on the Pacific coast.

I have taken it for granted, that the Molineña and Canoa mines will be consolidated into one company. The advantages of such a course are so obvious to us here, that I have involuntarily treated it as a foregone conclusion. One mill, one superintendent, one captain, one office, &c., &c., will answer for both mines, and, as for their respective merits, one might well hesitate which to choose, the Molineña or Canoa. The former has a shaft down about ninety feet. It is in a very fine quality of "fire-metal" already. In order that Mr. Bond might be fully satisfied of its value, and that you might have tangible evidence of the wealth of your mines, I worked one ton of ore of first quality, from this shaft, in the mill of the Triunfo Mining Company—the working assay per ton was \$173.42; also, one ton of second quality of ore from the same, averaging \$90.48; also, one ton of "asoga" metal (chloride) from the Canoa, averaging \$105.56. The bar Mr. Bond brings with him.

I was given to understand that it was originally proposed to open the mines by contract, Mr. Gallaher having offered to do so on behalf of our firm, the Molineña for \$18,000, or the Molineña and Canoa for \$27,000, in gold. As Mr. Bond did not seem to favor this proposition, I fell in with his views on the subject instantly, the more readily that his objections were reasonable and just. Subsequently Mr. Bond did us the honor to select Mr. Wheeler, my partner, as a most

suitable person to reside here, acting as General Agent and Superintendent of the Company's affairs on the Peninsula. I must express my belief that the choice will prove a most fortunate one. Mr. Wheeler is a thorough mining engineer, a metallurgist, and a thorough business man. To these qualifications he adds that of being a finished Spanish scholar. The interests of our firm on the Peninsula are now of sufficient magnitude to induce us to consent to Mr. Bond's proposition. Mr. Wheeler will leave San Francisco as soon as possible; in the mean time I will myself take charge of the Company's affairs.

I submit a rough estimate of the probable outlay for the first three months—in gold of course:

Erection of forge and tools,	\$500
Candles, twenty-five boxes, \$125; Powder, ten kegs, \$100,	225
Captain of mines, three months' salary,	300
Blacksmith, " " " "	300
10 American miners,	2,750
12 Native " " " "	1,400
Freights, duties, &c.,	150
Lumber for buildings,	250
Timbers and scantling for mines,	200
Reducing three tons ore,	100
Survey,	150
Incidental expenses,	500
Superintendent's salary,	1,500
	<hr/>
	\$8,325

Respectfully yours,

HENRY S. BROOKS.

I have omitted to mention in my letter, that Mr. Bond has exerted himself unshrinkingly and constantly, in order to obtain reliable information as to the Peninsula and its resources. The task falling to the lot of an agent, forced to do so much in such a limited period, is a most severe one. Mr. Bond takes with him a fund of information, practically illustrated, which I trust will be appreciated by his brother members of the Board.

HENRY S. BROOKS.

LA PAZ, Feb. 18, 1865.

In a subsequent letter from Mr. Brooks, he estimates the amount of ore "in sight" in the Mendoceña mine, to be about 5,500 tons, and states that the vein is increasing in all the galleries running both north and south from the main shaft.



LETTER OF PROFESSOR PRICE, OF SAN
FRANCISCO, METALLURGICAL AND AN-
ALYTICAL CHEMIST.

SAN FRANCISCO, *March 11th*, 1865.

L. MONTGOMERY BOND, ESQ.

DEAR SIR:—I am in receipt of your communication of the 9th instant, referring to the value of the Silver Mines of Lower California. I shall take very great pleasure in giving you all the information I may possess, on this subject. 1st. The position of these mines to water transportation is of very great value to mining interest in this district. The quality of the ores is not equalled, and certainly not surpassed, in any district yet discovered on this coast. The abundance of comparatively cheap labor is another very great consideration. 2d. I am of the opinion that you will find it greatly to your advantage and much more profitable to ship your ores under advances, or on your own account. Necessarily there are very heavy expenses always attending the opening of metalliferous veins, but when to this is added the expenses attending the erection of a suitable mill to *beneficiate* your ores, the expenses are heavy indeed. It is in this department, also, that great skill and information is wanted. Your success in this case will not depend so much upon your mine, as it will upon the skill of your millmen.

We have a large number of mines in California and Nevada, to-day, containing abundance of good and valuable ore, but they are not able to extract the gold and silver with a profit.

By having your ores shipped you need employ but few men requiring very high wages ; and until your mine is well opened one general superintendent is necessary. By shipping direct to Swansea, rather than San Francisco, you would save, at least, some \$12 to \$15 per ton.

3d. Ores assaying 50 oz.* silver per 2,240 lbs. could be shipped to Swansea, but it would be much more profitable for you to have them well selected, so as to assay, at least, 100 oz. silver per 2,240 lbs. The reason of this is evident, as it costs just the same freight for one ton of 50 oz. silver, as it does of a ton containing 100 oz. silver. But this is not the only advantage. Smelters will pay for each 1 oz. of silver in the ore, when it assays 50 oz. silver per 2,240 lbs., only 86 cts., but will pay \$1.12 per each 1 oz. when it assays 100 oz. per 2,240 lbs. You have no need to ship ores that will assay less than 100 oz., and indeed I may say not less than 150 oz. to the ton. Nearly all the ores shipped from this point has been shipped from San Francisco under advances from me, and it is uniformly assayed from 70 oz. to 250 oz. silver per 2,240 lbs., and had it not been for bad assortment at the mines I would not have to report you of anything assaying so low as 70 oz. in the shipments thus made. The grossest neglect had taken place, as the ore was mined with the gangue which contained no metal. From the large number of assays I have to perform before making advances on these ores I am able to give information that is reliable. My assays are not from selected specimens, but at all times an average sample taken from 10 to 70 tons of ore.

Ores that would assay 100 oz. silver per 20 cwt., would sell in Swansea for \$112 per 21 cwt. Upon this I would advance you \$70 per 21 cwt. Cost of laying

* The oz. of silver may be calculated in round numbers at \$1.25.

down at Swansea, including freight, insurance, interests on advance, about \$25 to \$26 per 2,240 lbs.

200 oz. silver per 20 cwt., price at Swansea \$224 per 21 cwt., would advance 150 per 21 cwt.

300 oz. silver per 20 cwt., price at Swansea \$360 per 21 cwt., would advance \$280 per 21 cwt.

All the ore I ship is shipped to Messrs. Townshend, Wood & Co., Swansea, or to Messrs. Biddulph, Wood & Jevons, Liverpool, who will be very glad to furnish you with any further information on the value of silver ores.

Should you determine to ship your ores through me, I can, if necessary, arrange so that all moneys will come to your hand in New York, Philadelphia, or Boston, direct from England.

I shall be glad to be able to furnish you with any further information on these mines, and keep you well posted as to what is doing.

I remain, sir,

Yours most respectfully,

THOMAS PRICE,

Metallurgical and Analytical Chemist.

Agent for Messrs. Townshend, Wood & Co., Swansea, Ore Importers.

TRIUNFO, 10th mo. 2, 1865.

L. MONTGOMERY BOND, Esq.

DEAR SIR—The ore received here at the works of the Triunfo Gold and Silver Mining Company consisted of

I. Ore from the Molinefia.

2,000 lb.	No. 1. Assaying per ton,	\$173.42	\$173.42
3,000 "	No. 2. Assaying per ton,	90.84	135.72

II. Ore from the Canoa.

1,000 lb.	Assaying per ton	105.56	52.78
6,000 "			<u>\$361.92</u>

Which yielded by amalgamation—

1 bar of silver,

Weight, 255.15 oz.

Fine, .970

Value per oz. \$1.25.41

*\$319.98

To this sum of \$319.98, as the yield of three tons of ore, \$5 ought to be added, for the value of four ounces of silver you took as a specimen.

The works of our Company are not fixed for working or reducing on such a small scale, and the result would therefore be even more favorable, if larger quantities had been treated, but even as it is now, I consider it a very flattering proof of the richness of ore from those mines; the ore of the Molinefia having the same amount per ton and richer, even sometimes, than the Mendocefia—our best mine.

Hoping to see you soon return to this wild region, and sending my best regards, I remain

Yours truly,

GUSTAV YUNGJOHANN,

*Sup't Reduction Works of the Triunfo G. S. M. Co.,
Lower California.*

* Assay value, - - - -	- - - -	\$361.92
Value of bar, - - - -	\$319.98	
Specimen taken, - - - -	<u>5.00</u>	<u>324.98</u>
Loss by working, - - - -		\$36.94

Or about 10 per cent. upon the assay.

L. M. B.

CERTIFICATES.

We, the undersigned, residents of Lower California, and familiar with the topography and mineral resources of the districts of San Antonia and Triunfo, declare it as our opinion that the Molineña and Canoa Silver Mines of the Triunfo District have the main lode of the region, and are among the best mines of the Territory.

TRIUNFO, *February 15, 1865.*

F. GIBERT,
Gobernator de la Baja California.

F. B. ELMER,
United States Consul, La Paz.

ALEXANDER M'ELROY,
Superintendent Triunfo Mining Company.

JAS. VIOSCA,
Agent Wells, Fargo & Co., La Paz.

WM. DENTON,
Government Surveyor of Mines, &c., San Antonio.

RAMON NAVARRO,
HENRY S. BROOKS,
Sec'y and General Agent Triunfo Mining Co., Triunfo.

GUSTAVUS COX,

Mining Engineer, San Antonio.

F. ERNST,

Sup't of Franco-American S. M. Co., San Antonio.

HENRY P. MACNEVIN,

Sup't Kohler Brothers' Silver Mining Co., San Antonio.

G. YUNGJOHANN,

Metallurgist and Assayer Triunfo Mining Co., Triunfo.

JUAN JOSE LOPEZ,Collector of La Paz. *Authorized signature.***CHRISTOPH SCHMITZ,**

Sup't of Maria Silver Mining Co., San Antonio.

R. C. JACOBS,

Superintendent Solidad & Sta. Gertruda, San Antonio.

JOSE MA. GOMEZ,

Triunfo.

THEO. BRONN,

Ass't Metallurgist and Assayer Triunfo Mining Co.



THE FOLLOWING *is received just as our report goes to Press; and is thought of sufficient interest to incorporate into it, as showing that there is auriferous as well as argentiferous wealth on the Peninsula.*

EXTRACT FROM THE REGULAR MONTHLY REPORT OF M. ALLISON WHEELER, *Agent and Manager of the MOLINEÑA AND CANOA MINES, NOW THE PROPERTY OF THE TRIUNFO COMPANY, DATED LA PAZ, FEBRUARY 15TH, 1866.*

OUR MINES are looking splendidly, and I am getting beautiful metal.

ON MONDAY I made some assays to prove those made in December previous to my leaving for *San Francisco*. The result was as follows: First specimen \$277.16 per ton. Second specimen \$273.39, mean \$275.27. This is within a fraction of my former assays, and is not from selected specimens, but from half a dozen pieces taken at random from the dump. I dare say that an assay made from a more perfect sampling will lower this by ten to twelve per cent. I shall take such a sample and make assays as soon as I can get the ore down into my yard. As I wrote you before, the metal now coming out is very like that taken from the *San Nicholas* mine of *Flores*.

I CAN ASSURE YOU I have the highest opinion of the Molíneña Mine. The metal is improving as we go deeper in the hill.

BUSINESS HERE on the Peninsula, never looked better than it does to-day, and those mines which are being worked show splendidly. The *San Joaquín* has fine metal. The *Mendoceña* never had better than they are now getting out. The *Santa Gertrudas* is also yielding fine metal. Mr. Kohler, of "*Kohler Brother's Company*," former owners of the Espinosa Mine, has struck beautiful metal in his new mine called the *San Ambrosio*. It is splendid chloride, like the ore in the *Cacachillas* district; and there is every indication that he will presently have a body of *antimonial silver*. ["RUBY SILVER!"]

SOME EXCITEMENT prevails here now on account of *placer gold diggings* recently discovered; and many men are now busily engaged washing gold in the neighborhood of *Las Gallinas*, and "the Junta," about fourteen miles southwest from *Las Cascitas* (TRIUNFO.)

I FORGOT TO INFORM YOU also, that there is a large vein of *Quartz*, GOLD BEARING, running directly through our *Sitio* on the *Aroyo Honda*. I am anxious for the receipt of funds lest some one else should discover and denounce it before me.

(Signed,) M. ALLISON WHEELER,
Agent and Manager.

LETTER OF MESSRS. RICHARDSON & Co.,
SWANSEA, ENG., ON THE SHIPMENT OF
SILVER ORES.

COPPER ORE WHARVES,
SWANSEA, *Nov. 25th*, 1865.

L. MONTGOMERY BOND, ESQ.

President Molineña S. M. Co. of L. California, Philadelphia.

DEAR SIR :—We are very much obliged to our mutually esteemed friend, Mr. E. Bates Dorsey, for referring you to our firm, and we beg to assure you, that so kind an introduction shall meet with every attention at our hands.

In reply to your inquiry about the cost of shipping silver ores from La Paz, Lower California, to Swansea, it is our opinion that freight could be obtained at, say about £4 to £4.10 per ton; and, after arriving here, the charges for landing, weighing, preparing for sale, sampling, assaying, warehouse rent, delivering to purchasers, dock dues, and all other charges against the ore, would be covered by about 21s per ton of 20 cwt. English; viz., 2,240 lb. Our commission for sale and guaranteeing payment, would be 1¼ per cent., and there would be no further charges that we know of, in any shape; and you will see, therefore, that the cost of sending these ores from La Paz direct to this market, and all expenses of freight and charges, including guarantee, would certainly not exceed \$30 per ton.

On the arrival of the ore here, we land it in our warehouse and crush it to an impalpable powder, for the purpose of obtaining a perfectly correct sample of the

ore. We then sample it in the presence of any parties who intend to bid for it, and who receive notice from us to attend.

The sampling is superintended by our own Assayer and Sampling Agent. Samples are then taken by each of the parties, which are assayed by their respective chemists, and written tenders sent in for the several lots into which the ore is divided; when the highest bidder is declared the purchaser, and receives notice from us, with a statement of all the other bids, on a form, a copy of which we enclose, and by which you will see the result of our last sales of silver ores, and the price, per ounce, of silver contained in the ton of ore.

We also enclose the last circular issued by Messrs. Sharps & Wilkins—a standard house—giving present prices of silver, &c.

With regard to gold contained in ores, we have had very little auriferous ores for sale. The smelters, however, have always allowed a fair price for the gold, when worth extracting. We pay freight, if required to do so, and recoup ourselves on realization of the ores, charging the same in account sales, together with a commission on amount so advanced of $2\frac{1}{2}$ per cent.

We have several ships of our own, which usually trade to the west coast, and if you liked to make a trial of one cargo, we would be happy to arrange for one of our ships to go to La Paz. We think that a fair freight home would be from £4 to £4.10 per ton of 20 cwt.; but we would like to know what sort of a port La Paz is, and what charges the ship would be subject to; also whether you could take a cargo of coals at La Paz, and, if so, whether the best Welsh steam coals, or the best Welsh binding or smelting coals, would suit you best. We could deliver them, say on board ship at La Paz, for about £2.5 to £2.10 per ton of 20 cwt.

We shall be glad to send you any books which you may not be able to get in Philadelphia; but we may mention, say "Treatise on Metallurgy, by Frank Overman, published by D. Appleton & Co., 443 Broadway, New York;" "Dr. John Percy's Metallurgy, published by John Murray, Albemarle street, London;" either of which, we think, you will be able to procure in your place. They give a great deal of useful information, such as you would value.

We do not know of anything further to add, but our best thanks for your kind communication, and that your wishes shall always meet with our prompt and ready attention; and in kindest regards to our excellent friend, Mr. Dorsey,

We are, dear sir,

Yours, very faithfully,

RICHARDSON & CO.

LETTER OF CIVIL ENGINEER R. A. S.
WOOD, ON THE VALUE OF THE MINES
OF THE PENINSULA.

SAN ANTONIO, LOWER CAL., Aug. 2, 1864.

DEAR SIR,—In reply to your inquiries as to the formation and general features of this portion of the peninsula, and of the mineral resources of this district, I would say:—

1st. That the whole length of the peninsula is formed by a vast mountain range running in a nearly northerly direction, branching at intervals,

forming deep gorges or ravines, timbered by a dense growth* of small hard wood.

2d. The formation is primitive, consisting in the greater part of gneiss, granite, and crystalline slate, pierced at intervals by basaltic or porphyritic shafts.

In the district of San Antonio the mountains split, forming a longitudinal parabola, in the basin of which is situated the town of San Antonio.

The range of mountains lying to the westward of the town are filled with vast and valuable silver lodes, running invariably in the direction of the mountain range; *i. e.*, from north to south. The outcroppings of the lodes are generally decomposed sulphurets, and very ferruginous, containing a large amount of chloric metal, easily worked by the patio process (hence the appearance of many of the old mines, whose surface only was worked by the Jesuits† in former times here); but, as the veins are worked deeper, the ores are found to contain a larger admixture of gold, silver, antimony, arsenic, lead, zinc, and iron; making their reduction here for the present problematical: but experience has clearly demonstrated that the base metal contained in the ores more than pay the

* A mistake. The growth is not dense.

† Mr. Wood falls into a common error. I have the authority of many intelligent Mexicans for saying that the mines of Mexico were never worked by the Jesuits as a class at all.

cost of transportation to Friedberg, in Germany, for reduction.

I have no hesitation in saying that a company who should erect good works on the Friedberg principle here for working of ores, without meddling in the mines, would reap a rich percentage on the investment, and would be able to secure all the ore wanted for the largest class of works.

Such an establishment should be located at the Tuscalama, to render it easily accessible to most of mines, and to secure an abundance of fuel and water.

The mines at present farthest advanced are the San Nicolas and the San Pedro, belonging to the Mexican Company.

This company was organized in 1858, and the management intrusted to Mr. Flores, a graduate of the Mexican Mining College. A fund of forty thousand dollars was placed at his disposal for prospecting and opening such mines as he might select. Some fifteen mines were located, and the two above mentioned were worked. In July, 1863, the books of the company showed that the working to that period had cost about sixty thousand dollars, or twelve thousand dollars per year, and the receipts for ores shipped to Friedberg had been six hundred and eight thousand dollars. The year of 1864 will show a much larger sum, as the mines are more thoroughly opened, and the ores are much richer, than formerly.

Besides the ores shipped by this company, they

have several thousand tons of ore in stock that will work fifty dollars per ton here, but would not pay for transportation.

The San Pedro has a vein in the lower drift of seven feet to nine feet for the whole length of drift, and apparently increasing.

The San Nicolas has a vein of forty feet of metal, but in working it they did not observe a proper amount of caution in timbering, and the mine became unsafe, and work has been stopped and new works commenced to reach the vein.

Next in importance are the Triunfo Works, belonging to a San Francisco company. The mines are El Carmen, La Mendoceña, and La Valenciana; each of which are opened to good metal, supposed to be the same vein as the Mexican Company.

The mines are fully capable of supplying the works recently erected by the company for the working of their ores. The capacity of these works is about forty tons per week, but easily enlarged to one hundred and fifty tons per week. Adjoining these mines are the Maria, now shipping metal, and La Marroneña, also shipping. Intervening these and the Mexican Company are some fifteen mines, two of which have recently been purchased by a Boston company, and are now being worked.

The Codicia mine is in metal in all its shafts on this vein. The Alemania is also on good metal. The Espenosiña, belonging to the Kohler

Brothers' Company, adjoins the San Nicolás, is in metal, and preparations are being made to work it more extensively than formerly. Then follow, on this lode, the Santa Gertrudas, belonging to Flores; and the Ocota, the Guasava, and Nacimiento, belonging to the Franco-American Company; all taking out metal,—the ores of the latter assaying as high as three hundred and forty-eight dollars per ton.

On the parallel vein south is La Gobernadora, now in metal. San Joaquin is an old and very rich mine. The Mini Rica, Ophir, Comstock, and El Pécacho, all being worked. The San José old works in very rich metal, but too much water. The new works have a thirty-horse engine for pumping and hoisting; shaft down one hundred and twenty feet, and now drifting for the bottom of the old works.

The Santa-Cruz Company have also a thirty-horse engine for pumping and hoisting: their works are now in metal.

The Santa Rosa, belonging to a French company, is also in metal.

The Palma is down to metal, but works are stopped, waiting for machinery.

I have never seen a locality where nature had done more than here, but all this rich deposit must lie concealed for want of adequate funds to open them to the light.

There is not a single mine opened in the dis-

trict but will give a working assay of over a hundred dollars to the ton, and range from that to three hundred dollars.

I have the honor to be your obd't servant,

R. A. S. WOOD,
Civil Engineer.

P. S.—It is proper to state that the above testimony to the value of the Lower California mines, by a very able civil engineer, was furnished to another Company, organized in New York, and kindly allowed to be used by us.



CHARTER OF THE COMPANY.

AN ACT TO INCORPORATE THE TRIUNFO SILVER
MINING AND COMMERCIAL COMPANY OF LOWER
CALIFORNIA :

SECTION I. *Be it enacted, by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in General Assembly met, and it is hereby enacted by the authority of the same :* That L. Montgomery Bond, George S. Replier, J. Fisher Leaming, Joshua Lippincott, Benjamin Orne, and their associates, be and they are hereby created a body politic by the name, style and title of the Triunfo Silver Mining and Commercial Company of Lower California, and by such name and title shall have perpetual succession, and shall be capable of suing and being sued, impleading and being impleaded, and of exercising all of the privileges and franchises incident to a corporation, and of granting and receiving in its corporate name property, real, personal and mixed, and of holding and improving lands in Lower California, and to obtain therefrom any and all minerals and other valuable substances whether by working, or mining, or leasing, or disposing of privileges to work or mine such land or any part thereof, and to erect houses and such other buildings and works as may, in the opinion of the managers of the corporation, appertain to said business and to

sell and dispose of the same or any part thereof either in fee simple or for any less estate or interest therein at pleasure, or to use, let, lease or work the same, and to dispose of the products of all such lands, mines and works as they may deem proper, with power to the said company to conduct commercial mining and milling business generally in and upon the property of said company, or in the district and peninsula wherein the same is situated.

And with power and authority to said corporation, at the discretion of their directors, to establish an office for the transfer of the stock of said company at San Francisco, in the State of California, and the same at pleasure to discontinue.

SECTION 2. That the said company shall have power to make such by-laws as they may deem proper to enable them to carry out the objects of the corporation, and the same to alter, amend, add to or repeal at their pleasure: *Provided*, That such by-laws shall not be contrary to the constitution of this Commonwealth or the provisions of this act: and to adopt a common seal, and the same to alter at pleasure, and to issue certificates of stock representing the value of their property in such form and subject to such regulations as they may, from time to time, by their by-laws prescribe: *Provided*, That the capital stock of said company shall not exceed two millions of dollars: which said shares of stock shall be as-

signable and transferable in such a way and subject to such conditions as the said company may, from time to time, by their by-laws prescribe; and the said shares of stock shall be for all legal purposes deemed and treated as personal estate, and to regulate and prescribe in what manner and form their contracts and obligations shall be executed.

SECTION 3. That the incorporators named in this act shall elect nine persons to serve as directors of the company, a majority of whom shall constitute a quorum for the transaction of business, and shall hold their offices until their successors shall have been elected in accordance with the by-laws.

SECTION 4. That it shall be lawful for said company to establish the necessary offices for the business of the company wherever their business is located or transacted, and to have their principal office in the City of Philadelphia, in the State of Pennsylvania, in the United States, at which place it shall be lawful to hold all meetings for the transaction of the business of the company.



BY - L A W S .

ARTICLE I.

SECTION I. The affairs of the company shall be managed and controlled by a Board of nine Directors, who shall be stockholders, to be elected annually at a meeting of the stockholders to be held on the second Tuesday in April, between the hours of 12 M. and 2 P. M. at the office of the Company, or at such other place in the City of Philadelphia, as the Board of Directors may appoint; and notice thereof shall be given in two daily newspapers published in the City of Philadelphia, at least once a week for two weeks, preceding said meeting. The election shall be held by two judges who shall be stockholders, to be appointed by the Board of Directors. Each share of stock shall be entitled to one vote, to be given in person or by proxy, executed within ninety days preceding said annual meeting.

ARTICLE II.

BOARD OF DIRECTORS.

SECTION I. The Board of Directors shall hold stated meetings at the office in Philadelphia, on the fourth Tuesday in each month; and special meetings shall be called by the President at such times as he may deem expedient, and at the request, in writing, of any two Directors. Five members shall constitute a quorum for the transaction of business.

SEC. 2. The Board of Directors shall, at the first meeting after their election, or as soon after as may be advisable, elect one of their number President, and one Vice President. They shall also elect a Treasurer and Secretary, a Solicitor and two Standing Committees, viz. :

1. The Executive Committee.
 2. The Committee on Finance and Accounts,
- Each to consist of three members.

SEC. 3. The Board of Directors shall appoint all officers and agents of the Company, designating their duties and compensation, or may confer the power of appointment, in special cases, to an officer of the Company. They may remove any officer, or agent in the service of the company, at their discretion.

SEC. 4. On any question coming before the Board, the ayes and noes shall be taken and entered on the minutes, if called for by one of the Directors, and the call is seconded.

SEC. 5. The Board of Directors may make such rules and orders, for carrying out the designs of the Company, as are not inconsistent with its charter or the laws of the Commonwealth, or the laws and institutions of Lower California.

SEC. 6. Vacancies in the Board of Directors may be filled by the Board, at any stated meeting at which a majority of the existing members may be present.

SEC. 7. Any Director who may disapprove of any decision or proceeding of the Board, shall have the right of recording his dissent therefrom on the minutes, provided the same is done within ten days.

ARTICLE III.

THE PRESIDENT.

SECTION 1. The President shall preside at the meetings of the Board ; in his absence the Vice President ; in the absence of both, the members present shall appoint a chairman. If a quorum be not present within half an hour of the time appointed for the meeting, the members present may adjourn to such time as they think proper.

SEC. 2. It shall be the duty of the President to see that all the resolutions of the Board and of the Committees are carried into effect ; to execute all deeds and agreements ordered by the Board, or any Standing Committee ; to keep in his custody the seal of the Company, and to have placed on record such instruments of writing as are usually recorded.

SEC. 3. The President shall attend generally to the executive business of the Company, under the direction of the Board of Directors, and report the condition of the Company at each stated meeting.

SEC. 4. The President shall be ex-officio member of the Standing Committees, and may call them together, and shall prepare a report of the affairs of the company, to be presented to the Stockholders at the annual meeting, which shall be submitted to the consideration of the Board, previous to said annual meeting.

ARTICLE IV.

THE TREASURER.

The Treasurer shall keep the books and accounts of the Company, with such assistants as may be provided by act of the Board, and in such manner as the Committee

on Accounts may direct; he shall receive and pay out, under direction of the Board, all funds which may be received by him, from time to time, for the use of the Company, and make detailed reports of his receipts and disbursements, at each stated meeting of the Board; shall collect all moneys due the company, and deposit the same in such Banks or other safe places, as the Board of Directors may direct, and the same shall be drawn out only by direction of the President, Vice President, or by the Board of Directors; nor shall the Treasurer give notes, accept drafts, or otherwise pledge the company in any way, save by the direction of the President, Vice President or by the Board of Directors; he shall give a bond for thirty thousand dollars, or such other sum as the Board of Directors may from time to time require, with two or more sureties to the satisfaction of the Board of Directors, for the faithful performance of the duties of his office, and for the restoration to the Company, in case of his death, resignation, or discharge, of all the books, papers, vouchers, money, and evidences of debt in his possession, belonging to the Company.

ARTICLE V.

THE SECRETARY.

The Secretary shall discharge, under direction of the Board or of a Standing Committee, such duties as may be assigned him in the functions of his office.

The offices of Treasurer and Secretary may be held by the same person.

ARTICLE VI.

STANDING COMMITTEE.

SECTION 1. *Executive Committee.* The Committee shall assist and advise the President in conducting the affairs of the Company generally, and act in such cases as may be committed to them by the Board. They shall keep minutes of their proceedings, and report the same to the Board of Directors.

SEC. 2. *Committee on Finance and Accounts* shall attend to the fiscal operations of the Company, and act in such cases as may be committed to them by the Board. They shall keep minutes of their proceedings, and report the same to the Board of Directors. The Committee shall supervise the accounts of the Company, from time to time, and at least once in three months examine the accounts and vouchers of the Treasurer for moneys received and paid by him, and report the result of their examination to the Board of Directors.

ARTICLE VII.

The Solicitor shall advise the Board upon such legal questions as shall be submitted to him for his judgment and direction, and shall have charge of any suits in which the Company may be engaged.

ARTICLE VIII.

No member of the Board, or any officer or agent in any way connected with the company, shall be directly or indirectly concerned in any contract or arrangement for doing any work or furnishing any materials or supplies of any description, for or on account of the company in

any department of its business, or in any way be interested whereby any profit or advantage may inure to him or them in respect thereto.

ARTICLE IX.

SUPERINTENDENT.

A General Superintendent shall be elected by the Board of Directors, and be removable at their pleasure. It shall be his duty to reside at the mines and take charge of all the property belonging to the Company, and to control and direct all labor and business pertaining to the interests, objects, and operations of the Company at the mines; subject, however, as far as practicable, to the direction and control of the Board of Directors; to make monthly returns to the Board of Directors, of all persons hired or employed at the mines and works, and of their wages, and a statement of all expenditures, accompanying the same with the necessary vouchers, (duplicates of which he shall keep,) and a similar statement of ore extracted and forwarded, or reduced, and report the general condition of the mines and works. Should he require funds, he shall make requisition upon the Board of Directors therefor, stating the precise objects for which they are required; if approved by the Board, the money shall be transmitted to him in such mode as they may direct; or he may provide funds by negotiating drafts on the Company to the extent authorized by the Board. The Superintendent shall not have power to enter into any contract or to create any obligation for any amount exceeding in the aggregate the sum of \$5,000 dollars, without the previous authorization of the Board.

ARTICLE X.

MEETINGS OF THE BOARD.

SECTION 1. The President shall take the chair at the time appointed and call the meeting to order.

SEC. 2. *Order of Business.*

1. READING THE MINUTES OF THE PREVIOUS MEETING.
2. REPORTS OF STANDING COMMITTEES.
3. REPORTS OF SPECIAL COMMITTEES.
4. REPORT OF THE TREASURER.
5. DEFERRED BUSINESS.
6. NEW BUSINESS.
7. ADJOURNMENT.

SEC. 3. All reports of Committees shall be in writing, and any member of a Committee dissenting from a report, may present his views in writing, to be put on file.

SEC. 4. Resolutions offered are to be in writing, if so required by any member of the Board.

ARTICLE XI.

SECTION 1. All transfers of stock may be made by the holder thereof, in person, or by attorney, or representative duly authorized; and no person in debt to the company shall make a transfer of stock, unless permission be first obtained from the Board of Directors.

SEC. 2. Any person, persons or corporations, claiming a certificate or evidence of Stock to be issued in lieu of one lost or destroyed, shall make an affidavit or affirmation of the facts, and advertise the same in one or more newspapers in Philadelphia, twice a week, for four weeks, describing the certificate, and shall transmit to the office

of the Company the affidavit or affirmation, with the advertisement, and shall give the Company a bond of indemnity with one or more sureties, in an amount double the value of stock for which a new certificate is required to be issued in order to protect the Company against any damage that may arise from the issuing of a new certificate; whereupon, the President and Treasurer may, one month after the last advertisement, issue a new certificate of the same tenor as the one alleged to have been lost or destroyed, thereon specifying that it is in lieu thereof.

ARTICLE XII.

No alteration or amendment of the By-Laws shall be made, unless presented at a stated meeting of the Board and considered at a subsequent meeting, duly called and notified of the proposed alteration; but any By-Laws may be suspended by the consent of not less than two-thirds of the whole Board, until the next stated meeting of the Board.

