

ENGINEERING and MINING JOURNAL.

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THE Grand Central, of the Tombstone District, Arizona, is said to be a promising mine.

DR. DROWN desires us to say that he was in error in speaking of "Glendon" No. 1 pig-iron in his article last week on the Determination of Silicon. The brand so named should be "South Easton."

VERY favorable reports come from Chrysolite, which, under the new management, has not only paid off the heavy debt left by the "California" administration, but is accumulating reserves in the mine and cash in the bank. The recent fire stopped work for a time.

MR. WALTER B. DEVEREUX, Consulting Mining Engineer, late Superintendent of the Durango Mining Company, Black Hills, has returned to New York, and can be addressed care of HENRY J. DAVIDSON, 231 Broadway.

THE Orion mine, of Arizona, held by a Philadelphia organization, is said to be a valuable property, and one which is likely to advance on the market. This company's ten-stamp mill, it is expected, will be completed within two months.

THE State Line gold mine, of Nevada, we understand, is being placed here. The mine has long been spoken of as a good property, situated in an expensive, out-of-the-way place. Some of the reports which we have recently heard of its enormous value come through interested sources, and should be taken *cum grano salis*.

THE Wall Street Gazette is a compact eight-page paper, in quarto form, designed to serve as a guide to investment and speculation. It is edited by Mr. J. R. REYNOLDS, who brings to his new venture the knowledge and experience resulting from the position which for a considerable period he held as financial editor of the Daily Graphic (with which journal he severed his relations in September last), and to years devoted to practical business on the "street."

MR. JOHN C. F. RANDOLPH, Consulting Mining Engineer, of New York, is on his return to this city from Batopilas, State of Chihuahua, Mexico,

where he has been for over six months examining a number of valuable mines. On his way North, Mr. RANDOLPH passes through Arizona, where he will, no doubt, visit several of the notable mines. His address will be Palace Hotel, San Francisco, Cal., for two weeks. He is expected in New York about the 15th of November.

FROM Harshaw we have conflicting accounts. One report, based for the most part upon information derived directly from the superintendent, says that the mill in its first run produced \$24,000 (assay dollars) of bullion, and in the second and third runs produced \$50,260 in 14 days, and that the mine is looking well. On the other hand, we have information which induces us to renew the advice we gave some time ago, that, at the present prices of the stock, investors should exercise extreme caution.

WE have received the annual report of the Homestake Mining Company, of the Black Hills, and shall next week publish full extracts from it; for it is one of the most specific, elaborate, and satisfactory statements of mining account which we have yet seen. At present, we can give but a few items:

From May, 1878, to September 1st, 1880, the company produced 278,283 tons of ore at a total direct cost per ton of \$3.44-91, distributed as follows: Mining, \$1.31-60 per ton; dead-work, including shaft-sinking and tramway, \$0.36-5; milling in the 80-stamp mill, 153,372 tons, average cost, \$1.30-18 per ton, of which 27-88 cents was for water for the battery and boilers; in the 120-stamp mill, average of 121,910 tons, \$0.77-70 per ton, of which 24-77 cents was for water; ore crushing, \$0.03-72 per ton; sundries, blacksmith, foundry, saw-mill, roads, etc., \$0.67-26 per ton; total, \$3.44-91 per ton. Plant, mill construction, tramway, property purchase, hoisting-works, etc., \$1.63-58 per ton. Dividends, \$600,000, or \$2.15-61 per ton. Average net yield of ore, \$6.78-91 per ton.

This elaborate statement shows the large profits which can be made from low-grade ores, even when the cost of labor and supplies is as great as in the Black Hills, the large quantity treated bringing the cost per ton down to a minimum.

ANTHRACITE COAL TONNAGE.

We have received from Mr. JOHN H. JONES the following statistics of the shipments of anthracite coal:

	Septem-ber, 1880.	Septem-ber, 1879.	Increase.	For Year 1880.	F ar	Decrease.
Philada. & Read. RR....	769,552	707,408	62,144	4,264,434	5,481,950	1,217,525
Lehigh Valley RR.....	497,865	392,302	105,563	3,117,411	3,150,797	33,386
Cent. R.R. of N. J.....	457,632	362,340	95,292	2,476,084	2,776,827	299,144
Del., Lack. & W. RR....	411,673	345,908	65,765	2,530,401	2,754,251	223,850
Del. & Hud. Canal Co..	306,499	277,889	28,609	1,915,337	2,192,533	277,196
Pennsylvania RR.....	208,061	154,591	53,470	1,308,084	1,244,415	*63,669
Pennsylvania Coal Co..	157,362	134,805	22,557	788,371	1,085,074	296,703
N. Y., L. E. & W. RR....	33,834	42,338	-8,504	285,188	355,012	69,825
Total.....	2,842,478	2,417,581	424,896	16,686,010	19,040,868	2,353,958

\* Increase. † Decrease.

The stock of coal on hand at tide-water shipping points, September 30th, 1880, was 685,738 tons; on August 31st, 619,899 tons; increase, 65,839 tons.

It will be observed that the production for September was 2,842,478 tons, or at the rate of over 34,000,000 tons per annum, and it is well known that even this large quantity was produced and carried to market under not the most favorable of circumstances. Vessels were scarce, causing an accumulation of loaded cars at the shipping ports, and a scarcity in some cases at the mines. The ability of the mining companies to produce a great surplus of coal is already a very serious question, as bearing on the prosperity of the trade for some years to come; but if the companies continue to increase their facilities for producing and carrying coal, there will be but a very slight portion of them who can survive the competition that must inevitably come sooner or later.

The shipments of anthracite coal for the first nine months of this year aggregate 16,686,910 tons, or at the rate of 22,250,000 tons per annum. If the companies should work nearly full time for the remainder of the year, as some think they will do, the shipments would reach about 23,500,000 tons. This output, with a fairly cold winter, should not materially disturb next year's business.

The column of increase and decrease of production for the first nine months of this year, as compared with the corresponding period last year, illustrates several facts: First, that the Reading Company was working for tonnage last year, and that, when operating only its profitable collieries, it can not hold the position of a producer which it once assumed; secondly, that the Lehigh Valley Railroad has some grounds for its claims for a higher percentage of production in the old combination, and, as the coal on the road is mostly produced by individual operators, the claims are legitimate; thirdly, that the Lackawanna companies are large producers even under curtailment, whether entirely from profitable mines or not it is difficult to say; fourthly, that the Pennsylvania Coal Company has been complying very strictly with the spirit of its agreements with

other companies; and fifthly, that the Pennsylvania Railroad, the only company that shows an increase, has been acting independently, and mining and selling all the coal it can find market for.

#### GREAT BRITAIN'S EXPORTS OF IRON AND STEEL.

Under date of October 9th, Messrs. W. W. & C. RICHARDSON, of London, furnish us with the following table of exports extracted from government returns :

RAILWAY IRON EXPORTED TO	Month ended Sept. 30th.			9 Months ended Sept. 30th.		
	1878.	1879.	1880.	1878.	1879.	1880.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United States.....	34	8,431	14,531	625	22,107	173,775
Russia.....	9,876	6,002	1,921	47,231	29,566	9,243
Turkey.....	326	10	.....	358	1,023	51
British India.....	3,924	5,002	6,708	79,250	67,911	109,228
British North America.....	4,642	15,707	7,695	29,707	53,754	77,151
Egypt.....	.....	16	83	2,380	1,481	3,939
Australia.....	3,330	2,183	6,616	54,049	46,952	63,266
Brazil.....	770	280	961	14,905	27,910	14,879
Holland.....	.....	761	11	103	3,702	2,051
Spain and Canaries.....	205	862	683	20,270	12,420	9,563
Sweden and Norway.....	1,292	25	1,568	21,440	11,116	5,794
Chili.....	4	39	1,095	998	720	3,307
Denmark.....	243	94	13	4,640	4,718	193
Peru.....	642	102	.....	3,004	2,298	751
Germany.....	2,317	3	.....	30,743	3,346	323
British Possessions in South Africa.....	515	244	390	8,122	5,027	6,610
Italy.....	231	2,924	1,554	16,775	28,252	15,328
Other countries.....	1,724	5,037	6,348	15,739	24,891	45,719
Total.....	30,075	47,722	50,130	349,589	347,194	541,171
Total exports from Great Britain of iron and steel to all countries.....	197,470	287,067	297,013	1,737,603	1,980,120	3,002,498
Estimated total of iron rails.....	3,388	9,378	7,130	93,253	34,952	109,863
"    steel rails.....	23,729	31,241	36,150	197,802	254,394	367,836
Total of rails.....	27,117	40,619	43,280	291,055	289,346	477,699
Exports of the following to the United States :						
Pig-iron.....	1,534	32,036	26,061	20,074	76,643	564,043
Old iron for re-manufacture.....	289	26,549	4,571	1,176	59,849	189,154
Steel unwrought.....	323	531	1,304	3,514	4,260	32,974
Tin plates.....	6,837	13,342	13,865	76,592	109,909	124,156
Hoops and sheets.....	154	798	2,184	709	3,042	38,163
Bar, angle, bolt, and rod.....	476	605	1,170	3,828	3,290	47,039

A year ago, the "boom" in iron was well under way, so that a comparison with the month of September shows in the aggregate but little change. The total exports for nine months, however, show a remarkable improvement; the increase for the first nine months of this year over the same period in 1879 and 1878, shows 1,022,378 and 1,264,895 tons respectively, or an improvement of 52 and 73 per cent. The aggregate of shipments to the United States was not so large for September of this year as last year. They were, however, sufficient to have a very important influence on our domestic market, being at the rate of over 800,000 tons per annum. The total shipments to the United States for the first nine months of this year were 1,169,304 tons as compared with 279,100 and 106,516 tons respectively during 1879 and 1878. The only important changes during September in the exports of railway iron were an increase to the United States and a falling off in those to British North America.

#### THE MARMORA, ONTARIO, GOLD MINES.

There are comparatively few people who know that within twenty-four hours of New York, and within a few miles of railroads, there are gold mines which have been developed to so great an extent and with such satisfactory results as to place them fairly among the few great mining properties of the continent.

The Marmora Gold Mines are situated about 30 miles north of the city of Belleville, Ontario, or about 70 miles northwest of Kingston, which is at the eastern extremity of Lake Ontario. The railroad at the village of Madoc is within 9 miles of the mines, and the roads are excellent, being macadamized and without any heavy hills. The mines are situated in a well-settled farming district, where supplies of all kinds are extremely cheap and quite abundant. Gold was discovered in this district as long ago as 1863, when what is known as the Richardson mine was opened. This is not properly in the Marmora gold belt, but is a deposit on the contact of dolomite and chloritic slates. Out of a small pocket of decomposed rock not more than 50 cubic yards in extent, an amount of gold valued at \$150,000 was extracted, and for the most—stolen. The ore did not occur in a regular vein, and as the company had no working capital, no work of any importance has been done at the mine since the wonderful pocket first discovered was worked out.

In the year 1865, gold was first discovered in the true fissure-veins of the Marmora gold belt, and some small mills were erected to treat the gold-bearing arsenical pyrites as "free-milling" ores. The operations were all undertaken by persons both ignorant of the methods of treating sulphuret ores, and almost wholly without capital, so that while as much as \$9 and \$10 per ton was occasionally obtained, the expense of carrying on the work under the disadvantages mentioned

and the loss not only of gold but of quicksilver, caused the abandonment of the several enterprises. Though the veins on one of the properties owned by the Gatling Gold and Silver Mining Company had been opened to a depth of about 80 feet, and had been probed in length by a great number of shafts and surface openings, showing the veins to be of great width and the ores to be of a highly profitable grade, yet the old causes of lack of capital and want of experience prevented even that company from ever finishing a mill it had commenced or of working either the ores or the mines during the past seven or eight years, while the evident and well-known value of the property induced the company to hold it at such a high price that no one would buy it. This, in brief, has been the history of a district which each of the great number of experts who have examined the mines declares to be one of the most valuable mining properties on the continent, and it answers in a measure the very natural question which each in turn has asked, after having seen the property, "How has a property as valuable as this been so long neglected?"

Ten months ago, we personally visited this district, and, after a careful examination of the mines, bonded a number of properties, and for four months worked the mines with a force of from eighty to ninety men, sinking shafts, driving levels, etc., and thoroughly testing the ores on a large scale, milling about one thousand tons and sampling over six hundred tons of this in five-ton lots. Since then, the work of sinking has been continued, and the depth attained is now 150 feet. The ore for the lowest thirty feet is the richest yet found in the mine.

After this most exhaustive series of tests, the purchase of several properties was determined on, and a company with the title, *The Canada Consolidated Gold Mining Company*, was organized under the general laws of the State of New York, and the stock, the greater part of which has been already placed, is held for the most part by prominent persons in this State and in Canada.

#### THE MINES OF THE CANADA CONSOLIDATED GOLD MINING COMPANY.

The questions which would naturally be asked concerning any mining property to which attention were directed would be about as follows :

- I. Character of the veins and of the ore.
- II. Extent of the property.
- III. Amount of development.
- IV. The average value of the ore.
- V. The quantity and value of the reserves, or ore in sight.
- VI. The cost of mining and milling.
- VII. The net profits.

VIII. Title, taxes, wood, water, roads, supplies, cost of living, wages, capitalization, liability of stockholders, working capital, etc.

In the case of the Canada Consolidated Gold Mining Company, all these questions are answered in the fullest manner on the authority of a number of such well-known experts as Prof. ED. J. CHAPMAN, of University College, Toronto; Prof. W. T. RICKARD, of London, England; JAMES DOUGLAS, Jr., of Phoenixville, Pa.; Capt. BENJAMIN PLUMMER, expert for JOHN TAYLOR & SONS, London; Messrs. FRANCIS and ROWSE, who also reported to JOHN TAYLOR & SONS; JOHN C. F. RANDOLPH, of New York; ADOLPH THIES, at present of Alabama; Capt. THOMAS COUCH, Mine Superintendent Horn-Silver mine, Utah; R. H. STRETCH, San Francisco; N. B. WALKER, New York; and R. P. ROTHWELL.

The opinions of these gentlemen are given in a pamphlet which lies before us, and they are uniformly to the effect that this is an extremely valuable property, though at the time many of the reports were made the mines were not nearly so extensively opened nor was the ore as rich as that since found in the lowest workings. Indeed, at the present time, this may safely be counted as one of the most valuable properties yet brought to the New York market.

#### I.—THE CHARACTER OF THE VEINS AND OF THE ORE.

The gold-bearing veins are quartz-filled true fissures in syenitic granite, with micaceous or talcoid slates forming the walls of, and horses in the veins. This talcose-slaty rock is clearly the product of the chemical decomposition of syenite along the fissure, where it and quartz form the gangue for an arsenical gold-bearing iron pyrites (mispickel). The magnesia of the talc comes from the hornblende in the syenite. The mispickel is found generally in a crystalline form, though sometimes in heavy amorphous masses running in beds through the quartz. Considerable quantities of crystallized calc-spar also occur irregularly in the veins.

Some four or five parallel veins have been proved to exist in a belt of 500 or 600 feet in width, running through the property of the Canada Consolidated Company for a length of over three quarters of a mile, while the main vein has been opened on adjoining properties, making a total proved length of this great fissure of about three miles on the vein, a fact which, next to actual sinking, may be considered the best proof of the continuance in depth of the veins. Three of these veins have been proved on this property by costine pits and shafts sunk at short intervals along their outcrops, to depths varying from 15 to 150 feet. In this manner, the east or main vein has been thoroughly explored over a length of about 800 feet by shafts of from 40 to 150 feet in depth; these have, in every case, been in pay-ore all the way; their lowest points are now in

as good ore as has been found on the property; and they have shown this vein to have a thickness exceeding 20 feet in many places, and averaging probably 10 or 12 feet; while the middle and west veins, though smaller, have still apparently a thickness of three feet and upward.

The gold is found as free gold principally in the arsenical sulphurets, but it occurs also in the quartz, where it is often plainly visible. The proportion of sulphurets to quartz in the vein has been ascertained by repeated tests; it varies from 10 to 60 per cent in weight of the entire vein-stuff, and these sulphurets carry from thirty to several hundred dollars per ton, while the entire filling of the vein, without any sorting whatever, has been found, by careful sampling of over six hundred tons in five-ton lots, to run an average of nearly \$19 gold per ton. Selected samples have been found to carry over a thousand dollars to the ton.

The veins are beyond all doubt true fissures in syenitic granite—very similar to the famous mines of Cornwall, Saxony, and other parts of the old world, where they have been worked with profit for a hundred years—while their great proved length and thickness on this property put beyond any reasonable doubt their continued productiveness to the greatest depths.

It is not, of course, expected that the veins will be of uniform thickness throughout, or that the ores will be equally rich in every place; on the contrary, the fissures will open out in some places and pinch in others, and the ore itself will be far richer in some parts of the vein than in others; but the fact that not a single one of the five-ton samples (representing over 600 tons) carried less gold than would leave a handsome profit after deducting the cost of mining, milling, and loss in treatment, justifies the belief that pay-ore will be found throughout the entire length (nearly 1000 feet) already proved of the main chimney.

In our next number, we shall continue the description of this valuable property, answering in their order the questions suggested above, and illustrating the property by maps and sections.

#### SIR HENRY BESSEMER.

On Wednesday, October 6th, a special meeting of the Court of Common Council was held at the Guildhall, London, under the presidency of the Lord Mayor, to present the freedom of the City to Sir Henry Bessemer, F.R.S., M. Inst. C.E. The Lady Mayoress and other ladies were present, besides a large number of the general public and of the members of the Court of Common Council. The master, past-master, and other members of the Turners' Company, of which Sir Henry is a member, occupied seats on the dais. The Town Clerk read the following resolution:

"That the freedom of the City, in a suitable gold casket, be presented to Sir Henry Bessemer, F.R.S., M.I.C.E., in recognition of his valuable discoveries, which have so largely benefited the iron industries of this country, and of his scientific attainments, which are well known and appreciated throughout the world."

The gold casket presented, specially designed and manufactured, illustrates the process of the conversion from the raw material to the application of the steel. It is of solid English design, surmounted by a finely-modeled figure of Commerce, standing between a stack of pig-iron and the converter. She commends the invention on account of the impetus that cheap steel gives commercial enterprise. The overflowing cornucopia at the base signifies this success. On each side of the rounded cover are vignettes, in *repoussé* work, of a L. & N. W. Railway locomotive, entirely constructed of this steel, and standing on its steel rails, and of a steel-clad ship. The two curved ends contain the enameled arms of the City, with the dragons modeled in high relief. On the center panel is the medal which Sir Henry Bessemer gives annually to the Iron and Steel Institute. The inscription is on the reverse. Shields for the Bessemer arms and monogram complete the whole, which rests on a platform of Bessemer steel.

The following is the reply of Sir Henry Bessemer to the address of the City Chamberlain; cheers and cries of "hear, hear!" being freely interspersed:

"My Lord Mayor, Mr. Chamberlain, and Gentlemen: It would have been impossible for me to have listened to the very kind and complimentary address of the distinguished Chamberlain, and at the same time to have received at the hands of this honorable Court the high honor that has just been conferred upon me, without a deep feeling of gratitude; for I am well aware that the honorary freedom of this, the greatest and wealthiest city in the world, has for generations been esteemed a fitting gift for princes, warriors, and statesmen, who have ever felt ennobled by the presentation. But this honorable Court, appreciating the importance of trade and commerce, has, on the present occasion, elected to pay this distinguished honor to one who can only claim to have devoted himself with some success to the study and improvement of one of the staple industries of this great commercial nation. Such a deviation from the beaten path, while it clearly shows the intelligent appreciation of this honorable Court, adds, in my estimation, greatly, and I may say immeasurably, to the value of the honor thus exceptionally conferred, and also to the great pleasure it has given me. In the address of your honorable Chamberlain, some mention has been made of the advantages resulting from the employment of steel for railway and other construction purposes, and perhaps it would not be out of place if I were to explain to you as briefly as possible how it is that steel can now be obtained in the short space of fifteen or twenty minutes, instead of requiring from two to three weeks, as formerly, and why it now costs only £6 or £7 per ton, instead of £50 or £60." After a technical description of the mode of manufacturing steel under the old system, the speaker continued: "Under the process which I have had the honor of inaugurating, we dispense with every

one of the intermediate processes formerly employed. We have no smelting of pig-iron; we have no puddling; we have no converting furnaces. You will readily understand that with a process which is so rapid, and which is so entirely devoid of the use of expensive fuel and of all those various skilled manipulations which were necessary at every stage of the old process, the cost of manufacture is now so exceedingly small as it has proved to be. I have lately seen in the large works of Sir John Brown 20 tons of crude cast-iron converted into 20 tons of cast-steel in the small space of 23 minutes. The value of that material, taken at £4 per ton, would be £80 at its commencement; its value, after conversion, at that particular time, could not have been less than £100 per ton, or £2000 altogether. That is, of course, an exceptional case; but it is a fact. At the time when my invention was introduced into Sheffield, the entire make of steel was 51,000 tons in the year. Last year, we had 830,000 tons of Bessemer steel, being sixteen times what was the produce twenty years ago. It is anticipated that on the continent of Europe, this year's make will reach 2,000,000 tons, and our own 1,000,000. The value of these 3,000,000 together may be taken at £10 per ton, or £30,000,000 sterling; and if that metal had been made by the old process, it would have been impossible to have brought it into the market under £50 a ton, or £150,000,000 sterling. Gentlemen, I have again to thank you for the great kindness with which you have received me, and for the honor which you have conferred upon me this day."

In the evening, the Lord Mayor and Lady Mayoress entertained Sir Henry and Lady Bessemer and about 300 other guests at the Mansion House. The following is what Sir Henry Bessemer said:

"When I reflect, gentlemen, on the events of the day, my mind is instinctively drawn to the contrast between my own lot and that of the great pioneers of old, whose labor and talent laid the foundation, and whose energy and perseverance reared the mighty fabric of the British iron trade. If we look back to the days of Queen Elizabeth, we find that Sussex was the chief seat of the iron manufacture of this country. Numerous small furnaces were scattered over Sussex, Kent, and Surrey, and, although the production at that period did not exceed 17,000 tons annually, the vast forests that previously existed had been cut down to supply fuel for these numerous furnaces. So great, indeed, was the destruction of timber that the government, in alarm lest the supply of oak for ship-building should become exhausted, passed the most stringent laws for its protection. No tree of over one foot in diameter was allowed to be cut down under severe penalties, and no timber of any kind whatever was allowed to be cut within twenty miles of the City of London. These and other restrictions greatly discouraged the manufacture and reduced the production of iron. While at this low ebb, a most important invention was made in 1640 by Dud Dudley, of Tipton, by means of which iron was successfully smelted with mineral fuel. It is impossible to over-estimate the advantages which the world has gained by that important discovery, but poor Dudley did not rest on a bed of roses. The whole trade rose up against him as their natural enemy, who they said was bringing ruin and destruction on their already declining industry. His works were pulled down by a riotous mob. His patents were evaded, while sums of money were expended in attempts to secure his rights, and he was at last cast into prison for debt. How many of the hundreds of intelligent and persevering men, to whose inventions we owe the highly-developed state of the iron manufacture, have shared with Dudley the misfortunes of being an inventor, while comparatively few have reaped a rich reward for the services they have rendered to their country! It has been my lot to come on the scene when the iron trade of this country had reached almost its highest attainable extent of production, and, as a system, a degree of perfection in its various branches which seemed to leave no room for any but the most trifling ameliorations. But this is just the condition when all great changes in the mechanical arts take place. Thus, it was not until the high-roads of this country and our mail-coach system had by degrees attained the highest state of perfection, and had become the admiration and envy of every other nation, that the iron road and the steam horse came and swept it away forever. So it has been with the hand-printing press, which was gradually and steadily improved, from the days of Caxton to those of Applegarth and Cowper, during which time it became so perfect an instrument that nothing more could be expected from it. Then came the steam printing-machine, with its type cylinder and miles of endless paper, before which the printing press quietly disappeared. It is ever thus with the advancing tide of scientific research and mechanical improvement, which inaugurates new systems as the old ones ripen and die out. It has been my good fortune to assist in one of these great and quiet industrial revolutions, which is as surely inaugurating the age of steel, as that of iron succeeded to the age of bronze. I can not but congratulate myself, my Lord Mayor and gentlemen, on having fallen in better times than poor Dud Dudley, when the intelligent sympathies of every citizen are with and not against those who devote their lives to scientific studies and the advancement of those manufactures to which this country is so greatly indebted for its wealth and position. My Lord Mayor and fellow-citizens, I can not sit down without again thanking you most warmly and cordially for the great honor which has been conferred upon me by you. I have received so high a mark of your confidence and esteem to-day that it is to me the greatest pleasure which has ever fallen to my lot."

#### THE WINSLOW (ME.) TIN ORE DEPOSIT.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: In a recent issue [ENGINEERING AND MINING JOURNAL, October 2d], you publish a letter from Dr. T. Sterry Hunt, calling attention to the fact that no credit had been given to him for his early description of the tin mine at Winslow, Me., in your notice of my paper upon the same deposit, read at the Boston meeting of the American Association for the Advancement of Science. If the paper had been reported in full, Dr. Hunt would have seen his name mentioned, with disapproval of his view as to the age of the inclosing formation. Will he not give us in the columns of your JOURNAL his reasons for referring these Winslow beds to the horizon of the typical Montalban of New Hampshire?

Yours, respectfully,

C. H. HITCHCOCK.

HANOVER, N. H., Oct. 18, 1880.

## PARLEY'S PARK, LITTLE COTTONWOOD, FRISCO AND SILVER REEF, UTAH.

Special Correspondence of the Engineering and Mining Journal.

The superintendent of the Ontario mill says if the grade of the ore holds up, he will run out during the present month \$250,000. The mine is showing remarkably well, and the west drifts are pushed ahead rapidly. The Parley's Park shaft is down to the 400, and north and south drifts have been commenced and are driving forward to catch a vein. The grading for the new works on the Lowell is nearly finished, and the Griffiths & Wedge prospecting engine will arrive this week. A Cornish pump, the first ever used in Utah, will be put in this mine. The Hawkeye shaft is now down 75 feet, and is sinking at the rate of 3 feet per day. The flow of water is increasing, and the vertical Knowles pump will be placed very soon. Two station pumps are on the way to the mine. The vein, it is expected, will be cut by the shaft at 300 feet. The vein in the Glencoe is strong and regular, carrying a good ore-seam the entire length of the tunnel—275 feet; 125 tons of ore lie on the dump, but it is base. The property is owned by Marshal Shaughnessy and Richard Grant, and bids fair to become a good mine. The Empire ore-house is finished; work on the new mill progresses, and the vein from the 400 level in the mine is to be cut in a few days. Since Marshal Shaughnessy sold out to the Ontario Company, work on the Henrietta has been discontinued. The Jones Bonanza main shaft is going down, and within a few months, I think this will be a leading mine. It has always had a strong vein of rich ore on the surface, and considerable water at a depth of 40 feet. The machinery, now in successful operation, will enable the company to thoroughly develop the vein to a depth of 400 feet.

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ELLSWORTH, ME., Oct. 18.

## MINING DECISION—TITLE BONDS TO MINING PROPERTY.

In the Circuit Court of the United States, an important ruling was made in the case of Smith and Downs vs. A. E. Reynolds and others, touching the validity of the title bonds to mining property which are now commonly in use. The complaint was a bill for specific performance, based upon a title bond executed by three of the defendants to complainants, in pursuance of which they bound themselves to convey three fifths of the Terrible mine to the plaintiffs, upon the payment of certain sums, therein named, within a specified time. Before the expiration of the time, the said three defendants had sold and conveyed the property to John H. Maugham, and he had conveyed to Albert E. Reynolds. Reynolds set up in his answer that the title bond was given without consideration. The complainants excepted to this portion of Reynolds's answer. The exception was argued by Col. M. B. Gerry and Charles S. Thomas, Esq., for complainants, and by Thatcher and Gast for defendants. Although the Court had given a slight intimation of its views upon this question in the Matchless mine case (Tobert A. Wright vs. Timothy A. Foley) at the last May term in Denver, the point was not squarely in issue. In the Terrible case, the point was directly presented by the exception of Reynolds's answer. Upon this particular exception, Judge Hallett in substance said:

As to the exception to separate answer of Reynolds, alleging that the bond executed by three of the defendants to the plaintiffs was a voluntary bond, executed without any consideration, in my opinion it is not well taken. This exception must be overruled. Such bonds are of no effect whatever unless carried out by the obligees tendering the whole or some part of the agreed price, and the obligees accepting the same. To say that such a bond is capable of being enforced is to assert that one party is bound while the other is not. If the purchaser is not bound, neither is the vendor. It is not the case of a contract founded upon mutual promises, which is always enforceable. When there is a promise to sell, but no promise to buy, there is no contract. It is a promise without consideration. Of course, if the seller, when it is still within his power to sell, accepts the money, or some part of it, he is bound to make the conveyance; or if the consideration be that the obligee shall sink a shaft until mineral is struck, or that he shall do other work on the mine, the case would be different. In that event, there would be no want of mutuality. It would be the case of an ordinary agreement, based upon a consideration.

But in the case before us, the plaintiffs did not agree to take the property. Is it possible that Clark, Patton, and Ottman were bound to sell, while Downs and Smith were not bound to buy? This I do not understand to be the law. I have always regarded this class of bonds as being without validity. I know there are some good lawyers who maintain that such a bond may be treated as a continuing offer during the time limited therein, and that the offer may be accepted at any time during that period. But this is not my view of the law. Mr. Thomas stated that he could furnish some authorities which lay down a different doctrine. I now think this part of the answer presents a good defense. At the final hearing, upon a more extended examination of the authorities, my views may be modified; but, as at present advised, my conviction is, that this bond is without validity.—*Pueblo (Colo.) Chieftain.*

OHIO RIVER COAL TRADE COMBINATION.—The Ohio River coal trade having Pittsburg as its headquarters proposes to pool its issues and form a combination to carry on the business so as to prevent losses due to "cut" rates. Many suggestions have been made, but the latest in this direction is that of the formation of a big pool embracing all the large coal interests, with a sufficient capital for that purpose, which shall have the management of the entire coal interest south and west of Pittsburg. This combination will assume charge of all the coal sent down the river, and thereby relieve the individual operators from all trouble and expense necessary in its disposal. Another suggestion is, that a gigantic corporation be formed, in which each firm shall be interested to the extent and value that may be affixed to its lands and mines, and that, thereby, all individual interests being merged into one, they would become complete masters of the coal trade.—*Coal Trade Journal.*

REPORT ON THE PROPERTIES OF THE STORMONT SILVER MINING COMPANY, AT SILVER REEF, UTAH.

By Prof. J. S. Newberry.

MR. A. J. JOHNSON :

DEAR SIR : I have just returned from Silver Reef, where I made a careful examination of the properties of the Stormont Silver Mining Company. These properties consist of the Buckeye, Last Chance, and Stormont claims on the Buckeye Reef, the Thompson & McNally mines on the White Reef, and the Stormont mill on the Virgin River, four miles from the Stormont mine. These properties have been so fully and accurately described in the reports of Messrs. Rothwell and Couch that it would be quite superfluous for me to attempt a complete review of them or to repeat here what they have said. My observations fully confirmed all the generalities of their reports, and I take pleasure in commending them as giving a graphic and truthful view of your property and its surroundings, and as reflecting great credit on their authors for their thoroughness and accuracy. There are, however, two or three questions in regard to the geological structure of the Silver Reef District which particularly attracted my attention, and which I was able to settle, at least to my own satisfaction. As these have been much discussed, have given rise to considerable difference of opinion, and have an important practical bearing on the permanence and value of the silver impregnations which constitute the most striking and characteristic feature in this mining district, I will briefly refer to them.

These questions are, 1st. What is the geological age of the silver-bearing sandstones? 2d. What is the source of the impregnation? 3d. Are there two reefs, or is one broken down and duplicated by a fault?

The first of these questions has been left unanswered by all who have written on the geology of the district; but I was able to obtain conclusive evidence that the sandstones are of Triassic age, and are a part of the great sheet of Triassic rocks which extends through Southeastern Utah, Southern Colorado, New Mexico, the Indian Territory, etc. In the Cedar Mountain, which reaches down from the north nearly to Silver Reef, I found the complete succession of the rocks of this region—Carboniferous, Permian, Trias, Jura, and Cretaceous, each containing its characteristic fossils. I also found some representatives of the sandstones which form the reefs everywhere present in the Triassic group, and everywhere containing silver and copper. The question is then finally settled.

In regard to the source of the silver impregnation, I had, before going to Silver Reef, accepted and repeated the theory promulgated by those who have written on the subject, namely, that silver solutions, coming up through fissures where the volcanic rocks have broken the sedimentary formations, had spread through and more or less perfectly saturated the more porous strata—the sandstones—converting them into sheets of ore. I am now inclined to believe, however, that the silver, like the copper which the sandstones contain, was deposited with them and not introduced subsequently. The evidence of this is furnished by the facts that the extension of the sandstones through the unbroken table-lands east of Silver Reef, and along Cedar Mountains as far north as Beaver, all contain silver, though rarely more than seven or eight ounces to the ton.

Another fact which seems irreconcilable with the theory of the recent diffusion of the silver solution is, that some of the richest ore is in the fine clay-shale that lies in sheets and lenticular masses in the sandstone. This material is nearly impervious, and it seems improbable that a solution flowing through the sandstone should have made any considerable deposit of silver in it.

This question has perhaps little bearing on the value of your mines—for the diffusion of silver would be sufficiently extensive according to either theory—but the view that the impregnation extends in greater or less richness over hundreds of square miles is in the strongest contrast with that entertained by some that the ore is local and exhaustible. By whatever means introduced, I am thoroughly satisfied that the ore will be found to extend, not uniformly, but in patches, as hitherto met with, as far as the sandstone ledges can be penetrated.

The question whether there are two silver-bearing sandstone beds at Silver Reef, or whether the lower or Buckeye Reef has been broken off from the upper or White Reef by a fault, has divided the inhabitants of the town into two parties, and is just now quite warmly discussed. As it seriously affects the value of all the mines located on Buckeye Reef, and is of vital consequence to the Stormont mine, I gave special attention to it.

If there are two reefs, the Stormont, Buckeye, and Last Chance mines can be profitably worked perhaps for a mile down the dip of the reef; but if there were but one, they could be worked only to the line of the fault—perhaps 1500 feet at the Buckeye, and not more than 300 feet at the Stormont. This would render the Stormont comparatively worthless, and greatly reduce the prospective value of the Buckeye and Last Chance. I am able, however, to allay any fears that may have been excited by this theory of a faulted reef; for at the Stormont mine I found both reefs exposed in the same cliff, and an unbroken series of sandstone and shale beds filling the space between them, thus establishing the fact claimed by Messrs. Rothwell and Couch that *there are two reefs*.

PRESENT CONDITION OF THE PROPERTY.

The results of my inspection of the mines and mill belonging to your company are briefly as follows :

I found work progressing with energy and system in the Buckeye and Last Chance mines, with a daily output of from 65 to 70 tons of ore, that would average about 35 ounces in silver per ton. The ground above the water-level is being well opened with drifts and winzes, which show in many places strata of ore of fair thickness and quality. Enough such ore-sheets are already in sight to guarantee a maintenance of the present output for months to come, and these show no indications of being exhausted.

The new shaft on the Buckeye is now down about 100 feet, and machinery for hoisting and pumping is being placed in position. It is expected that this shaft will be completed and already in service as a new outlet to the mine within sixty days. This will open a large area of new ground, and with the increased facilities it will afford, it may be reasona-

bly expected that the output of the mine will be considerably greater than at present.

Just what will be found in the ground which lies beyond the present workings can not now be predicted; but the general character of the reef, as far as it has yet been opened at this point, gives encouragement to expect that the future of the Buckeye and Last Chance will not be unlike their past; that is, that a succession of ore-bodies of greater or less dimensions will be met with which will give a fair degree of regularity and stability to the working of these mines for an indefinite period. On the whole, I may say that my impressions were highly favorable as to the permanence and value of this property, and my anticipations, drawn from the descriptions I had read of it, were more than realized.

The Stormont mine, also located on the Buckeye Reef, is as yet but imperfectly opened; but it affords every indication of becoming as productive as the Buckeye or Last Chance. The present workings consist of an incline which follows down the ledge at an angle of 45° to the depth of 200 feet, with stopings extending perhaps 100 feet on the north and 50 or 60 feet on the south side. Until recently, the incline was nearly filled with water; but this had been mostly pumped out at the time of my visit, and hoisting-works were being erected preparatory to the resumption of active mining operations. No ore has been taken from the Stormont mine since the change of ownership, and no accurate information could be obtained in regard to the average richness of that removed by the former proprietors. Good faces of ore are, however, shown in the incline and lateral workings, and numerous assays made from specimens taken at different places indicate that the grade of the ore is not below that of the Buckeye. From all the facts observed at the Stormont, I was led to regard it as a valuable property; and I think that, when put in working order, its output will help materially to increase the revenues of your company.

My inspection of the Thompson & McNally mine did not result in as favorable an impression as I received from my examination of the Buckeye, Last Chance, and Stormont. The former, as you are aware, is located on the White Reef, which I am led from some facts to consider as less thoroughly impregnated with silver, and as affording less good mining ground than the lower or Buckeye Reef. Still there is so much territory to be worked over in the White Reef, that any generalization of this character must be considered as somewhat premature. Perhaps all that it is now safe to say is, that, as far as explorations have yet been carried, the Buckeye Reef has shown the largest and most continuous bodies of ore of good grade.

Some excellent deposits of ore were found in the upper workings of the Thompson & McNally; but these terminated somewhat abruptly, and although an extensive and intelligent system of exploration has been followed below, nothing very promising has been found there. It should be said, however, that there is a very large area of the ledge belonging to these claims below all the present workings which remains to be tested before the value of the property can be accurately determined. Owing to the slope of the hill, the silver-bearing ledge can be reached at no great depth, 1000 feet or more, below its outcrop. Hence, I would advise that at some convenient time a series of shafts, trial-pits, or diamond-drill holes be sunk through the ledge at various points on this unexplored area. Should this be done, I am confident that it will result in the discovery of valuable bodies of ore; for I can not conceive that the silver impregnation should be confined to the limited space yet thoroughly examined.

The stamp-mill belonging to this company I found apparently in excellent order and doing its work regularly and well under the judicious management of Mr. Gillespie. It seems very complete in all its appointments, and my only regret in connection with it is, that it is not located nearer the mines. Where it is now placed, it has the advantage of being cheaply driven by water-power; but this is more than compensated by the necessity of hauling the ore between four and five miles to it, at an expense of \$2.20 per ton. According to my estimates, a saving of about \$1 per ton would be effected by the removal of the mill to a point conveniently near the Buckeye, Last Chance, and Stormont mines, and the substitution of steam for water as a motive power. At present, such a removal would probably not be wise; but should the output of the mines be materially increased, it may be questioned whether it would not be better to erect a new mill at the mines than to double the capacity of the old one, and add to the daily loss of profit by adding to the expense of transportation.

In conclusion, I would say, that I can sincerely congratulate your company on the possession of what I regard as a fine mining property. It seems to me to include the cream of the silver deposits of Silver Reef; in the hands of Mr. Layson and Colonel Allen, to be under good management; and to contain all the elements of permanence and success.

Yours respectfully, J. S. NEWBERRY.

SALT LAKE CITY, UTAH, Aug. 15, 1880.

PETROLEUM IN CAPE BRETON, CAN.—Several American oil operators are at present prospecting in the Cape Breton oil regions. The prospects were never better since the work first began. Seven wells have been put down by Boston parties, who began operations last fall, and the work of pumping has begun; but the water has proved more troublesome than was anticipated, necessitating the use of some extra machinery which has to be imported.—*Chignecto Post*.

We have received the following note from the Dittmar Powder Manufacturing Company; and as it must interest other manufacturers and consumers of high explosives, we give it a place in our columns :

"We learn by telegraph that the United States Circuit Court, for California, Justice Field, of the United States Supreme Court, presiding, has declared dynamite reissue letters-patent 5799 wholly void; this being the patent on which the Giant companies have brought all their recent actions, and all their other reissues having been previously declared void, the patents of Carl Dittmar stand unchallenged upon the record, and all manufacturers, vendors, agents, or consumers of either Giant or Hercules, or Atlas, or Vulcan, or Vigorite, or Lake Superior, or Aetna or similar powders, are clearly infringers upon the patents of Carl Dittmar, and subject to all the penalties and damages consequent thereupon.

"Respectfully, THE DITTMAR POWDER MANUFACTURING CO."

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ELLSWORTH, ME., Oct. 18.

## MINING DECISION—TITLE BONDS TO MINING PROPERTY.

In the Circuit Court of the United States, an important ruling was made in the case of Smith and Downs vs. A. E. Reynolds and others, touching the validity of the title bonds to mining property which are now commonly in use. The complaint was a bill for specific performance, based upon a title bond executed by three of the defendants to complainants, in pursuance of which they bound themselves to convey three fifths of the Terrible mine to the plaintiffs, upon the payment of certain sums, therein named, within a specified time. Before the expiration of the time, the said three defendants had sold and conveyed the property to John H. Maugham, and he had conveyed to Albert E. Reynolds. Reynolds set up in his answer that the title bond was given without consideration. The complainants excepted to this portion of Reynolds's answer. The exception was argued by Col. M. B. Gerry and Charles S. Thomas, Esq., for complainants, and by Thatcher and Gast for defendants. Although the Court had given a slight intimation of its views upon this question in the Matchless mine case (Tobert A. Wright vs. Timothy A. Foley) at the last May term in Denver, the point was not squarely in issue. In the Terrible case, the point was directly presented by the exception of Reynolds's answer. Upon this particular exception, Judge Hallett in substance said:

As to the exception to separate answer of Reynolds, alleging that the bond executed by three of the defendants to the plaintiffs was a voluntary bond, executed without any consideration, in my opinion it is not well taken. This exception must be overruled. Such bonds are of no effect whatever unless carried out by the obligees tendering the whole or some part of the agreed price, and the obligees accepting the same. To say that such a bond is capable of being enforced is to assert that one party is bound while the other is not. If the purchaser is not bound, neither is the vendor. It is not the case of a contract founded upon mutual promises, which is always enforceable. When there is a promise to sell, but no promise to buy, there is no contract. It is a promise without consideration. Of course, if the seller, when it is still within his power to sell, accepts the money, or some part of it, he is bound to make the conveyance; or if the consideration be that the obligee shall sink a shaft until mineral is struck, or that he shall do other work on the mine, the case would be different. In that event, there would be no want of mutuality. It would be the case of an ordinary agreement, based upon a consideration.

But in the case before us, the plaintiffs did not agree to take the property. Is it possible that Clark, Patton, and Ottman were bound to sell, while Downs and Smith were not bound to buy? This I do not understand to be the law. I have always regarded this class of bonds as being without validity. I know there are some good lawyers who maintain that such a bond may be treated as a continuing offer during the time limited therein, and that the offer may be accepted at any time during that period. But this is not my view of the law. Mr. Thomas stated that he could furnish some authorities which lay down a different doctrine. I now think this part of the answer presents a good defense. At the final hearing, upon a more extended examination of the authorities, my views may be modified; but, as at present advised, my conviction is, that this bond is without validity.—*Pueblo (Colo.) Chieftain.*

OHIO RIVER COAL TRADE COMBINATION.—The Ohio River coal trade having Pittsburg as its headquarters proposes to pool its issues and form a combination to carry on the business so as to prevent losses due to "cut" rates. Many suggestions have been made, but the latest in this direction is that of the formation of a big pool embracing all the large coal interests, with a sufficient capital for that purpose, which shall have the management of the entire coal interest south and west of Pittsburg. This combination will assume charge of all the coal sent down the river, and thereby relieve the individual operators from all trouble and expense necessary in its disposal. Another suggestion is, that a gigantic corporation be formed, in which each firm shall be interested to the extent and value that may be affixed to its lands and mines, and that, thereby, all individual interests being merged into one, they would become complete masters of the coal trade.—*Coal Trade Journal.*

REPORT ON THE PROPERTIES OF THE STORMONT SILVER MINING COMPANY, AT SILVER REEF, UTAH.

By Prof. J. S. Newberry.

MR. A. J. JOHNSON :

DEAR SIR : I have just returned from Silver Reef, where I made a careful examination of the properties of the Stormont Silver Mining Company. These properties consist of the Buckeye, Last Chance, and Stormont claims on the Buckeye Reef, the Thompson & McNally mines on the White Reef, and the Stormont mill on the Virgin River, four miles from the Stormont mine. These properties have been so fully and accurately described in the reports of Messrs. Rothwell and Couch that it would be quite superfluous for me to attempt a complete review of them or to repeat here what they have said. My observations fully confirmed all the generalities of their reports, and I take pleasure in commending them as giving a graphic and truthful view of your property and its surroundings, and as reflecting great credit on their authors for their thoroughness and accuracy. There are, however, two or three questions in regard to the geological structure of the Silver Reef District which particularly attracted my attention, and which I was able to settle, at least to my own satisfaction. As these have been much discussed, have given rise to considerable difference of opinion, and have an important practical bearing on the permanence and value of the silver impregnations which constitute the most striking and characteristic feature in this mining district, I will briefly refer to them.

These questions are, 1st. What is the geological age of the silver-bearing sandstones? 2d. What is the source of the impregnation? 3d. Are there two reefs, or is one broken down and duplicated by a fault?

The first of these questions has been left unanswered by all who have written on the geology of the district; but I was able to obtain conclusive evidence that the sandstones are of Triassic age, and are a part of the great sheet of Triassic rocks which extends through Southeastern Utah, Southern Colorado, New Mexico, the Indian Territory, etc. In the Cedar Mountain, which reaches down from the north nearly to Silver Reef, I found the complete succession of the rocks of this region—Carboniferous, Permian, Trias, Jura, and Cretaceous, each containing its characteristic fossils. I also found some representatives of the sandstones which form the reefs everywhere present in the Triassic group, and everywhere containing silver and copper. The question is then finally settled.

In regard to the source of the silver impregnation, I had, before going to Silver Reef, accepted and repeated the theory promulgated by those who have written on the subject, namely, that silver solutions, coming up through fissures where the volcanic rocks have broken the sedimentary formations, had spread through and more or less perfectly saturated the more porous strata—the sandstones—converting them into sheets of ore. I am now inclined to believe, however, that the silver, like the copper which the sandstones contain, was deposited with them and not introduced subsequently. The evidence of this is furnished by the facts that the extension of the sandstones through the unbroken table-lands east of Silver Reef, and along Cedar Mountains as far north as Beaver, all contain silver, though rarely more than seven or eight ounces to the ton.

Another fact which seems irreconcilable with the theory of the recent diffusion of the silver solution is, that some of the richest ore is in the fine clay-shale that lies in sheets and lenticular masses in the sandstone. This material is nearly impervious, and it seems improbable that a solution flowing through the sandstone should have made any considerable deposit of silver in it.

This question has perhaps little bearing on the value of your mines—for the diffusion of silver would be sufficiently extensive according to either theory—but the view that the impregnation extends in greater or less richness over hundreds of square miles is in the strongest contrast with that entertained by some that the ore is local and exhaustible. By whatever means introduced, I am thoroughly satisfied that the ore will be found to extend, not uniformly, but in patches, as hitherto met with, as far as the sandstone ledges can be penetrated.

The question whether there are two silver-bearing sandstone beds at Silver Reef, or whether the lower or Buckeye Reef has been broken off from the upper or White Reef by a fault, has divided the inhabitants of the town into two parties, and is just now quite warmly discussed. As it seriously affects the value of all the mines located on Buckeye Reef, and is of vital consequence to the Stormont mine, I gave special attention to it.

If there are two reefs, the Stormont, Buckeye, and Last Chance mines can be profitably worked perhaps for a mile down the dip of the reef; but if there were but one, they could be worked only to the line of the fault—perhaps 1500 feet at the Buckeye, and not more than 300 feet at the Stormont. This would render the Stormont comparatively worthless, and greatly reduce the prospective value of the Buckeye and Last Chance. I am able, however, to allay any fears that may have been excited by this theory of a faulted reef; for at the Stormont mine I found both reefs exposed in the same cliff, and an unbroken series of sandstone and shale beds filling the space between them, thus establishing the fact claimed by Messrs. Rothwell and Couch that *there are two reefs*.

PRESENT CONDITION OF THE PROPERTY.

The results of my inspection of the mines and mill belonging to your company are briefly as follows :

I found work progressing with energy and system in the Buckeye and Last Chance mines, with a daily output of from 65 to 70 tons of ore, that would average about 35 ounces in silver per ton. The ground above the water-level is being well opened with drifts and winzes, which show in many places strata of ore of fair thickness and quality. Enough such ore-sheets are already in sight to guarantee a maintenance of the present output for months to come, and these show no indications of being exhausted.

The new shaft on the Buckeye is now down about 100 feet, and machinery for hoisting and pumping is being placed in position. It is expected that this shaft will be completed and already in service as a new outlet to the mine within sixty days. This will open a large area of new ground, and with the increased facilities it will afford, it may be reason-

ably expected that the output of the mine will be considerably greater than at present.

Just what will be found in the ground which lies beyond the present workings can not now be predicted; but the general character of the reef, as far as it has yet been opened at this point, gives encouragement to expect that the future of the Buckeye and Last Chance will not be unlike their past; that is, that a succession of ore-bodies of greater or less dimensions will be met with which will give a fair degree of regularity and stability to the working of these mines for an indefinite period. On the whole, I may say that my impressions were highly favorable as to the permanence and value of this property, and my anticipations, drawn from the descriptions I had read of it, were more than realized.

The Stormont mine, also located on the Buckeye Reef, is as yet but imperfectly opened; but it affords every indication of becoming as productive as the Buckeye or Last Chance. The present workings consist of an incline which follows down the ledge at an angle of 45° to the depth of 200 feet, with stopings extending perhaps 100 feet on the north and 50 or 60 feet on the south side. Until recently, the incline was nearly filled with water; but this had been mostly pumped out at the time of my visit, and hoisting-works were being erected preparatory to the resumption of active mining operations. No ore has been taken from the Stormont mine since the change of ownership, and no accurate information could be obtained in regard to the average richness of that removed by the former proprietors. Good faces of ore are, however, shown in the incline and lateral workings, and numerous assays made from specimens taken at different places indicate that the grade of the ore is not below that of the Buckeye. From all the facts observed at the Stormont, I was led to regard it as a valuable property; and I think that, when put in working order, its output will help materially to increase the revenues of your company.

My inspection of the Thompson & McNally mine did not result in as favorable an impression as I received from my examination of the Buckeye, Last Chance, and Stormont. The former, as you are aware, is located on the White Reef, which I am led from some facts to consider as less thoroughly impregnated with silver, and as affording less good mining ground than the lower or Buckeye Reef. Still there is so much territory to be worked over in the White Reef, that any generalization of this character must be considered as somewhat premature. Perhaps all that it is now safe to say is, that, as far as explorations have yet been carried, the Buckeye Reef has shown the largest and most continuous bodies of ore of good grade.

Some excellent deposits of ore were found in the upper workings of the Thompson & McNally; but these terminated somewhat abruptly, and although an extensive and intelligent system of exploration has been followed below, nothing very promising has been found there. It should be said, however, that there is a very large area of the ledge belonging to these claims below all the present workings which remains to be tested before the value of the property can be accurately determined. Owing to the slope of the hill, the silver-bearing ledge can be reached at no great depth, 1000 feet or more, below its outcrop. Hence, I would advise that at some convenient time a series of shafts, trial-pits, or diamond-drill holes be sunk through the ledge at various points on this unexplored area. Should this be done, I am confident that it will result in the discovery of valuable bodies of ore; for I can not conceive that the silver impregnation should be confined to the limited space yet thoroughly examined.

The stamp-mill belonging to this company I found apparently in excellent order and doing its work regularly and well under the judicious management of Mr. Gillespie. It seems very complete in all its appointments, and my only regret in connection with it is, that it is not located nearer the mines. Where it is now placed, it has the advantage of being cheaply driven by water-power; but this is more than compensated by the necessity of hauling the ore between four and five miles to it, at an expense of \$2.20 per ton. According to my estimates, a saving of about \$1 per ton would be effected by the removal of the mill to a point conveniently near the Buckeye, Last Chance, and Stormont mines, and the substitution of steam for water as a motive power. At present, such a removal would probably not be wise; but should the output of the mines be materially increased, it may be questioned whether it would not be better to erect a new mill at the mines than to double the capacity of the old one, and add to the daily loss of profit by adding to the expense of transportation.

In conclusion, I would say, that I can sincerely congratulate your company on the possession of what I regard as a fine mining property. It seems to me to include the cream of the silver deposits of Silver Reef; in the hands of Mr. Layson and Colonel Allen, to be under good management; and to contain all the elements of permanence and success.

Yours respectfully, J. S. NEWBERRY.

SALT LAKE CITY, UTAH, Aug. 15, 1880.

PETROLEUM IN CAPE BRETON, CAN.—Several American oil operators are at present prospecting in the Cape Breton oil regions. The prospects were never better since the work first began. Seven wells have been put down by Boston parties, who began operations last fall, and the work of pumping has begun; but the water has proved more troublesome than was anticipated, necessitating the use of some extra machinery which has to be imported.—*Chignecto Post*.

WE have received the following note from the Dittmar Powder Manufacturing Company; and as it must interest other manufacturers and consumers of high explosives, we give it a place in our columns :

"We learn by telegraph that the United States Circuit Court, for California, Justice Field, of the United States Supreme Court, presiding, has declared dynamite reissue letters-patent 5799 wholly void; this being the patent on which the Giant companies have brought all their recent actions, and all their other reissues having been previously declared void, the patents of Carl Dittmar stand unchallenged upon the record, and all manufacturers, vendors, agents, or consumers of either Giant or Hercules, or Atlas, or Vulcan, or Vigorite, or Lake Superior, or Aetna or similar powders, are clearly infringers upon the patents of Carl Dittmar, and subject to all the penalties and damages consequent thereupon.

"Respectfully, THE DITTMAR POWDER MANUFACTURING CO."

## PROGRESS IN SCIENCE AND THE ARTS.

**Technical Brevities.**—The art of *diamond-cutting* is reported to have been developed to a high state of excellence in this country. The report of the special Census Agent on this subject has the statement that our dealers are receiving the best Amsterdam-cut gems from abroad to be recut here and returned.—Apropos of the recent newspaper statements to the effect that De Lesseps had succeeded in interesting a powerful syndicate in behalf of his canal scheme, and that large amounts had been subscribed, later information received indicates that neither of these statements is reliable. On the other hand, it appears at present as though De Lesseps would not be able to get a sufficient amount subscribed to warrant him in commencing operations. It is semi-officially stated that parties in this country who had agreed to participate in the scheme now decline to do so until they are assured that the larger portion of the funds required has been guaranteed.—Dieulafait has shown the presence of *copper in the ashes of plants* grown on primitive rocks. In many cases, the amount of copper found was considerable enough to give a distinct reaction with ammonia, from one grain of the ash.—It has been a favorite theory with some that the *form of a lightning-rod* had a decided influence on its electrical conductive capacity, the favorite notion being that, the greater the extent of surface, the better. This idea, though it never had any scientific supporters, has been effectually disposed of by the English electrician, Preece, who has lately made a series of experiments with a number of conductors of various shapes—ribbons, tubes, and solid cylinders—all of the same weight. He found no appreciable change in the resistance, and the fact was experimentally proved that the extent of surface does not affect the rapidity of neutralization of an electrical discharge, and that, whether in the form of a cylindrical rod, tube, or wire rope, a lightning-rod is equally effective.—It is reported that works for the manufacture of *glass from slag* have been started at Poughkeepsie, N. Y., though with what success we are not informed. The process has met with considerable success abroad, and there should be no difficulty in making it profitable here.—The *iron-clad Italia*, 14,000 tons, covered throughout with armor plating three feet thick, and said to be the most powerful vessel ever constructed, was successfully launched a few days ago.—Our neighbor, the *Sanitary Engineer*, makes the astonishing statement that the city of Paterson, N. J., has increased by *emigration* 15,000 during the past six months. It would be interesting to know how long it would take, at that rate, to depopulate the town.—The town of Leeds, in England, it is reported, is supplied with gas at a cost of 1s. 10d. per 1000 cubic feet. This is said to be the lowest price at which gas has ever been sold in Great Britain—and we may safely add—or elsewhere. The cheapening of price, it is added, has greatly stimulated the general use, in the borough, of gas for fuel and for running gas-engines.—At the Düsseldorf meeting of the British Iron and Steel Institute it was stated, as the result of experience, that, although the plant as yet introduced is imperfect and unsuitable, the average *waste in dephosphorizing* is under 16 per cent, and in some cases under 12 per cent. This is bringing the figures very close to those of the waste in the ordinary Bessemer operation.—One of the industries that, within the past few years, has attained a position of great importance in the Southern States is the manufacture and refining of *cotton-seed oil*. This product is so admirably manipulated that it is largely used as a substitute for olive-oil, not only in this country but also in Italy. Of the six millions of gallons of cotton-seed oil exported from this country during last year, nearly all went to that country, and most of it doubtless found its way back again in the guise of genuine olive-oil.—The *Railroad Gazette* of October 8th reports the construction of 3938 miles of *new railroad* up to that date during the present year, as against 2328 miles constructed for the same period of 1879, 1320 miles in 1878, 1505 miles in 1877, and 1719 miles in 1876. At the rate indicated, the year 1880 will not fall far short of 5000 miles of new railroad.—The same journal has an editorial on the traffic of the proposed *Panama Canal*, in the light of the figures lately presented by Mr. Nimmo, the Chief of the Bureau of Statistics. The *Gazette* places a high value on the figures and conclusions in question, and expresses the opinion that all other so-called estimates of the traffic that would use the canal have been merely guesses in comparison with these carefully collected and detailed statistics, the preparation of which is a service to the world, by which it is likely to profit, and is extremely creditable to the Bureau.—The *Women's Silk Association* of the United States, with head-quarters in Philadelphia, shows signs of vigorous vitality. At the late State Agricultural Exhibition, held in the Main Building of the Centennial Exhibition, the Society had an admirable display of silk-worms, cocoons, and reeled silk, which attracted universal interest, and which was properly acknowledged by the award of a number of prizes.—The *London Telegraphic Journal* editorially doubts the accuracy of the conclusions drawn by Professor Graham Bell, expressing the opinion that, while it is possible that Professor Bell may have made more numerous experiments than those described by him in his paper, those detailed are hardly conclusive on the point that the observed phenomena were due to the action of light-rays alone. The *Journal* is disposed to give Professor Bell the highest credit for the discoveries made, but at the same time remains doubtful of the accuracy of all the conclusions drawn from them. So far as we have examined Professor Bell's statements, the conclusions he draws from his experiments appear to be incontrovertible.—The *use of the telephone in the collieries* of the United Kingdom is extending. The latest issue of *Iron* contains an account of two collieries in which this instrument has been introduced as a means of ready communication to the miners.—The same journal conveys the information that Messrs. Bolckow, Vaughan & Co., who will be recalled by our readers as the first to test the practicability of the *Thomas-Gilchrist dephosphorizing process*, have been very successful with the preliminary trials of their two new 15-ton converters, working on Cleveland iron. The quality of the steel produced has proved to be very satisfactory.—Mr. J. D. Weeks, Secretary of the Western Iron Association, who has just returned from an examination of the iron ore-beds in the vicinity of Lynchburg, Va., pronounces them to be the greatest he has ever seen, not even excepting the Iron Mountain or Lake Superior districts.—At present writing, nearly 400 men are reported to be at work on the *Cape Cod Ship-Canal*. Its undertakers expect to have the work finished within two years. The length of the water-way will be about 8

miles; the canal will have a width at bottom of 66 feet, and at top of 250 feet. The cost of building is estimated at \$2,500,000.—The French patent of MM. Barbieux & Rosier, under the title of *Savon de Benzine*, describes a method of saponifying all the natural mineral oils, as well as those obtained from schist, asphalt, and similar sources, by adding to the oils in question about 15 per cent of stearic acid, and then three parts of animal grease to two parts of the acidified petroleum. Such a process, if it works smoothly, should possess great practical value.

**CARDIFF COAL EXPORTS.**—The statistics of the coal and export trade of Cardiff show that the activity prevailing during the first half of the present year has not been maintained during the past three months. As compared with the shipments of the first-mentioned period, those of the latter period show a falling off of some 37,000 tons, or, in other words, the total shipments of the present year up to the 30th of September are about 37,000 tons less than the total of June 30th would have led us to anticipate. The falling off is principally noticeable in the shipments to France, Egypt, the West Indies, China, Germany, and Spain. In the shipments of the last three months, there has been a noticeable increase in those to Italy, the East Indies, Brazil, Turkey, and Japan.

**IMPENDING ABOLITION OF PUDDLING.**—Recent information from Europe concerning the dephosphorization process of converting pig-iron, furnished by M. Pourcel, of Terre Noire, France; Mr. Pink, of Hoerde, Westphalia; Professor Von Tunner, of Leoben, Austria, and other metallurgical experts, renders it probable that the laborious and unhealthy process of puddling will be shortly superseded. These and other eminent men differ as to the precise nature of the product of the pig-iron dephosphorized in the Bessemer converter; but all unite in regarding the material so produced as being certain to render puddled iron almost unnecessary. The ingot iron or steel made from phosphoric pig in the Bessemer converter is malleable, will weld, and bears severe tests for ductility, contraction of area, etc. This being the case, finished iron should be materially cheapened when the process has made greater progress. In Germany, dephosphorization is conducted on a large scale, and new works, with a total capacity of 600,000 tons per annum, are erecting there and elsewhere on the continent.

## CANADIAN NAVIGATION.

A project has been brought forward for the construction of a few works, to make available for continuous barge navigation some extensive Canadian lakes and rivers. Large steamers now ply on Rice Lake, Sturgeon Lake, Cameron's Lake, Chemong Lake, Lake Simcoe, and Lake Couchiching, and on the rivers Trent and Otonabee. The distance to be connected by means of locks and a few short cuttings forms but a small portion of the extent of navigation which would be opened up in their construction, there being now between the Bay of Quinte and Lake Simcoe 136 miles of existing navigation, which is for the most part now used for the purpose of local trade. It is not, therefore, a canal which is to be built, but a series of short works, which will allow present facilities for water transportation to be utilized. By recent surveys and examinations by Mr. Stark, C. E., it has been demonstrated that a connection can be made between Bay Quinte and Georgian Bay by a five-foot canal, with 136 miles of clear navigation and 62 lockages, at a maximum cost of \$3,000,000. It is urged that this outlay would make it possible to secure for the Trent Valley route a large share of the great and growing trade of the Northwest.

## PETROLEUM STATISTICS.

COMPARATIVE SYNOPSIS OF REPORTS FOR AUGUST AND SEPTEMBER, 1880 AND 1879.

42 GALLONS = 1 BARREL.	1880.	1880.	1879.	1879.
	August. 31 days.	Septemb'r 30 days.	August. 31 days.	Septemb'r. 30 days.
Production for the month, bbls.....	2,157,228	2,055,030	1,892,302	1,856,700
Daily average.....	69,588	68,501	61,402	61,890
Stock at the wells.....	14,413,944	15,216,339	7,390,945	7,620,525
Iron tank stock.....	14,413,944	15,216,339	7,390,945	7,620,525
Total stock.....	13,500	13,825	11,585	11,760
Number of producing wells.....	515	491	258	270
"    drilling wells.....	368	356	383	200
"    "    completed.....	16	11	11	11
"    "dry holes.....	8,713	8,806	6,448	4,746
Aggregate daily production of new wells.....	23 4-10	24 7-10	22 4-10	23 7-10
Average.....	469	472	306	286
Number of rigs building.....	1,394,129	1,252,635	1,808,239	1,627,120
Total shipments out of the region.....				

—Stowell's Petroleum Reporter.

## MARQUETTE, MICHIGAN.

Marquette is situated on the south shore of Lake Superior, and has one of the finest harbors on the lake, which, under the protection of the government breakwater, may be entered without difficulty during the most severe storms. Some twenty-five years since, the town was a mere hamlet; but with the development of the local iron mines, it has gradually improved, and now it numbers about 5000 inhabitants. Its site is very picturesque and attractive. A high range of quartzite skirts the southern limits of the city, and near the east end is Mount Mesnard. The summit of the mount commands a fine view of the country to the north, south, and west. The north portion of the city is built upon a broad range of greenstone, and has an elevation of 80 feet above the lake. The Holly Water-Works, supplemented by additional machinery made at the Iron Bay Foundry, supply the city with lake water, containing only 2½ grains of mineral water to the gallon. Marquette is the eastern terminus of the Marquette, Houghton & Ontonagon Railroad, and the western terminus of the Detroit, Mackinaw & Marquette Railroad, now in course of construction. The advantages which this new outlet will afford to Marquette and its mining interests are many. The road passes through an almost unbroken wilderness, the soil of which is well adapted to agricultural purposes. It will cheapen all farm products. Portions of the country which this new line traverses are heavily timbered with fine hard wood, which can not fail to attract



the attention of charcoal iron-workers. The iron ore docks extending out into Marquette Bay belong to the Marquette, Houghton & Ontonagon Railroad Company and to the Cleveland Iron Mining Company. Their aggregate daily capacity is 10,000 gross tons.

#### HISTORY OF TIN MINING IN BOHEMIA AND SAXONY.

The interesting and exhaustive paper upon this subject, contributed to the *Oesterreichischen Zeitschrift für Berg- und Hüttenwesen*, by Dr. Eduard Reyer, of Vienna, has just been separately reprinted in pamphlet form. The history commences at the end of the twelfth century, and it appears that in 1241 the fame of the rich Bohemian tin ore had reached England. Dr. Reyer gives, among other things, a valuable table of the prices of tin in Bohemia and in Saxony from 1479 to 1872, the earlier portion being taken from a manuscript in the library of the University of Prague, and the continuation from original data found in the archives of Dresden, Freiberg, Platten, and Schlackenwald. From seven Rhenish florins per centner (cwt.) in 1479, prices advanced pretty gradually in Bohemia until 1816, when they reached from 225 fl. to 236 fl., falling to 50 fl. to 60 fl. in 1866, and recovering to from 98 fl. to 105 fl. in 1872. The fluctuations in Saxony do not appear to have been so great. The tin production of Austria and Saxony has declined, the former from 12,000 to 500 centners, and the latter from 8000 to 2000 centners, the combined decline being from 20,000 centners in 1500 to 2500 centners in 1850. The produce of the ore does not seem to have materially varied, ranging between  $\frac{1}{3}$  and  $\frac{1}{2}$  per cent, and the schlich giving from 50 to 60 per cent of metal. There is one rich lode near Graupen which yields 3 per cent of tin. The pamphlet, which is published by the author, and which can be obtained through Messrs. Trübner & Co., Ludgate Hill, contains many references to early tin mining regulations, the first printed for Altenberg being in 1568, and there is much useful information, both with regard to Altenberg and Schlackenwald. The entire paper appears to have been prepared with much care and judgment, and must have involved a large amount of labor and research.—*London Mining Journal*.

#### GENERAL MINING NEWS.

##### ARIZONA.

**ARIZONA CONCENTRATION COMPANY.**—The *Arizona Sentinel* of the 9th inst. says: The Arizona Concentration Company is now working 50 men and dry washing from 50 to 100 tons of dirt daily. The dirt goes from \$2.50 to \$25 per ton. The last clean-up of 33 tons averaged \$3.75 per ton, and one lot of 25 tons gave \$8 per ton. This company has an immense field for operation. It has machines for working 100 tons of dirt per day, and dirt enough to last for several years. It will soon have 100 machines at work, with a capacity of eight tons to each machine.

The Murphy mine, Dos Cabezas District, has been sold for \$35,000 cash. The Ewell Springs mine has been bonded for \$50,000.

##### CALIFORNIA.

###### THE BODIE DISTRICT.

The *Bodie News-Standard* of the 11th inst. has the following local mining notes:

**BELVIDERE.**—On Saturday, the main shaft of the Belvidere was down 36 feet below the 600 level, having been driven 8 feet during the week. The main south drift, 600 level, was in 103 feet, having been driven 20 feet during the week. There is no change to note in the shaft. A station will be opened at a depth of 650 feet, and the shaft continued to the 700 level. On the 600 level, the main south drift shows from 12 to 24 inches of fair ore. The increased proportion of gold is noticeable in going south, both in this and the levels above.

**BOSTON CONSOLIDATED.**—The north drift on the 300 level was advanced during the past week 13 feet; total length, 172 feet. The grade of ore in this drift has increased in value. The quartz in this drift is about two and a half feet thick, and well defined. The increased value of quartz in this vein as we approach the point where it connects with the main lode is important, and confirms the belief that a valuable body of ore will be developed at the junction of these two veins. The stopes on the 200 level widen as we advance north, and are yielding ore of good milling grade. The ore in the face of the north stopes is from  $2\frac{1}{2}$  to  $3\frac{1}{2}$  feet thick. We are hoisting what ore the machinery will hoist, when not engaged in hoisting ore and debris from the 300 level.

**DOUBLE STANDARD.**—The south drift is in 80 feet. The ledge continues the same width as at last report—about 2 feet. The north drift is in 79 feet; progress for the week, 12 feet. The ledge here is about 18 inches wide.

**JUPITER.**—The main south drift, 600-foot level, is in 350 feet; progress for the week, 11 feet. Some overhauling and repairs to the hoisting-engine interfered with progress underground during the week, two days having been consumed by this necessary work. The machinery is now in first-rate order, and work was resumed in the south drift, 600-foot level, on Saturday. The ground is working well and the ledge showing considerable improvement.

**NOONDAYS.**—The 200 south stopes are yielding the usual amount of good ore. The 300 south stopes are looking well; the east prong of the vein looking well, both in the stope and in the face of the drift. The 300 north stope has improved during the week. The 400 south drift has been extended 22 feet during the week; the vein looks well and is furnishing good milling ore. The No. 2 north stopes continue to improve. The vein is between eight and ten feet wide, of good milling ore. The west cross-cut, 512 level, has been extended 35 feet during the week. The machinery at the mines and mills all working well.

**SOUTH BULWER.**—The north drift on the 550 level was advanced 10 feet during the past week. The ledge is six feet between the walls, and is of a good character of ore.

**SOUTH NOONDAY.**—The north drift on the 550 level was advanced nine feet during the past week, giving it a total length of 145 feet. In the face of the drift, the ledge is looking well, being five feet in width of good milling ore.

**SUMMIT.**—The upraise in East Summit ledge is up 40 feet; progress for the week, 14 feet. The ledge continues about six feet wide, with no change to note.

##### CANADA.

###### NOVA SCOTIA.

The *Chignecto Post* says that valuable discoveries of silver and lead mines have been made in Guysboro' County. Lead ore has been discovered at West River, St. Mary's, that panned out 70 per cent pure lead when taken to England. Two miles from this, the same ore has been found, and it is believed to be the main lode.

##### COLORADO.

###### BOULDER COUNTY.

The *Boulder Banner* prints the following regarding Boulder mines: The Native Silver lode, at Caribou, is yet to see its brightest days. Having passed through over 200 feet of "cap," it opens up with a rich pay-streak.

The Caribou mine, while "lawing" was going on, was "gophered" to the fullest extent of the art. But since all differences have been legally adjusted, the mine is worked systematically. In one of the drifts running east from main shaft, there is a body of good ore stripped fully 80 feet along the vein. When all is ready and stoping commences, the daily output will be worthy of note.

The Seven-Thirty is working along steadily under the watchful eye of the owner, and yielding up good paying ore.

###### CLEAR CREEK COUNTY.

**CONSOLIDATED COLORADO CENTRAL.**—The *Georgetown Courier* says: This company gives employment to a force of about 80 men at present, and is producing an average quantity of ore. The grade of the Marshall tunnel has been cut down so that it will average about one foot rise for each 100 feet that it enters the mountain, and the laying of a new heavy T-rail track is about completed, so that in the course of a couple of weeks work will be recommenced at driving the tunnel ahead, a contract for that purpose of 100 feet having been already let. On No. 10 lode, the one nearest the breast of the tunnel, sinking and raising are going forward just east of the tunnel. Shaft No. 1, on No. 5 lode, has gained a depth of 230 feet below the tunnel level, and is still going down perpendicularly. A cross-cut is driving north and south near the bottom of the shaft for the ore-veins, but is not far enough in yet to reach them. The level east from this shaft is timbering, work at driving the level ahead having been suspended during the timbering. In the west level, the timbering has been completed, and work at drifting has been resumed. Shaft No. 2 is down 190 feet, and work at sinking is still prosecuted, and also the level east, to connect with the level from shaft No. 1, and the level west are driven steadily ahead. As soon as the work of sinking is completed, a cross-cut for the ore-veins will be started. Work is going forward on three of the levels on the north ore-vein, and on one of the levels the middle ore-vein is also worked. The ore-bodies have been of good size and quality since our last report, and give promise of continuing to produce in a satisfactory manner in the future.

A late issue of the *Register-Call* has the following items from the Idaho District: Work has been suspended on the Trio tunnel. The miners employed in that mine, before the recent closing down of exploration, stated to the *Register-Call* reporter that a good vein of ore had been broken into in the 100-foot west level. Probably another game of "freeze out" is going on.

The Lucerne Mining Company is driving its cross-cut south; but it is quite likely that as soon as the resident agent returns from the Eagle River mines, a different line of tactics as regards development will be inaugurated; for they are much needed, if the mine is ever put into pay.

**THE MIDAS TUNNEL.**—This has penetrated Maryland Mountain a distance of 300 feet, and has crossed three different veins of mineral and stamp dirt. The Eida lode has a 12-foot crevice, all mill ore, which averages 3 ounces gold per cord. The Baby Mine, another of the veins intersected, carries 2 feet of crevice matter, from 6 to 16 inches of mineral, and the rest stamp-rock. Drifts have been run on both veins east and west, and a winze is sinking below the east level on the Eida lode, and has passed through ore its entire depth, that of 35 feet. The Dallas vein is 3 feet in width. A 40-stamp mill will be erected at the mouth of the tunnel. The ore is piling up awaiting the completion of the mill.

The new engine and hoister recently placed over the Tropic mine are giving the best of satisfaction.

The Castleton has attained a depth of 312 feet. A force of miners is engaged in driving a tunnel on the vein of that lode. The present tunnel heading is now in from its entrance to the mountain side some 300 feet, and the last several feet of ground passed through seem to have been in pinched ground. At a point 450 feet from the tunnel entrance, a 12-foot winze was sunk to more fully define and test the width and richness of the Lake View lode. At that depth, a good vein of ore is exposed, which gives a fair indication of the vein-matter so far as the lode has been explored. There is a large quantity of ore, cobbled, ready for transmission to the smelters.

###### LAKE COUNTY.

Our latest Leadville exchanges bring the following news regarding these mines: **BANGKOK.**—A diamond drill is about to be started up in the Bangkok shaft on the northeast end of Fryer Hill. The shaft has been sunk to about 300 feet, great difficulty being experienced in controlling the water. The drill will now be tried for a time.

**CHRYSOLITE.**—The *Leadville Herald* of the 14th says: It is as yet impossible to work in either this or the Chief, owing to the density of the gas. Mr. Rolker, of the Chrysolite, has objected to making openings in his territory and starting the blower running in the Roberts shaft, as long as the Chief remains open, as he believes it will simply create a double draught which will do no good. Three men were taken from the Chief shaft on Tuesday in an exhausted condition. The gas seems to be proving a more serious obstacle than was at first believed possible.

**DUNKIN.**—The *Leadville Herald* of the 16th says: Yesterday, the *Herald* reporter visited the underground workings, and although knowing the mine has recently greatly increased its output, was surprised at the improved condition. In the month of September, the net yield from the ore sold to the smelters amounted to \$24,360. This was from the sale of 302 tons of ore, forty tons of which were of low grade and brought but about \$10 net per ton. This shows a very high average for the general yield of the mine. During August and September, the mine has produced a net yield of over \$37,000 over and above all working expenses. The output is now an average of ten tons per day, and this amount will soon be largely increased, as will be shown from the condition of the mine. On the property are three shafts. The discovery-shaft has been sunk to a depth of 200 feet, and from it has been taken some ore. It is connected with the present principal shaft by a drift on the second level. Two hundred and forty feet from the present working-shaft, a new shaft was started last summer, and reached the depth of 204 feet. Contact was struck, but work had to be abandoned on account of water. The present working-shaft is the only one in active operation at the present time. Over this is a good shaft-house and machinery, with ore-bins constructed on the side of the building. All is conveniently arranged, and while no extravagance has been indulged in to construct extensive surface improvement, all required is furnished. The mine is owned by the Dunkin Silver Mining Company, a New York corporation. The main shaft is 200 feet in depth; it is located 320 feet from the south end of the claim, and about midway between the east and west lines.

The first level is at a depth of 110 feet, and this was first visited. Here a level extends west to the Climax line, and 20 feet from that line a drift runs south for 200 feet. At 110 feet on this drift, a cross cut extends east for 80 feet, and thence back to the north for 20 feet. West from the south level to the Climax line, the ground has been stoped out, but on the east all is yet undisturbed. On the sides of these openings, numerous streaks and pockets of ore are exposed, as yet left for future development. The drift turning to the north is 100 feet south from the shaft. Here a very extensive ore-body has been developed. The drift extends into it for 27 feet, and the ore-body shows two sets high of timbers, or a thickness of fully 15 feet. A cross-cut here has been started, both east and west, which shows the ore-body is extensive. The drift running north is being continued, so as to connect with a new level from the shaft. This latter is also pushed, and but 26 feet remain to be driven, till connection is made, and the ore can then be mined much more readily and at less expense. On the second level are the most extensive developments, and numerous cross-cuts and drifts have been made. About 20 feet east from the shaft, an opening has been made down through an old stope which connects the two levels. Several men are here employed, and a fine showing of galena ore is made. South and southeast from the shaft on this second level, but on the raise of an incline, there is a good vein of mineral and a large extent of unbroken ground. A drift also runs north on this level for a distance of 120 feet, where it is directly over a drift from the lower

level, and here a winze is making to connect the two workings. On the third level, there is a main drift 660 feet in length, running north and south. It extends 200 feet south and 460 feet north from the shaft. At 80 feet north, an up-raise has been made to connect with workings above. Here a good vein of galena is followed. Returning to the second level, a drift extends to the Matchless ground. Some ore is found in patches along the entire sides of this drift. A little south from east from the main shaft on the Dunkin, the Matchless has driven a westerly drift to the Dunkin line, and in fact it has passed two feet beyond the line. This is a double drift, two sets of timbers high, and shows in the face, which is in Dunkin ground, 18 feet of solid ore-body. It is at this point one of the finest showings on Fryer Hill. There is a large amount of unbroken ground in the Dunkin before this face, and it seems almost a certainty that a large amount of ore will here be extracted. There has been a large amount of dead or unprofitable work done on the Dunkin, but that recently prosecuted seems in the right direction, and is proving up the property.

**LA PLATA.**—This mine is turning out large quantities of ore. The grade is not very high in silver, running but from twenty to thirty ounces to the ton, but it carries a large percentage of lead, and is therefore valuable to the smelters in the reduction of other ores, as well as for the silver contained in it. Only enough is taken out to furnish the needed lead ores for the La Plata smelter.

**LEADVILLE CONSOLIDATED.**—The Leadville Herald of the 12th says: Twenty tons of ore were yesterday shipped from the Carbonate mine of the Leadville Company to the Grant Smelting-Works. The Carbonate, after months of successful operation, was compelled to close down some months ago, and the property has since been generally looked upon as of no account. It now proves there remains considerable ore in the old workings, and likely the mine can again prove valuable. Some small lots of ore, recently sent to smelters, returned as high as 224 ounces of silver to the ton.

**PARK COUNTY.**

**FANNY BARRETT.**—The Fairplay Flume says this mine under its new management is proving up very rapidly. In the lower level north of the upper level going south, there has been a large body of good-grade ore exposed within the past week. Where the miners are at work on the Mosquito side, they have just started, and have thus far followed in from the very surface upon a large vein of good-looking mineral. Two ore-houses are under course of erection, one 50 x 14 over the main shaft, and one 16 x 14 over the shaft south of the main shaft, which is sinking to connect with the levels in the lower workings. This mine is working a force of 16 miners, which number will be largely increased as soon as the buildings now going up are ready for occupancy.

**SAN JUAN COUNTRY.**

**SEVEN-THIRTY.**—The Silver World says that this mine is a large, well-defined vein, showing croppings on the surface over 60 feet wide. It trends almost east and west, with a heavy north dip. It is on the north side of Lake Como, and was first located in 1874 or 1875 by J. W. Thompson, who, after having held it a few years, sold to the British Consols Silver Mining Company, who drove a tunnel along the foot-wall a distance of 75 feet, making no attempt to find out what was really in the vein. The claim changed hands again last spring, being purchased with two other claims (the Anchor and Black Spar) by the Seven-Thirty Consolidated Silver Mining Company, which evidently means business. Operations began by enlarging the dimensions of the tunnel driven by the former company to 3 x 7 feet, and contracts have just been let for the continuation of the same a distance of 300 feet further, intending to cut in a slanting direction across the vein to the hanging-wall. Some fine mineral has been taken out by the various owners. The mineral now taken from the foot-wall is composed of fine galena, pyrites of iron, with indications of gray copper in it, and is supposed to run both in gold and silver. There is a chasm on the north side of the vein from which a cross-cut could be driven a distance of 150 feet, cutting the vein at a depth of about 250 feet, and opening up immense stopping ground.

**MONTANA.**

From the Butte Miner of the 10th inst. we extract the following:

**ALICE.**—The water column not having yet arrived, it has been deemed inexpedient by the superintendent to resume the running of the cross-cut; for if Professor Clayton's assertion that the vein at the depth of 700 feet will be found to have changed its dip to the south shall prove correct, the caution of the present manner of working will be vindicated. In all the five levels and the drifts and stopes, workmen are employed in extracting ore, which is accumulating on the dump much more rapidly than the mill can handle it.

**ANSELMO.**—The stope from the 70-foot level continues to yield some rich carbonate ore, of which several shipments have been made. The drift running west from the bottom of the shaft at a depth of 105 feet has been extended to a length of 58 feet, showing up in the face a fine body of quartz, compact, clean, and rich. In the new shaft, operations are confined to stoping from the short drifts recently run on the cross-vein. The product pays well for handling, but is not remarkably rich.

**GAGNON.**—The output of ore continues at about 30 tons per day, most of which is shipped to the Colorado works for reduction. It is intended in the near future to resume the sinking of the main shaft from the 225-foot level and to ascertain the character and richness of the property at as great a depth as the sinking capacity of the machinery will allow. It is likely that the shaft will be sunk to a depth of 500 feet during the coming winter.

**ORIGINAL.**—On the 100-foot level, a force of men is employed in extracting ore from the stopes, which is separated into two classes on the dump. Of the first class, which assays high, over 150 tons are ready for shipment. The east and west drifts on the 100-foot level are not extending. The incline shaft is now the principal point of operation, having been sunk to a depth of 180 feet. The vein, which is about two feet wide, is compact and clean, but is somewhat irregular as to direction, appearing and disappearing from the shaft several times within the past 80 feet.

**NEVADA.**

**SUTRO TUNNEL.**—The Sutro Independent says: Following is the report of progress in the North Lateral Branch, for the week ending Oct. 8th, 1880, the header being 8 x 10 feet:

Number of feet driven at last report.....	4368
Number of feet driven since.....	35
Total number of feet in branch.....	4403
Following is the report of progress in the South Lateral Branch, for the week ending Oct. 8th, 1880, the header being 8 x 10 feet:	
Number of feet driven at last report.....	1784
Number of feet driven since.....	62
Total number of feet in branch.....	1846

**COMSTOCK LODE.**

The Gold Hill News, in its review of Comstock mines for the week ending October 13th, says: From the California, through Ophir and into Mexican at least, possibly into Union, the ore-vein swings its hanging-wall strongly to the east. Its foot-wall holds a northerly direction. From Sierra Nevada, the east clay, as the vein makes into Union, bears strongly to the southeast, while, as farther south, the west wall has a polar trend. There is, therefore, in Ophir and Mexican and Union a great swell in the vein. It widens into a basin of hitherto unprecedented size. The approaches to this basin have been cut in the ore-body in Sierra Nevada and Union, and in Ophir, both in the Hardy vein and in the strike on the 2000 level. The heavy vein formation in Union and Ophir has been frequently commented upon and its

kindliness noted. An important step toward the development of this ore-body is about to be taken in sinking the winze below the 2500 level away off east on the Ophir-Mexican line. Its progress down will be watched with absorbing interest, as from it indications of the reach of the ore-body and its depth below the 2500 level will probably be gained. The fact that in Ophir, Mexican, and Union each level of increased depth has shown increased strength and promise in the vein warrants this conclusion. Belcher has its pumps in use again, and will soon renew operations on the lower levels. Sierra Nevada is preparing to explore the ore-body found on the 2400 level and cut by the winze to the 2500 level.

**PROPOSALS AND SALES.**

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

Construction of a Sewer, laying, Asphaltum Pavements, etc.; W. Baldwin, Department of Highways, etc., Office of Chief Commissioner, Philadelphia, Pa.....	Oct. 23, 1880.
Master's Sale of Property owned by the Burlington & Southwestern Railroad. (See below).....	" 23, "
For the Supply of Five Thousand Steel Rails, 324 Tons Fittings; Mr. Thulstrup, Danish State Railroads, Aarhus, Denmark.....	" 24, "
Cavalry Horses; M. L. Ludington, Head-Quarters Department of the Platte, Fort Omaha, Neb.....	" 25, "
Grading, Paving, etc.; John Graham, Office of City Clerk, Columbus, O.....	" 25, "
Consolidated Stock (\$2,800,000) of the City of New York, exempt from Taxation, Interest at 4 per cent per annum; payable in 1910, secured by the Sinking Fund; John Kelly, Comptroller City of New York, Finance Department Controller's Office.....	" 25, "
Subsistence Stores; Thomas Wilson, Office of Purchasing and Depot C. S., Omaha, Neb.....	" 25, "
Repairing Third Street Bridge; John French, Department of City Works, Municipal Building, Brooklyn, N. Y.....	" 25, "
Erection and Completion of a New Draw-bridge, Center Pier, Abutments and Approaches; W. H. McDonough, Room 67, Phoenix Building, Court street, Brooklyn, N. Y.....	" 25, "
Improving Rahway River, N. J.; N. Michler, U. S. Engineer's Office, Army Building, cor. Greene and Houston streets, New York City.....	" 25, "
Sewering Main Street, Fulton Avenue, and the Boulevard in Astoria, Long Island City; Cornelius Rapelye, Commissioner's Office, Astoria, Long Island City.....	" 26, "
Furnishing the City of Council Bluffs, Ia, with Water for Fire Protection and Public Use; Jacob Williams, Chairman Water-Works Committee, Council Bluffs, Ia.....	" 26, "
Sewers, Grading, etc.; Office of Department of Public Works, New York City.....	" 27, "
Furnishing and Delivering Straight Pipe, 12-inch Pipe, with Branches and Special Castings; Office of Department of Public Works, New York City.....	" 27, "
Tenders for the Purchase of the Steamer Richelieu; Mr. John Kennedy, Harbor Commissioner's Office, Montreal, Canada.....	" 27, "
Rebuilding Abutments of Bridge; D. W. Brown, Office of Board of Public Works, Cincinnati, O.....	" 28, "
Constructing a Portion of the Menominee Special Sewerage Works; George Paschen, Comptroller, Office of the Board of Public Works, Milwaukee.....	" 29, "
Dredging in Flushing Bay; John Newton, U. S. Engineer's Office, Room 31, Army Building, cor. Houston and Greene streets, New York City.....	" 29, "
Construction of Protection Works on the Western Side of the Entrance to Rondeau Harbor, Lake Erie; S. Chapleau, Sec. Department of Public Works, Ottawa, Canada.....	" 29, "
Construction of a Pile Dike in Canarsie Bay; John Newton, U. S. Engineer's Office, Room 31, Army Building, corner of Houston and Greene streets, New York City.....	" 29, "
Dredging Newtown Creek, East River; John Newton, U. S. Engineer's Office, Army Building, New York City.....	" 29, "
Subsistence Stores; E. B. Atwood, Office of Acting Assistant Commissary of Subsistence, Columbus, O.....	" 30, "
Plans, Elevations, Sections, etc., with Estimates for a New Town Hall; E. Wiltshier, Town Clerk, Town Office, Pietermaritzburg, Natal.....	Nov. 1, "
Medical and Hospital Supplies; Ebenezer Swift, U. S. Army Medical Purveying Depot, New York City.....	" 1, "
Medical and Hospital Supplies; George T. Beale, U. S. Army Medical Purveying Depot, St. Louis, Mo.....	" 1, "
Wrought and Cast-Iron Work required for the Roof of the North Wing of the Building of State Y. Thomas Lincoln Casey, Office of Building for State, War, and Navy, Washington, D. C.....	" 4, "
Baracks—Lamps, Oil, and Wicks; D. H. Rucker, Assistant Quartermaster-General U. S. A., Depot Quartermaster's Office, Philadelphia, Pa.....	" 4, "
Improvement of Broad Creek, Delaware; William P. Craighill, U. S. Engineer's Office, No. 70 Saratoga street, Baltimore, Md.....	" 4, "
Improvement of Harbor at Onancock, Va.; William P. Craighill, U. S. Engineer's Office, No. 70 Saratoga street, Baltimore, Md.....	" 4, "
Construction of an Addition to the Western Pier, Cobourg Harbor, Lake Ontario; S. Chapleau, Sec. Department of Public Works, Ottawa, Ontario, Canada.....	" 5, "
Iron-Works at Moundsville for Sale; Daniel Lamb, Clerk's Office, Court of Marshall County, West Va.....	" 10, "
Construction of Bridge, etc.; James Bell, Office of the Board of Public Works, Sheboygan, Wis.....	" 10, "
Plans and Specifications for the Aiken Court-House; W. M. Jordan, Office of County Commissioners, County of Aiken, S. C.....	" 10, "
Mail Contract; Gilbert Griffin, Post-Office Inspector's Office, Kingston, Ontario, Canada.....	" 12, "
Three-story Hotel Buildings at Green Brier, White Sulphur Springs; J. Crawford Neilson, 49 St. Paul street, Baltimore, Md.....	" 12, "

The property owned by the Burlington & Southwestern Railroad Company, and now constructed in the State of Iowa from Burlington, in the county of Des Moines, through the counties of Lee, Davis, Van Buren, and Appanoose, in the State of Iowa, to the point in the southern boundary of the State of Iowa where said railroad intersects and crosses said State line, and the right of way therefor, road-bed, superstructure, iron, ties, chairs, splices, bolts, nuts, spikes, and all the lands and depot grounds, station-houses, depots, viaducts, bridges, materials, and property heretofore purchased or otherwise acquired for the construction and maintenance of said railway, and all the engines, tenders, cars, and machinery, and all kinds of rolling stock, and all the revenues and income of said road, and all the rights, privileges, and franchises of said Burlington & Southwestern Railway Company, and property and contracts acquired by virtue thereof, including machine-shops, tools, implements, and personal property used therein or along the line of said railway, excepting therefrom the building, machinery, and engine situated at the said railway company's water-tank at the Chariton River, on the said company's right of way in the southeast quarter (34) of the southeast quarter (34) of section twenty-six (26), township sixty-eight (68), range seventeen (17), Appanoose County, Iowa. The railroad improvement from Viele to the Iowa State line and the land belonging to the said railroad company, and the materials, machinery, and fixtures. William T. Love, Special Master in Chancery, U. S. C. C. District of Iowa.

**Sale.**—One Flanders pump, 2,000,000 gallons capacity in 24 hours; can be run either by steam or water-power, or both combined. Two boilers, 45 and 50 horse power, with fittings and connections all complete. One horizontal high-pressure steam-engine, 60 to 80 horse-power, 15-inch cylinder, and 30-inch stroke, with feed-pump, driving-wheel, and heater, complete and all nearly new. One Knowles steam-pump of 600,000 gallons capacity per diem, 6-inch suction and discharge pipe, all complete. All the above machinery is in good order and serviceable condition. Board of Water Commissioners, Troy, N. Y.

A Bracebridge, Ont., dispatch says: Railway prospects are looking up. The Ontario Pacific Junction Company is pushing forward the final location of the line with a view to commencing construction during the coming winter. The company evidently means business this time. Mr. Moberly is now in our neighborhood with a large locating party. The line has been located as far as the South Branch of the Muskoka River, and three alternate lines have been continued for some miles beyond this place. No decision has yet been arrived at as to which route will be finally taken.



Company's mine, Silver Reef, Utah, to October 21st, 1880 :

November, 1879.....	\$35,529.95
December, 1879.....	48,073.92
January, 1880.....	48,088.72
February, 1880.....	35,346.18
March, 1880.....	35,375.67
April, 1880.....	38,105.55
May, 1880.....	52,446.67
June, 1880.....	63,373.74
July, 1880.....	53,121.55
August, 1880.....	50,888.78
September, 1880.....	51,826.91
To date on account of October, 1880.....	23,300.00
<b>Total.....</b>	<b>\$538,477.64</b>

It is difficult to arrive at the production from May to September, 1879, but it may safely be estimated at \$200,000, making a total production of \$738,477.64.

OFFICIAL LETTERS.

**Alexander.**—From a recent report of the assessor of Eureka County, Nevada, we learn that the assay value of the mining and mill improvements of this mine is as follows: Two quartz-mills, \$35,000; 5 smelting furnaces, \$187,500; 92,775 tons of ore smelted from June 30th, 1879, to June 30th, 1880, \$3,512,137.63; net yield of the proceeds of the mines from June 30th, 1879, to June 30th, 1880, \$1,217,117.29.

**Big Pittsburg.**—A recent letter from the superintendent states that a large strike has been made in the Ypsilanti, which is within 50 feet of the Blanchard shaft. The present company has never done any work on the Blanchard shaft since coming into possession of its property.

**Boulder Consolidated.**—A recent dispatch states that the east and west drifts in this mine are looking well, with rich ore in the slopes, particularly in the west, and that the mine is improving daily.

**Boston Consolidated.**—The general superintendent telegraphs from Breckenridge, Colo., as follows:

Rob Roy looking splendid. Mineral matter in full face of Iowa tunnel. Shipped twenty tons from Union mine to smelters yesterday. Five days of snow and very cold. Will ship forty tons from Union to smelters on Monday.

**Bulwer Consolidated.**—The superintendent writes, under date of Oct. 11th, as under:

During the week ending Oct. 9th, we employed 4 miners at \$4 and 1 fireman at \$5, 1 clerk at \$50 per month. The upraise on Stonewall ledge, 400-foot level (with drift), is up 18 feet, having been advanced during the week 16 feet. The ledge in this upraise is about 2½ feet wide.

**Dunkin.**—A recent telegram from this mine states:

A fine ore-body, 15 feet in thickness, has been discovered 100 feet south from the main shaft, in a drift coming from the west, where there is a large amount of undeveloped territory. A drift is now rapidly running from the shaft to connect with the one mentioned. The Matchless mine, next east, has driven a double drift, two sets of timbers in height, to Dunkin line southeast from the main shaft, which exposes there a breast of ore 18 feet thick. The Dunkin cleared over \$19,000 in September, is doing equally well at present, and will soon be able to increase its output.

**Decatur.**—The superintendent telegraphs:

We are making our usual progress in the mine. The water is not quite as quick as it was two weeks ago. I shipped 28 sacks of ore to the smelter yesterday. I think I shall let a contract next week to run two levels, 100 feet each way from the shaft, commencing at a depth of 80 feet.

**Freeland.**—The superintendent reports, under date of the 11th inst.:

The drift on the south wall, Freeland level, has been connected with the cross-cut. We are drifting on the south wall beyond the cross-cut. The stopes in the Freeland level are looking better at present than at any time within the last four months.

**Harshaw.**—A recent letter from this mine says that the mill is now running on full time, crushing 63 tons per day, which is remarkable work for a 20-stamp mill. The ore, however, is a soft chloride, and melts rapidly under the stamps. The bullion yield is about \$3000 per day. The mine is looking well, and is growing richer as depth is attained. The mine has three years' dividends in sight.

**Horn-Silver.**—This company is erecting a six-stack smelter six miles south of here on the Utah Southern Railroad. The facilities for working ores are said to be better here than near the mines.

**Little Pittsburg.**—A recent letter from this mine says that it is in a more prosperous condition to-day than it has been at any time during the past six months. The shipments of the mine amount to about 30 tons per day, and the bulk of it is a fine, hard gray carbonate, containing a great deal of silver and a large percentage of lead. The books of Grant & Co. will show that the entire shipments for the past month brought the company an average of over \$31 per ton over cost of treatment. The mine now shows a large number of fine ore-faces, and is able to produce twice

the amount of the past month if an effort should be made to increase its product.

**Ontario.**—A recent letter from this mines states that the bullion product of the mill, for the first seven days of October, was \$55,045.43, from 316 net tons. Ore extracted from mine during the week, 485 tons, namely, 119 from fourth, 134½ from fifth, and 231½ from sixth level. The stopes throughout the mine are looking and yielding well. The 200 level has been extended west eleven feet, with face of drift in good ore. Ore on hand in ore-houses on October 7th, 4304 tons.

**Plata Verde.**—It is stated that this company is now laying water-mains to connect with the works of Silver Cliff, which, it is expected, will be completed by the 1st of November, when it is anticipated there will be sufficient water for milling, and all other necessary purposes.

**Robinson Consolidated.**—A dispatch received at the office of this company states that the lower level tunnel is completed and that it has a length of 954 feet. The Robinson smelter started on the 10th and commenced crushing ore from the Snow Bank mine. In addition to the Robinson ore on hand, the smelter has been receiving supplies of lead ores from the White Quail and Snow Bank. It is also stated that a body of galena has been found in the Robinson.

**San Pedro and Canon del Agua.**—According to the *Tribune*, recent advices from New Mexico indicate that the gold mines now being operated by this company are proving very valuable. A breast of free-milling ore, 75 feet wide and 8 feet thick, is now exposed. The ore assays from \$20 to \$40 per ton, and the amount now on the dump, from development, work alone, is estimated at from \$15,000 to \$25,000. The new mill is nearly ready for operations. The recent discovery of several springs, which will furnish an ample supply of water for the mill and smelters, will enable the company to increase the capacity of its mill to 40 or 50 stamps. The gold mine alone will, it is estimated, yield from \$800 to \$1000 per day with the present mill of 15 stamps.

**Shawnee.**—A recent letter from this company states that the new machinery has been shipped to the mine, and by the 1st of November next the mine will be drained and the miners at work.

**Silver Cliff.**—A recent letter from this mine reports that the mill, which for a long time has been running, on an average, only about half-time, is now working the full twenty-four hours every day. The water-pipe, which has also been bothering them considerably, is now doing good service. This company shipped 185 tons of bullion on the 14th inst.

**Silver Cord.**—A recent letter from this mine states that a 4-foot body of high-grade ore has been struck at a depth of 380 feet and 75 feet north from the shaft. A. B. Litchfield, manager, has found this below the former workings of the mine. Ore is being shipped regularly. W. W. Weighy, attorney for the Silver Cord, is now here. He represented the company in Denver on Thursday last, and succeeded in having the suit of the Silver Wave against the Silver Cord dismissed, which leaves the latter company free to work its mines.

**Standard Consolidated.**—From the usual weekly letter of the superintendent we quote:

During the week ending October 9th, we employed 83 miners, 24 carmen, 4 skipmen, 5 station-tenders, 3 watchmen, 3 firemen, 3 blacksmiths' helpers, 9 laborers, 1 time-keeper, 3 tram-way men, 1 woodman, at \$4; 2 shift-bosses, 7 engineers, 3 blacksmiths, 4 carpenters, and 2 pumpmen, at \$5; 1 chief-engineer, 1 blacksmith, and 1 carpenter, at \$6; 9 shaft-miners at \$4.25 and 3 at \$5; 7 ore-sorters, 2 woodmen, at \$3.50 per day; 1 foreman at \$250 and 1 clerk at \$150 per month. The new shaft has reached a depth of 955 feet in hard rock. During the week, started to cross-cut east from north drift, 700-foot level; this cross-cut is in 14 feet. The north drift is in 260 feet, showing the ledge about 5 feet wide. The east cross-cut, 500 level, is in 250 feet in hard rock. North drift No. 1, 385-foot level, is in 110 feet; progress during week, 20 feet; the ledge is 5½ feet wide. West cross-cut from upraise No. 2 (south drift) has been advanced 8 feet, and is now in 100 feet. We are now engaged timbering south drift, 550-foot level, 60 feet of which is completed at this date. The stopes are all looking well and show no important change since my last report. The ledge in the stopes, north drift, 385 level, is 20 feet wide, and in south stopes, same level, about 8 feet wide. We extracted and shipped to the mills during the week 1520 tons of ore from the 385, 300, 550 foot levels; the average pulp-assay for week is \$25.01; the crude bullion received, 3290 ounces, and the amount shipped to the company in San Francisco, \$50,624, closing shipments for September, which amount to \$181,057.

DIVIDENDS.

The Barbee & Walker Silver Mining Company has declared its fifth monthly dividend of ten cents per share payable Oct. 25th, at the Mining Trust Company.

Transfer-books close on the 23d, and reopen on the 26th inst.

The Dunkin Mining Company has declared a dividend of 7½ cents per share on its capital stock, amounting to \$15,000, payable on November 1st. The transfer-books will close on October 26th, and reopen on November 2d.

The Eureka Consolidated Mining Company has declared a dividend of 50 cents per share.

The Bank of California has declared a quarterly dividend of 2½ per cent, payable on the 15th inst., to Eastern stockholders, at the office of Laidlaw & Co., 14 Wall street, New York.

The Diamond Coal Land Company announces a quarterly dividend of 3 per cent, payable on demand.

The Father de Smet, which now passes its dividend, turned out \$61,540 in twenty-nine days, ending October 1st.

It is rumored that the Delaware & Hudson Canal Company has \$2,000,000 in its treasury and that a 5 per cent dividend will be declared at the close of the year.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS.						Open- ing, Oct. 22.
	Oct. 15.	Oct. 16.	Oct. 18.	Oct. 19.	Oct. 20.	Oct. 21.	
Alpha.....			4¼		4¼	4¼	
Alta.....	3	2¾	2¾	2¾	2¾	2¾	2¾
Argenta.....							
Bechtel....	1¼	1¼	1¼	1¼	1¼	1¼	
Belcher....	3¾	3¾	3¾	3¾	3¾	3¾	3
Belle Isle.....							
Belvidere.....		7-16			7-16		
Best & Bel.....	10¼	10¾	9¾	9¾	9¾	9¾	8¾
Black Hawk.....							
Bodie.....					3¼	3¼	3¼
Boston Con.....	1¼	1¼	1¾	1¼	1¼	1¼	1.35
Bullion.....	2	2	2½	2½	2½	2½	
Bulwer.....							
Caledonia.....							
California.....	2½	2½	2	2½	2	2½	2½
Cal. B. H.....							
Chollar.....	2¾	2¾	2¾	2¾	2¾	2¾	3¼
Con. Imp.....							
Con. Pacific.....	1¼	1¼	1			13-16	13-16
Con. Va.....	3¾	3	3	3	3	3	3
Crown P'nt.....	1¾	1¾	1¾	1¾	1¾	1¾	1¾
Dudley.....							
Eureka Con.....	19	19¼	19¼	19	18¾	17½	
Exchequer.....	1¼	1¾	1¾	1¾	1¾	1¼	1¼
Goodshaw.....			11-32	5-16	5-16	5-16	
Gould & Cur.....	4¼	4¼	4	4	4	3¼	3¼
Grand Prize.....	1¾	1¾	1¾	1¾	1¾	1¾	
Hale & Nor.....	4¼	4	3¾	3¾	3¾	3¾	3¾
Hillside.....							
Independ'nce.....							
Jackson.....							
Julia Con.....							65c.
Justice.....							85c.
Kentuck.....							
Lady Wash.....							
Leeds.....							
Leopard.....							
Leviathan.....							
Mammoth.....		7-16	¼	7-16	¼		
Manhattan.....			1½				
May Belle.....							
Mar. White.....		21-32	21-32	¾	¾	¾	
McClinton.....							
Mexican.....	8¼	8¼	8¾	8¾	8¾	8¼	7¾
Mono.....			9-16	21-32	13-16	11-16	11-16
Navajo.....							
North Belle.....	10¾	10¾	9¾	8¼	9	9¾	
N. Bonanza.....							
N. Standard.....							
Noonday.....	2	2			1¾	1¾	
Ophir.....	8¾	8¾	8¾	8¾	8¾	8¾	8¾
Orig. K'ys'e.....							
Overman.....	1¾	1¾	1¼	1¼	1¼	1¼	
Potosi.....	2½	2½	2¾	2¾	2¾	2¾	
Ray & Ely.....							
R. de Monte.....							
Savage.....	1¾	1¾	1¾	1¾	1¾	1¾	1¾
Scorpion.....							
Seg. Belcher.....							
Sierra Nev.....	11¾	11¾	11	10¾	11¼	10¾	10¾
Silver Hill.....							
Silver King.....	9¼	9¼	9¼	9¾	8¾	8	
So. Bulwer.....			70c.	19-32	11-16		
Summit.....							
Syndicate.....							
Tioja.....							
Tip Top.....					3¼	3¼	3¼
Trojan.....							
Tuscarora.....							
Union Con.....	15½	15¼	15½	15½	16½	15½	15
Utah.....							
Wales.....	1¾	1¼	1¾	1¼	1¾	1¼	
Yel. Jacket.....	4½	4½	4½	4¼	4¼	4¼	4¼

REVIEW OF THE SAN FRANCISCO MARKET.

With the exception of a slight spurt predicated on the rumored improvement on the 2340 level of the Bullion mine, the San Francisco list still continues in the depressed condition noted so frequently in these columns. The fluctuations during the week have been very slight, and the market is, judging from the prices, stagnant; such changes as have occurred are, without exception, to lower figures. The failure to develop new bodies on the lower workings is more than ever exerting its influence in forcing the attention of mining men and operators to enter other districts, notably

GENERAL MINING STOCKS.

Dividend-Paying Mines.

Table with columns: NAME AND LOCATION OF COMPANY, Feet on Vein, Capital Stock, SHARES (No., Par Val, Total levied to date, Date and amount per share of last), DIVIDENDS (Total paid to date, Last Dividend), HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE (Oct. 16, 18, 19, 20, 21, 22), SALES.

Non-Dividend-Paying Mines.

Table with columns: NAME AND LOCATION OF COMPANY, Feet on Vein, Capital Stock, SHARES (No., Par Val, Total levied to date, Date and amount per share of last), HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE (Oct. 16, 18, 19, 20, 21, 22), SALES.

g. Gold. Silver. s. Lead. c. Copper. \*Non-Assessable. †Assessment paid. ‡Dividend. Total shares sold during the week, 594,405.



3 P. M. CLOSING PRICES.

Table with columns: Bid, Asked, Franklin, Harshaw, Huron, Mesnard, National, Osceola, Pewabic, Quincy, Ridge, Silver Islet. Lists various stock prices.

Boston Mining and Stock Exchange.

The subjoined table shows the opening, highest, lowest, and final sales of all the mining stocks dealt in at the Boston Mining and Stock Exchange, for week ending Oct. 21st:

Table with columns: Stocks, Open-ing, High-est, Low-est, Final, Sales Shares. Lists various mining stocks and their performance.

No. of sales..... 28,255

Coal Stocks.

NEW YORK, Friday Evening, Oct. 22.

The stocks are active and strong, with a rising tendency. The transactions show an increase over those of the preceding week, aggregating 445,676 shares.

AUCTION SALES OF STOCKS AND BONDS.

The following stocks and bonds were sold at auction during the past week: 20 shares of the Mutual Wyoming Coal and Transportation Company for \$5, and \$20,000 Warren Railroad of New Jersey, second mortgage 7 per cent bonds, due 1900, at \$123 1/2.

Gas Stocks.

NEW YORK, Friday Evening, Oct. 22.

The market for this class of stocks is dull and strong. A sale is reported of 10 shares of Metropolitan at \$120 1/2.

The following list of companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 19 Broad street, New York. Quotations are based on the equivalent of \$100.

Table with columns: COMPANIES IN NEW YORK AND VICINITY, Capital Stock, Par, Rate, An. of last, Date of last, Bid, As'd. Lists various gas companies and their financial details.

\* Changed from certificates to bonds, of \$1000 each; 6 per cent per annum.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in at New York, Philadelphia, and Baltimore, for the week ending

the 14th inst., are given in the following tables. The Philadelphia quotations will have a \* affixed. The Baltimore quotations are indicated thus †

Table with columns: STOCKS, Par Value, High'st, Lowest, Closing, Sales Shares. Lists various stocks and their market prices.

Table with columns: BONDS, Princ'l, When Due, Int' west, When Due, High'st, Lowest, Amount. Lists various bonds and their market prices.

Table with columns: Oct. 8, Northern Belle, 7, Mount Diablo, 8, Grand Prize, 8, Tuscarora, 8, Northern Belle, 9, Tombstone, 9, Fresno Enterprise, 9, Alexander, one week, 9, Cons. Virginia, 9, California, 9, Star, 9, Eureka, passing, 9, Richmond, 9, Northern Belle, 9, California, 1 week, 9, Kent, 10, Summit, 10, Central City bankers, 10, Germania, 1 car; Morgan, 2 cars, 10, Stormont (a), 10, Barbee & Walker (a), 10, Christy (a), 10, Ontario (a), 10, Horn-Silver (a), 10, Bodie, 10, Central City, 10, Caribou, 10, Richmond, 12, Brooks, 1 car; Germania, ref. lead, 2 cars (a), 12, Hillside (a), 12, Ontario (a), 12, Christy (a), 12, Horn-Silver (a), 12, Brooks, 1 car; Germania, ref. lead, 2 cars (a), 13, Eureka, passing, 13, Gold Hill, 13, Washington, 13, Burroughs, 13, California, 13, Haseltine, 13, Ontario (a), 13, Hillside (a), 13, Horn-Silver (a), 13, Barbee & Walker (a), 13, Central City banks, 13, Standard, 13, California (c), 13, Cons. Virginia (c), 13, Eureka Cons. (c), 13, Northern Belle (c), 13, Mount Diablo (c), 13, Standard (c), 13, Bodie (c), 13, Noonday (c), 13, Black Bear (c), 13, Contention or Western (c), 13, Stormont (b), 13, Stormont. Includes sub-headers (a) Received in Salt Lake City, (b) Received in this city, (c) Received in San Francisco during the two weeks ending October 17th.

ARIZONA.

Pima County has 11 quartz-mills and 3 smelters for the reduction of silver ore, and 1 smelter for copper ore, 10 of which are in operation or ready to operate, and the other 4 will start up within the next 60 days, making a grand total of 15 in all. Eighteen months ago, there was not a mill or smelter in the county.

CALIFORNIA.

Greenville District.—The number of stamps in the various mills in the neighborhood of Greenville are as follows: Green Mountain, 92; Gold Stripe, 39; Plumas National, 30; Kettle (Cherokee), 20; New York, 10; total, 191. The following will probably soon be running: Union & Indian Valley, 58; Crescent, 32; and Monitor, 10; making a grand total of 288 stamps.

Indian Queen.—The secretary of the Indian Queen mine has reported the bullion product of that mine for the past three months as follows:

Table with columns: July, August, September, Total. Shows bullion production for the Indian Queen mine.

Total..... \$40,204

The mill was started on the 16th of July, after having been idle for some time.

Standard.—A dispatch says that during the week ending Oct. 16th, the Standard mine extracted 1340 tons of ore, pulp-assay being \$25.30. Crude bullion received, 2794 ounces. Shipped to company, \$49,486.81.

Standard.—The Standard gold mine has produced, during the first eight months of the fiscal year, the following amounts of bullion:

Table with columns: February, March, April, May, June, July, August, September. Shows monthly bullion production for the Standard mine.

Total..... \$1,245,740.03

COLORADO.

Leadville.—The Leadville Circular of Oct. 15th gives the following table of the approximate daily output of the leading mines of the camp at that time:

Table with columns: Mines, Tons. Lists various mines and their daily output in Leadville.

Total tons..... 795 The Iron Silver's sales of ore for September amounted to \$111,448.62, and its expenditures were \$51,610.67. For the week ending October 8th, \$17,780.88 was received from sales of ore.

The Little Pittsburg Company sold about 600 tons of ore

BULLION MARKET.

NEW YORK, Friday Evening, Oct. 22.

The silver market has weakened in London, but a slight advance in the rate for sterling exchange here partly neutralizes the decline. The market is not firm, and is more likely to touch somewhat lower figures than to advance for the present.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

Table with columns: DATE, London, N. Y. Shows daily range of silver prices in London and New York.

BULLION SHIPMENTS.

We give below a statement showing the latest published bullion shipments, in addition to those announced in our issue of October 16th:

Table with columns: Oct. 2, Picoche District, one week, 4, Diana, 4, Tombstone, 4, Tip Top, 4, Standard, 4, Northern Belle, 5, Alexander, one week, 5, Richmond, one week, 5, Eureka, passing, 5, Young America South, 5, Silver King, concentrations, 6, Day, 6, Grand Trunk. Lists bullion shipments and their values.

In September for somewhere between \$25,000 and \$30,000. Over 125 men were employed, and the profits were equal to about one third of the receipts.

**Gilpin County.**—The gold shipments from Gilpin County through the banks of this city for the month of September, 1880, aggregated \$134,500. The probable output of the Golden Queen for the year 1880 will approximate \$3,000,000, and possibly overreach that sum.—*Central City Register-Call*, Oct. 14.

**Ten Mile.**—The Robinson smelter started on the 10th and commenced crushing ore from the Snow Bank mine. In addition to the Robinson ore on hand, the smelter has been receiving supplies of lead-ore from the White Quail and Snow Bank. It is also stated that a body of galena has been found in the Robinson. The furnaces will be blown in within a few days.

**Silver Cliff.**—The Plata Verde Company, Silver Cliff, will connect its mill with the city water-works by November 1st.

DAKOTA.

The *Black Hills Times* of October 9th publishes the following information from a party who had just visited Strawberry Gulch: The Sunday mill is running along continuously night and day with the most satisfactory results—ten stamps on Hoo-doo ore and ten on Oro Fino. The Oro Fino mine is developing a monstrous ore-body. They are now stopping ore in a 60-foot breast. The milling of ore from these mines has greatly encouraged every mine-owner in the gulch, and they have all gone to work in earnest to open up and develop their mines.

IDAHO.

The Bay Horse mine, Challis, Idaho, has shipped 20 tons of rich ore to the Omaha works. This ore was freighted by wagon over 400 miles, and by rail about 1500, and still it pays.

MAINE.

The Sullivan Company, of Maine, has turned out five small bars of bullion. The North Castine mine has produced two small bricks, worth respectively \$65 and \$68, from a ton of ore.

MONTANA.

The Hecla Company has a smelter at Glendale, Montana, run by water-power, and a number of mines at Trapper Gulch, ten miles distant. For the last week of September, 89 tons of silver-lead bullion of an average value of \$400 per ton, or \$35,600 altogether, were produced. The company's smelting operations are rendered easy by its iron, lead, and various silver ores, and limestone quarry.

NEVADA.

**Barcelona.**—Twenty-three tons of Barcelona ore worked in Eureka and Austin produced bullion valued at \$8804, the average assay per ton being \$363 in silver, and \$20 in gold.—*Belmont Courier*.

UTAH.

Our regular Salt Lake correspondent, writing under date of October 16th, says: Utah bullion shipments for the week ending to-day are as follows:

Ontario, 32 bars	\$51,320.20
Stormont, 8 bars	16,084.76
Christy, 2 bars	4,562.19
Barbee & Walker, 2 bars	4,544.68
Tintic, 4 bars	2,441.60
Crismon, 1 bar	1,812.81
Horn-Silver, 20 cars	50,000.00
Morgan, 2 cars	8,370.00
Brooks, 3 cars	4,550.00
Hillside, 3 cars	5,968.01
Germania, 6 cars	9,400.00
<b>Total</b>	<b>\$159,054.25</b>

ONTARIO.

For the week ended October 8th, the Ontario mine shipped \$55,005, making a total for the first eight days of the month of \$61,790.

MISCELLANEOUS.

**Bullion Receipts from the Mines to New York.**—The bullion received from the mines at the various offices in this city during the week ending with yesterday, as compiled from various sources, amounts to \$288,827.17, as against \$479,968.17, reported in our last.

Exports of Gold and Silver from New York.

Week ending Oct. 16th	\$233,000.00
Corresponding week last year	153,207.00
Since Jan. 1st	6,343,914.00
Corresponding period last year	12,629,889.00

Gold Interest Paid Out by the Treasury.

Week ending Oct. 16th	\$555,912.23
Corresponding week last year	312,346.70
Since Jan. 1st this year	47,510,595.32
Corresponding period last year	49,815,391.92

**WASHINGTON, Oct. 21, 1880.**—The Treasury Department to-day purchased 340,000 ounces of fine silver for delivery at the Philadelphia, New Orleans and San Francisco mints. The demand for standard silver dollars now exceeds the current coinage.

**The Gold Flood.**—LONDON, Oct. 16.—A Paris dispatch to the *Economist*, dated Thursday, says: A further sum of 15,000,000 francs in gold is reported to have been withdrawn from the Bank of France to-day since the issue of the balance-sheet. The demands, unfortunately, were not confined to the United States. In addition to 30,000,000 francs sent there this week and 15,000,000 francs to England, 10,000,000 francs have been sent to Egypt, and 10,000,000 francs to Austria.

**LONDON, Oct. 20.**—The *Times*, in its financial article this morning, says: The gold withdrawn from the Bank of England yesterday (£110,000) went to Egypt to pay for cotton, the crop of which is large.

As to the probable future shipments of gold from Europe, the *Manchester Guardian* says:

There is little prospect of any extensive demand for gold from England for shipment to America, as it is understood that there is an increased business in English manufactured goods on American account. Germany, however, on account of the failure of its rye crop, will require a large amount of maize, and the continental nations seem anxious to augment their reserves of wheat.

The importations of specie and bullion at the port of New York for the week ending Oct. 16th were \$2,831,799, consisting of \$2,806,319 in gold and \$25,480 in silver, as against a total of \$2,715,979 for the correspond-

ing week last year. The importations since the 1st of January and since the 1st of August compare as follows with the movements during the corresponding periods last year:

	Since January 1, 1880.	1879.	Since August 1, 1880.	1879.
Gold	\$35,533,565	\$43,844,948	\$33,579,198	\$43,013,223
Silver	4,066,864	6,726,747	872,358	1,387,194
<b>Total</b>	<b>\$39,600,429</b>	<b>\$50,571,695</b>	<b>\$34,451,556</b>	<b>\$44,400,417</b>

The *Evening Post* of to-day says: Since the beginning of August, the Bank of France has lost some \$36,000,000 of specie, chiefly gold, much of which has come to the United States, the remainder having gone to points in Europe and Asia. A few months ago, the bank was also subjected to a severe drain; so that, since August 1st, 1879, the amount of specie in that institution has been reduced by \$77,000,000.

According to the official estimate, the total amount of gold coin in the country on the first day of the present month was \$369,881,003, and the total amount of silver coin, \$149,799,335. Of the gold, \$302,676,709 was in circulation and in banks, and the remaining \$67,204,293 was in the Treasury. Of the silver, \$77,344,735 was in circulation and in the banks and \$72,454,600 in the Treasury. These figures show the total coin in circulation to be \$519,680,338. There lay in the Treasury \$68,040,540 gold and \$5,557,759 silver. Total gold and silver coin and bullion available for coinage, \$583,278,638.

METALS.

NEW YORK, Friday Evening, Oct. 22.

The market for metals has been quiet, although one or two articles have had a good business. There are no indications of any immediate marked movement.

**Copper.**—This article is in fair jobbing demand, but no large transactions have taken place. The sales have been at 18½¢@19¢. Larger lots are held at 18½¢. The existing contracts with manufacturers have nearly expired, and some new and important business will probably take place after the elections are over.

Our London advices by mail include the 11th of October, from which we glean the following: On the 6th inst., there was a slight weakening, the sales being 150 tons g. o. bs. at £60, 25 tons at £60½, both net, for immediate payment without interest; and 100 tons at £60½, customary cash conditions. In forward deliveries, 25 tons sold at £60½ net, three weeks fixed; 25 tons at £60½ net, for December; and 50 tons, three months, £61½, usual allowances. The 7th was very quiet, there being but one sale of g. o. bs. at £60½, usual cash terms.

On the 8th, there was no anxiety to buy or sell at the prevailing rates, and business was confined to the most pressing wants of purchasers, at £60½, usual cash terms.

Mail advices received in London on the 11th indicated that the earthquake in Chili on the 15th of August had impaired some of the Chili mines, and that on that account the production would be reduced. About 200 tons of Chili Bars sold at £60½@£60¾ sharp cash and usual 14 days, and £60¾@£61 three months prompts. Advices of the 12th say:

Chili Bars are steady, and sellers scarce. We note 100 tons of ordinary brands at £60½ cash, £61½ extended prompt; and 50 tons best mark at £61½ cash. There was a fair inquiry for g. o. bs. at the close at £60½ cash, sellers asking £60¾, usual conditions.

Wallaroo Cake remains £71@£72; Burra, £69@£70, but nothing doing. English quoted as follows: Tough Cake, £64@£65; Select Ingot, £66@£67; India Sheets, £69½@£70; Y. Metal Sheets, @£6 1-16d. per lb.

Messrs. Vivian, Younger & Boud, of London, under date of October 8th, say:

Without any fluctuations of importance during the month, a rather large business has been transacted in Chili Bars from £61 5s. to £80 5s. The market is easier at the close, though without pressure to sell.

There is a considerable falling off in the Chili charters during the first nine months of this year, say 7750 tons, the quantities being 31,850 tons, against 39,600 tons in 1879.

There has been a fair business for India, but partly owing to Indian holidays, there is now less demand.

STATISTICS OF COPPER—JANUARY TO SEPTEMBER, AS PER CUSTOMS RETURNS.

	Jan. 1 to Sept. 30, 1880.	1879.
Imports..	Tons.	Tons.
Pure in pyrites	13,220	9,233
precipitate	13,792	12,810
ore	11,712	10,203
regulus	5,125	5,284
Bars, cakes, etc.	29,504	34,708
<b>Total</b>	<b>73,353</b>	<b>72,238</b>
Exports..	Tons.	Tons.
Raw (English)	10,421	12,372
Sheets	12,397	11,852
Yellow metal @ 60 per cent.	7,278	7,644
Brass @ 70 per cent.	1,994	1,966
<b>Total</b>	<b>32,060</b>	<b>33,834</b>
Foreign	11,961	13,006
<b>Total</b>	<b>44,021</b>	<b>46,840</b>
Imports—foreign	14,579	12,685

	September only, 1880.	1879.
Imports..	Tons.	Tons.
Pure in pyrites	1,214	844
precipitate	1,501	960
ore	1,794	710
regulus	360	782
Bars, cakes, etc.	4,107	2,389
<b>Total</b>	<b>8,976</b>	<b>5,685</b>

	September only, 1880.	1879.
Exports..	Tons.	Tons.
Raw (English)	1,422	1,579
Sheets	1,122	1,540
Yellow metal @ 60 per cent.	812	865
Brass @ 70 per cent.	270	261
<b>Total</b>	<b>3,626</b>	<b>4,245</b>
Foreign	1,486	1,705
<b>Total</b>	<b>5,112</b>	<b>5,950</b>
Imports—foreign	1,897	1,028

Tin.—Straits in London still stand at £88 10s.

Singapore quotes at \$27½, and Penang at \$26.60, with exchange at 3s. 10d. The shipments from the Straits during the first half of this month amounted to 425 tons by steam and 125 tons by sail to the United States and nothing to England. There is a good jobbing trade. We note sales of about 100 tons at 19½¢. We quote Straits at 19½¢@20¢; L & F., 19½¢; Billiton, 19½¢; and Banca, 24½¢.

Our London advices by mail include Oct. 12th, from which we glean the following: On the 6th, there were sales in the morning of about 240 tons at 83½¢@82½¢s. cash, and in the afternoon, 5 tons at 82¢. The 7th opened with business at 83½¢s., selling down to 82½¢s., and reacting sharply to 83½¢s., with sales of about 100 tons. On the 8th, there was an active market; sales are reported of 70 tons for cash at 84@85s.; 60 tons at 84½@84¼¢s., delivery any time this year, and 25 tons at 85¼¢s., three months fixed.

The sales during the 9th and 11th amounted to about 450 tons at 85@86¼¢s. for cash, and 85@87s. for forward delivery. About 1000 slabs of Banca sold at 85¼@86¼¢s. Our advices of the 12th say:

The Billiton sale went off to-day at 58 1-5 fl., equal to about 86s., laid down in Holland. Here we have had a fairly steady market, and about 50 tons Australian and Straits sold for cash at 85¼@86¼¢s., with a small parcel, one month, at 86¼¢s. The final quotation was 86s. cash, and a large inquiry at 85¼¢s., which holders declined to meet. Buyers seem as if they would purchase freely, if important quantities were offered them at the nominal rates.

STATISTICS OF TIN—JANUARY TO SEPTEMBER, AS PER CUSTOMS RETURNS.

	Jan. 1 to Sept. 30, 1880.	1879.	Sept. only, 1880.	1879.
Exports, foreign	6,859	5,886	922	532
English	3,253	4,532	401	633
	10,112	10,418	1,323	1,165

**Tin Plates.**—As intimated in our last, there was a large business done in coke tins, purchases having been made by consumers. With this exception, however, the market has been quiet. We quote, per box, as follows: Charcoal tins, ½ cross, Melyn grade, at 86%, and Allaway grade, \$6@85%. Charcoal ternes, Dean grade, 14 x 20, 85%, and 20 x 28, \$11½@11¼; Allaway, 14 x 20, 85%, and 20 x 28, \$11¼. Coke tins, IC, \$5@84%, and coke ternes, B. V. grade, 14 x 20, 85%.

Messrs. Robert Crooks & Co., of Liverpool, under date of October 7th, say of tin and ternes plates:

"Although exports continue to be on a large scale, stocks here do not diminish much, while makers are not fully employed. This in great part, no doubt, is due to the stagnation of home demand, but it also tends to show a deplorable excess of production, which, if continued, will go far to prohibit any early improvement. At the same time, prices now do not allow margin for much further depreciation, and their acknowledged unprofitableness may before long cause an enforced restriction in make."

**Lead.**—Sales of about 2000 tons of Richmond lead at 4'65c. are reported.

Messrs. French & Smith, of London, under date of October 7th, say:

Lead continued to droop during September. In Newcastle, rich silver from £16 declined to £15 1s. 3d., but has since rallied to £15 7s. 6d. Spanish Soft from £15 15s. declined to £15, at which quotation price is steady. English is £15 5s. to £15 12s. 6d. We estimate the imports last month at about 8000 tons.

The imports and exports, January to August (eight months), were, by the Board of Trade returns:

	1880.	1879.
Imports	61,270	67,060
Exports	20,836	25,107
	82,106	92,167

The shipments of lead from London and Liverpool to the following destinations have been as follows for the first nine months of 1879 and 1880:

	1879.	1879.	1880.
To Madras	201	200	57
" Calcutta	458	310	183
" Bombay	197	596	382
" China	8,235	4,710	5,451
" Japan	854	351	192
" Singapore and Penang	96	101	145
<b>Total</b>	<b>10,011</b>	<b>6,328</b>	<b>6,390</b>



**Spelter and Zinc.**—Spelter has been quiet, and is quoted at 5c. Sheet zinc has been in good demand at 7c.

**Antimony.**—This article is very quiet. Cookson's is quoted at 15½c., and Hallett's & Johnson's at 14½c.

**IRON MARKET REVIEW.**

NEW YORK, Friday Evening, Oct. 22.

The demand for iron of all kinds has been unusually quiet during the past week, and there are still no indications of an early revival. It is a well-known fact, however, that the consumption is quite large, and it is supposed that stocks in many cases must be much depleted, and a very active market is eventually expected.

**American Pig.**—We learn of no business in this article worthy of note. We quote No. 1 Foundry at \$25; No. 2, \$21; and Forge, \$19@20. Makers have the utmost confidence in the future, and are unwilling to contract for next year's delivery at current rates.

**Scotch Pig.**—There has been an advance of about two shillings a ton in Glasgow since our last. This strengthens the views of importers, but does not lead to any business. The only sales we hear of are 200 tons of Shotts on private terms, 100 tons of Coltness at \$23½; and 200 tons on private terms. We quote Eglinton at \$21; Coltness, \$23@23½, and Summerlee, Gartsherrie, and Glengarnock \$23.

Messrs. John E. Swan & Co., of Glasgow, under date of October 8th, report 104 furnaces, against 85 at the same time last year. The quantity of iron in Connal & Co.'s stores was 474,755 tons, an increase of 1146 tons for the week. The shipments show an increase of 134,340 tons since Christmas, as compared with the shipments to the same date last year. The imports of Middlesbrough pig-iron for the same period show a decrease of 12,385 tons. The following are the quotations of the leading brands of No. 1 Pig-iron: Gartsherrie, 59s. 6d.; Coltness, 59s.; Langloan, 59s. 6d.; Summerlee, 75s.; Carnbroe, 55s.; Glengarnock, 54s.; Eglinton, 51s. 6d. Middlesbrough pig-iron was quoted as follows, f. o. b.: No. 1 Foundry, 44s. 6d.; No. 2, 42s.; No. 3, 39s. 6d.; No. 4, 39s.; No. 4 Forge, 38s. 6s.

Messrs J. Berger Spence & Co., of Manchester, England, under date of Oct. 9th, say:

The Northern pig-iron trade continues in a most unsatisfactory condition. Although a little better feeling was engendered late last week principally in Scotch iron, it proved merely of a transitory character, as we anticipated, all the influences at work being too antagonistic for any improvement being sustained. Scotch warrants which late last week were at 51s. 4½d., gradually and persistently declined to 49s., and though they stand higher than this as we write, their position is by no means a safe one. Like the Glasgow market, that of Middlesbrough has completely given way during the week, and has lost any supposed advantage gained by the influence of the advance in the former. On Tuesday, 38s. 3d. for No. 3 was feebly quoted, but sellers were only too glad to make business at 38s. The declaration of the net increase of stocks for September being 10,224 tons, was rather a pleasant surprise, as considerably more was expected. Hematites are not quite so steady, and makers are disposed to quit at lower rates. Lancashire iron continues extremely quiet, and orders are very scarce.

**Rails.**—It is rumored that William H. Vanderbilt, Esq., has purchased between 50,000 and 75,000 tons of English steel rails, to be laid down here at a cost of about \$63. Outside of this, we learn of no business. American rails are quoted at \$60@63. Iron rails are also quiet at present, and are quoted at \$45@46.

**Old Rails.**—It is stated that, since the first of October, there has been a business of about twenty thousand tons in New York and Philadelphia at prices ranging from \$25@27, but very few at the latter price. We quote Ts. at \$26, and D Hs. at \$26½.

**Wrought Scrap.**—The sales of 2500 tons at \$25½ are reported. We quote at \$25@28, according to quality, etc.

We publish the following letters from our regular correspondents:

BALTIMORE, Oct. 18.

The iron market continues fairly active, and prices firm at about following rates:  
 Balt. Char. \$38.00@40.00  
 Va. " 38.00@40.00  
 Anth. No. 1. 24.00@26.00  
 " 2. 22.00@24.00  
 " 3. 20.00@21.00

R. C. HOFFMAN & Co.

LOUISVILLE, Oct. 19.

The market during first part of week showed a decided weakness, and some grades of hot-blast iron were offered at \$1 per ton lower than current a week before, without producing any considerable transactions. During the last two days, however, the market shows a much firmer feeling and decidedly better inquiry. Very little iron could

be bought at our inside quotations of to-day, which are for cash:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	\$28.00@30.00	\$27.00@29.00
Southern Charcoal	26.00@27.00	24.00@25.00
H'n'g Rock, Ste'l & Coke	25.00@26.00	24.00@25.00
Southern Stonecoal & Coke	25.00@26.00	23.00@24.00

"Amer. Scotch" \$24.00@25 Silver Gray \$22.00@24.00  
 Scotch Iron 28.00@30

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	\$23.00@25.00
No. 1 Ste'l & Coke, Cold-short & Neutral	22.00@23.00
No. 2 Ste'l & Coke, Cold-short & Neutral	21.00@22.00
No. 1 Missouri and Indiana, Red-short	27.00@28.00
White & Mottled, Cold-short & Neutral	19.00@20.00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	\$35.00@44.00
Alabama and Georgia, Cold Blast	35.00@42.00
Kentucky, Cold Blast	35.00@42.00

GEORGE H. HULL & Co.

CINCINNATI, Oct. 19.

Our pig-iron market continues without animation, and prices have settled down to lower figures. We quote:

Four mos.	
No. 1 Hanging Rock Charcoal Smelted	\$27.00@28.00
No. 2 " " " "	26.00@27.00
Mill " " " "	25.00@26.00
No. 1 Tennessee " " "	26.00@27.00
No. 1 Hanging Rock Coke " " "	25.50@26.00
No. 2 " " " "	24.00@25.00
No. 1 Jackson Co. Stone Coal " " "	22.00@23.00
H. R. C. B. Car-Wheels, all Nos.	@ 45.00
Southern C. B. Car-Wheels, all Nos.	40.00@43.00
Virginia " " " "	40.00@43.00

TRABER & AUBREY.

PITTSBURG, Oct. 19.

The market is still dull, with a very limited amount of business doing, but the feeling is undoubtedly better than it was before the recent elections in Ohio and Indiana. Stocks are more firmly held, and ruling prices more willingly paid for such quantity as is taken for immediate wants. During the first two weeks of October, the market was very weak, and prices fell off fully 50 cents to \$1 per ton under pressure to sell. There has been no recovery of the lost ground, but the limit of decline appears to have been reached.

4 mos.		4 mos.	
No. 1 F'dry	\$26.00@29.00	M. & White	\$30.00@32.00
No. 2	24.00@25.00	Hot Blast Ch.	28.00@38.00
Gray Forge	22.00@26.00	Cold Blast W.	35.00@45.00

A. H. CHILDS.

RICHMOND, Oct. 18.

The demand for iron on medium-sized orders is active. Great activity prevails among our foundries and machine shops.

Scotch Pig-Iron	\$24.00@27.00
Amer. Scotch Pig-Iron	28.00@29.00
American " " No. 1	26.00@28.00
" " " " No. 2	21.00@24.00
" " " " No. 3	20.00@22.00
" " " " Mottled and W.	19.00@20.00

Best Charcoal Wheel Iron	36.00@40.00
Va. Cold Blast Charcoal Pig-Iron, neutral	" " "
" Warm " " "	" " "

Old Rails	25.00@28.00
Wrought Scrap No. 1	23.00@24.00
Cast Machinery Scrap	21.00@22.00
Richmond Refined Bar Iron	2 6-10@
Horse-shoes (Tredgar)	4.00@
Mule-shoes	5.00@
Old Dominion nails	3.25@
10c. less for 200 kegs.	

ASA SNTDER.

ST. LOUIS, Oct. 16.

The market is still dull for any thing but small lots. Judging from inquiries and remarks made by large buyers, it only needs the removal of the disturbing elements—the elections—to make a good and active market. We quote for cash:

HOT BLAST CHARCOAL.	
Missouri	\$28.00@29.00
Southern	26.00@28.00
Hanging Rock	29.00@30.00

COKE AND COAL.

Missouri	None offering.
Southern	\$25.00@27.00
Ohio River	26.00@28.00

MILL IRONS.

Cold short	\$22.50@23.50
Red short	26.00@

CAR-WHEEL AND MALLEABLE IRONS.

Missouri	\$30.00@35.00
Southern	35.00@40.00
Ohio	38.00@45.00

IRON ORE.

For fix	*\$10.00@12.00
Furnace	6.50@7.50
Brown hematite	No market.
* Nominal.	

CARD & HOFFER.

John H. Austin & Co.'s Special Market Report.

LONDON, E. C., Oct. 7.

STEEL RAILS.—\$6 per ton is the general quotation by makers, with numerous inquiries from America, but at prices equal to \$6@6 5s. c. i. f.; consequently, business does not result.

IRON RAILS.—\$5 per ton, at which a little business has been done.

BAR IRON.—Very quiet at \$5@5 5s. per ton.

OLD RAILS.—Very little inquiry.

HEAVY WROUGHT SCRAP-IRON.—Nothing doing.

BESSEMER PIG-IRON, Nos. 1, 2, and 3.—62s. 6d.@67s. 6d. per ton.

SCOTCH PIG-IRON.—50s. 6d.@50s. 9d. cash.

MIDDLESBROUGH PIG-IRON, No. 3.—38s. 6d.@39s. cash.

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Oct. 22d, 1880.

PORTS.	From Philadelphia.		From Elizabethport, Port Johnston, South Amboy, Hoboken and Weehawken.
	From Philadelphia.	From Baltimore.	
Alexandria			
Annapolis			
Apponang			
Baltimore			
Bangor			1.20
Bath, Me.			1.20
Beverly			1.20
Boston, Mass.	1.25@1.50		1.15
Braintree			
Bridgeport, Conn.			75
Brooklyn			
Cambridge, Mass.			1.15
Charleston			
Charlestown			1.15
Chelsea			1.15
City Point			
Com. Pt., Mass.			
E. Boston			1.15
East Cambridge			1.15
E. Gr'nwich, R. I.			
Fall River	1.10		90
Fredericksb'g, Va.			
Georgetown, D. C.			
Gloucester			
Hartford			
Hackensack			
Lambertville			
Lynn			
Marblehead			
Medford			
Millville			
Milton			
Mystic River			
N. Brunswick, N. J.			
New Bedford	1.30		
Newburyport	1.60		1.30
New Haven			
New London			
New Orleans			
Newport			
New York	80		
Norfolk, Va.	70		
Norwich			90
Norwalk, Conn.			
Petersburg			
Philadelphia			
Portland			
Portsmouth, Va.			
Portsmouth, N. H.	1.40@1.60		1.30
Providence			
Quincy Point			
Richmond, Va.	80@85		
Rockland			1.25
Rockport			
Roxbury			
Saco	1.60		
Sag Harbor			
Salem, Mass.			1.15
Saugus			
Savannah	1.20		
Somerset			90
Staten Island			
Trenton			
Troy			
Wareham			
Washington	70@80		
Weymouth			
Williamsbz, N. Y.			
Wilmington, Del.			
Wilmington, N. C.			

\* And discharging. † And discharging and towing. ‡ 3c per bridge extra. § Alongside. ¶ And towing up and down. † And towing. \*\* Below bridge.

COAL TRADE REVIEW.

Anthracite.

NEW YORK, Friday Evening, Oct. 22.

The cooler weather which has prevailed since our last has had a tendency to improve stove coal, and the effect on grate and chestnut sizes will probably be felt soon. Other sizes, however, show no improvement, but that there has been no weakening is encouraging. There is a very fair amount of business doing, but the demand is not sufficient to employ the full productive capacity of the collieries. It is thought that there will be a suspension of mining during the first week of November. This would be but a broken week at the best, and the production would naturally be small, owing to the occurrence of the presidential election, in which the miners will take no inconsiderable part.

There is a very good demand for coal from the West, which can not be supplied, owing to the scarcity of cars, which appear to meet with unusual delay in the West.

The production of anthracite coal last week was 684,500 tons, as compared with 326,800 tons the preceding week, and 593,776 tons the corresponding week of 1879. The total production from January 1st to October 16th was 17,769,941 tons as against 20,402,

