AMERICAN

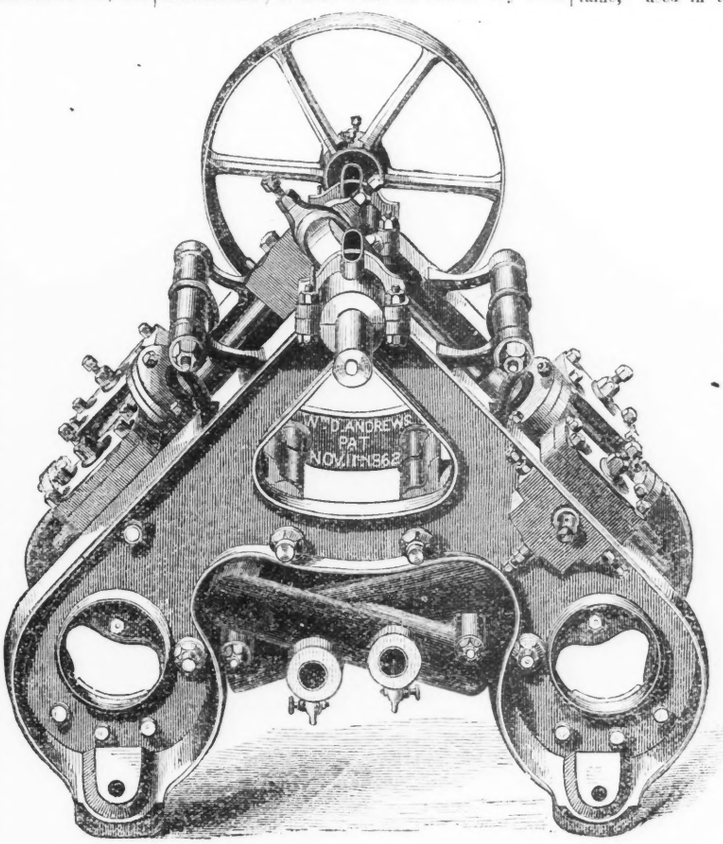
Journal of Mining,

Milling, Oil-Boring, Geology, Mineralogy, Metallurgy, etc.

VOLUME II. NUMBER 9. | NEW YORK, NOVEMBER 24, 1866. | $4 A YEAR IN ADVANCE. SINGLE COPIES TEN CENTS.

OSCILLATING ENGINES.

The adjoining engraving on this page represents one of William D. Andrews & Bro's. Oscillating Engines, made at their factory, 414 Water street, in this city. It was patented in 1862. During the past four years many hundreds of them have been turned out, and from the fact that the makers refer to any parties using them in any part of the world, we should judge that all who have tried them are well satisfied. Among the advantages claimed for these engines by the manufacturers are these: "Simplicity of construction and the absence of all unnecessary parts; they occupy very little room and require little care; they are complete within themselves, requiring no special foundation or balance-wheel pit; every engine is tested before leaving the shop, and all the sizes up to 100 horse-power, can be transported without being taken apart, and, on arrival at their destinations, can be put in operation without the loss of a day; the single engines require balance-wheels of only one-eighth to one-fourth the weight of those required for ordinary engines; while the double engines require none at all; their entire weight is only from one-tenth to one-fourth that of engines of ordinary construction having the same power, while they are equally strong and durable; and they are economical in first cost and in the consumption of steam." Persons interested in mining and milling, and in need of such machinery, should visit the manufactory if possible, or if not, send for the descriptive circular.



ANDREW'S PATENT OSCILLATING ENGINE.

Gold Deposits.

Mr. David Forbes, in the London *Geological Magazine*, has a short but interesting paper on the geological periods at which gold has made its appearance in the crust of our globe. He designates the two epochs of auriferous impregnation, as—*First*, the older or auriferous granite outburst; *second*, the younger or auriferous diorite outburst. The first occurred some time between the silurian and carboniferous periods. The gold formations belonging to this period present themselves in Australia, Bohemia, Bolivia, Brazil, Buenos Ayres, Chili, Cornwall, Ecuador, Hungary, Mexico, New Granada, Norway, Peru, Sweden, Ural, Wicklow; and also such deposits of gold as are found intruded as quartz nodules and veins, as if interstratified in the cambrian and silurian systems, which he believes to have been rendered auriferous solely from their proximity to invisible or now superficial granites. The newer outburst cut through strata containing fossils of decided post-oolitic forms, and possibly may be as late as early cretaceous. Commenting on this, the London *Reader* says: "If Mr. Forbes is correct with respect to this comparatively recent creation, so to speak, of gold, we may hope that, whatever is the case with coal, the supply of gold may possibly be inexhaustible; as there seems no reason why fresh "outbursts" of the igneous diorite should not recur at any period, and either produce gold with their Midas-like touch, or like a Plutonic visitor of Danae, send their auriferous veins upward for the corruption of man."

Income of Miners.

The Nevada *Transcript* says: "In the little mining camp of Birchville, Bridgeport Township, where the entire taxable real property does not amount to $100,000, the incomes last year amounted, in the aggregate, to $146,195. The number of persons having this income will not reach thirty. This is an average of over $4,800 to the man. There are six incomes of over $10,000, and two over $20,000. The largest income is $42,510; the second, $27,190. This is a splendid showing for a town where the people are devoted almost entirely to placer mining. There are several large miners having claims in Birchville, who pay their income taxes out of this county." Birchville is a town of fifty or sixty inhabitants, four miles west of North San Juan.

The New French Combustible.

The new explosive mixture called "Poudre Fontaine," used in the torpedoes which were tried against the hull of the Vauban, has been employed in blowing up the old quays of one of the basins at Toulon now in process of extension. A mine charged with five kilogrammes of the powder exploded with such effect that a charge of one hundred kilogrammes of the ordinary gunpowder would have caused less destruction. The charge was purposely a small one, and the engineers congratulated themselves on having commenced so cautiously. A singular result of the explosion was the killing a quantity of fish. The workmen picked up seventy or eighty pounds weight, which floated on the surface of the water. The same phenomenon had been remarked from the action of the torpedoes.

Another Coal Discovery.

Of the Eel River coal beds, discovered last spring, the Mendocino (Cal.) *Herald* says: They are said to be located about five miles from Hendly's farm in Round Valley, and in a southwesterly direction. There is a strata of from six to ten feet thick, completely exposed, where the river cuts it, and in the channel forms a rocky barrier over which the water falls at least ten feet. The ledge is plainly visible for some distance up the hillsides on either side. Samples of this coal have been brought to Ukiah, and have been pronounced of superior quality.

Interesting Steam Boiler Experiments.

The *Scientific American* reports the recent trial before a committee of the Franklin Institute, of a "Harrison Boiler," in which a steam pressure of over eight hundred and fifty pounds to the square inch was raised in one instance with a result that produced no injury to the boiler. The experiments were made with sections taken from the prepared stock in the works, without any regard to choice or selection, and consisting of:

First. A section elevated upon one edge, raised to about 45 degrees, was subjected to hydrostatic pressure, the injection being at the lower angle. The lower pair of globes were fractured at 600 pounds to the square inch.

Second. The injured globes being replaced by

new ones, the test was repeated, fracturing again at the same point under a pressure of 625 pounds.

Third. A section was set up in same position in brick-work imbedded in a clay bank, and covered with earth and timber for safety, and charged about three-fourths full of water, and sealed close. Fire was then applied, and steam raised to eight hundred and fifty-two pounds, when a sudden rushing of steam led us to suppose a rupture had occurred, but the steam gauge rested at three hundred pounds, when the fire was increased. Steam again escaping at intervals, and no rupture occurring, the fire was drawn and the section removed for inspection. It was found that the extreme heat had elongated the rod confining the lower series of globes, opening the joints and allowing the escape of steam and water, but, on cooling, the rod had contracted and the joint seemed closed as at first, the nuts screwed up, and under one hundred pounds pressure it was found perfectly tight.

Fourth. Two sections united and set in brick-work, were charged three-fourths full of water, and the furnace lighted, raising steam to 150 pounds, which was let off to 100 pounds, at which the pressure was continued, the fuel being increased and the valve open until, from exhaustion of the water, the pressure went down to thirty pounds. The doors were then opened and all the globes above the bridge wall, about one-half the section, were found to be red-hot almost to a white heat. No fracture or leakage or other injury could be discovered. It has hitherto been thought best to mount the sections on edge, with the front end elevated about 45 degrees, the top of the bridge wall taking at a point about half the length of the section or "slab." By this system, the heat being deflected forward by the bridge wall, rises, and is then curved backward over the bridge, sweeping and enveloping the entire group of globes, thus presenting the greatest proportional amount of heat-absorbing surface that has yet been attained in any steam generating apparatus. But to adapt the invention to marine uses, Mr. Harrison had fitted up a series upon a new plan, uniting them with ball and cup joint at top and bottom, for safety and compensation. This formed trial

Fifth. The furnace was lighted and steam raised from cold water to 30 pounds in eighteen minutes, to 60 pounds in twenty-two minutes, to 100 pounds in twenty-six minutes, and to 150 pounds in thirty-one minutes; pine wood for fuel. The steam was run down to 100 pounds, and the apparatus connected with the main engine actuated the works for the remainder of the day.

The End of the World.

Professor Benjamin Pierce, of Harvard University, who has acquired a national reputation as a mathematician, has recently shown that the sun will continue to enliven the earth and sustain human existence 30,000,000 years. Our descendants will enjoy themselves for ages yet to come. What is technically known as the meteoric theory of solar heat has been cast aside. The end of the world, regarding which some religious sects have founded a creed, is postponed indefinitely.

There's Work Enough To Do.

The blackbird early leaves its nest
To meet the smiling morn,
And gathering fragments for its nest
From upland wood and lawn;
The busy bee that wings its way
'Mid sweets of varied hue,
At every flower would seem to say—
"There's work enough to do."

The cowslip and the spreading vine,
The daisy in the grass,
The snow drop and the eglantine,
Preach sermons as we pass.
The ant, within its cavern deep,
Would bid us labor too,
And writes upon its tiny heap—
"There's work enough to do."

To have a heart for those who weep,
The sottish drunkard win;
To rescue all the children, deep
In ignorance and sin;
To help the poor, the hungry feed,
To give him coat and shoe,
To see that all can write and read,
"There's work enough to do."

The time is short—the world is wide,
And much has to be done;
This wondrous earth, and all its pride,
Will vanish with the sun!
The moments fly on lightning wings,
And life's uncertain too;
We've none to waste on foolish things—
"There's work enough to do."

The planets, at their Maker's will,
Move onward to their cars,
Nor Nature's wheel is never still—
Progressive as the stars!
The leaves that flutter in the air,
And summer's breezes woo,
One solemn truth to man declare—
"There's work enough to do."

Who then can sleep when all around
Is active, fresh and free?
Shall Man—creation's lord—be found
Less busy than the bee?
Our courts and alleys are the field.
If men would search them through,
That best the sweets of labor yield,
And "work enough to do."

Mining Summary.

Pennsylvania.

The JOURNAL OF MINING has already alluded to the recent visit of U. S. Senator Foster and other distinguished members of Congress and the Government Departments, to the mines and works of Pennsylvania. A contemporary publishes a long account thereof, written doubtless by Dr. Lamborn, from which we condense the following: At the works of the Bethlehem Iron Co., the party dismounted, and under the guidance of Mr. Alfred Hunt, President of the company, and Mr. John Fritz, the Superintendent, visited this establishment. The works comprise a blast furnace 50 feet in height and 15 feet bosh, an unfinished furnace, and a rail mill, now in full operation, making about 400 tons of rails per week. The blast furnace is built on the plan of Mr. Fritz, an iron casing lined with fire brick and supported on cast iron columns. It is one of the neatest and coolest furnaces in the country, and has been eminently successful. It has now been in full blast 31 months and has yielded during that time the remarkably large average of about 195 tons per week. It has made in a single week over 230 tons. The furnace first went into operation in January, 1863. The charge of ore at present consists of $\frac{3}{8}$ hematite, $\frac{1}{4}$ N. J. magnetic, $\frac{1}{4}$ Cornwall magnetic, and $\frac{1}{8}$ heating furnace cinder. The unfinished furnace is being built on the same plan as the other. The blowing engine is also the well known and much talked of invention of the Superintendent. It is a high pressure engine of some 40 inches steam cylinder and 8 feet stroke. The steam and blast cylinders are vertical and stand close together, and their piston rods are attached to the same cross-head; the latter moves in guides, the connecting rods to the fly wheels being attached to the ends. The engine works "to a charm," and a second engine of the same model is being erected. The rail mill has been pronounced, by many judges, the finest though not the largest, in the country. The visitors had the opportunity of seeing all the stages in the manufacture of rails from the time the iron goes into the puddling furnace, is puddled, and passes through the squeezer, to the final passing of the rail through the rolls, and the sawing off of the two ends. The products of the furnace are used in the mill as well as a large quantity of pig iron, old rails, &c. The mill like the furnace, bears the mark of the Superintendent. The "three high rolls" and the "direct acting engines" are both his patents, and have been, or are being, adopted throughout the country. After the stop at these works, the party ran rapidly down along the banks of the beautiful Lehigh to the Glendon furnaces near Easton. Here, Mr. Wm Firmstone, Superintendent, led the party. The iron made at the Glendon furnaces is widely celebrated, and finds an extensive market among the nail mills of New England. For nail purposes the iron is said to have no superior in the country. The ore used is N. J. magnetic and brown hematite. The works comprise four furnaces, one of which is situated in South Easton, about one mile below those visited by the party. The product of the four furnaces in 1864 was 32,729 net tons. Mr. Gillingham Fell, of Philadelphia, was one of the excursionists, and is the president of the company. After leaving Glendon we ran back to South Bethlehem, and walked through the great works of the Lehigh Zinc Co. These are the largest of the kind in the country, and employ some 700 men. The works embrace a very large oxide establishment, a spelter works, where the metal is made by the French process, and where French and Belgian workmen are chiefly employed, and a rolling mill for making sheet zinc. The sheet zinc of this company is remarkable for its tenacity, arising from the great purity of the ore. It exceeds, in this respect, anything imported. The ore is brought from the mines of the company, which are some four miles from the works. The extent and importance of these mines may be appreciated from the fact that the company are pumping with their principal engine about 4,600 gallons per minute, from the depth of 100 feet. The engine used for this purpose is one of the West patent engines built at Norristown. It has a fly-wheel about 40ft. in diameter, and weighing some 40 tons, which can, by loading, be increased. Three 22 inch pumps are employed; the stroke is some 9 feet. The number of revolutions per minute average about 13. Mr. West, the patentee of this engine, is the mechanic engineer of this company. Mr. Joseph Wharton, formerly the lessee of the metal department, went through the works with the party, giving them descriptions of the different parts. Bethlehem and its surroundings are now rapidly increasing in importance in consequence of its manufacturing interests and great railroad facilities. The place contains numerous manufacturing establishments, but we have not time to speak of all. After an excellent dinner, the party returned to the train and steamed up the river, passing the furnaces and rolling mills of Allentown, and stopped at Catasaqua. The Lehigh Crane Iron Works are located here. There are five furnaces, all now in blast, and making 900 to 1,000 tons of pig metal per week. The capacity of these works is now nearly 50,000 tons per year. This establishment is among the oldest in the country, and Mr. Thomas, who resides here, and has been connected with the works since their commencement, came to this country for the purpose of introducing the use of hot blast in the smelting of iron ores with anthracite coal. The first furnace was built at Catasauqua, in 1840; previous to that time very little iron had been made with anthracite coal. In 1849, 15,983 net tons of iron were produced at the works; since then the product has greatly increased, and during one year 48,872 tons were made. The works have been gradually increased and improved; their arrangements are, therefore, not quite so neat as those of the Thomas Works, which we visited next. The conveniences of the establishment, however, are very great. Tracts run through the works, and the Lehigh Navigation Canal passes immediately alongside. Coal comes both by rail and canal. The blast machinery of the company is remarkably fine. Their great engine has few equals in the country; it was recently built by J. P. Morris & Co., of Philadelphia. This engine is of enormous size. The steam cylinder is 66 inches in diameter, and the stroke is 10 feet. The blast cylinder is about 9 feet in diameter. The walking-beam is about 33 feet long, and the fly wheels weigh each about 27 tons, and are about 27 feet in diameter. A second engine, of gigantic proportions, though somewhat smaller than the former, stands near by, while two more, themselves immense, though children compared with the others, are likewise engaged in furnishing wind to the furnace. The blast is driven at a pressure of about 7½ lbs. to the square inch. The immense extent of this establishment may be seen from the amount of coal, ore, and limestone consumed. We take the following figures from the table of the American Iron and Steel Association:—

In 1864, the Lehigh Crane Iron Works consumed 99,416 net tons of hematite and magnetic ore, 55,319 tons of limestone, and 107,054 tons of coal. The hoisting is done by water, the platforms are water-boxes, which are filled on top and emptied below, the pumping is done by turbine wheels and small engines. About 600 men are employed, and $1,000,000 is the capital of the company. The visitors also walked through the Catasauqua rolling mills, where merchant iron is being made. The mill contains some good machinery and a pair of 29-inch rolls for plate. The latter are not, however, in use. Returning to our train on the west side of the river, we ran up to Hockendauqua, about one mile further up the river. There are the Thomas Works. These and the Crane Works are the two largest in the country. The two companies are owned in part by the same stockholders, and the management of the two is similar. The Thomas Iron Works embrace four furnaces of 18 feet bosh and 55 to 60 feet high. Two furnaces stand on each side of the principal engine-house, while the arrangement of boilers (which, by the way, are 80 feet long), blast chambers, ore, coal and limestone bins, casting-houses, blast pipes, &c., &c., of which we have not now time to speak, is admirable. A visit to the engines alone would repay a long journey. The principal pair of engines exceed anything of the kind in the country. A pair of engines each one the size of the largest at Catasauqua, stands before the visitor as he enters the main engine-house. The impression of the first view of such engines is something that cannot be described, and the excursionists, many of whom had never seen anything of the kind of such proportions, were deeply interested. These engines, like those before mentioned, were built by the well-known firm of J. P. Morris & Co. Each engine weighs about 700,000 lbs. The cost of the pair, as they stand, must have been at least $250,000. Besides these two engines there are two other small ones, with only about 56 inch cylinders and 9 feet stroke. The product of the Thomas works in 1864 was 49,815 net tons, 117,600 tons of ore, 75,000 tons of limestone, and 109,700 tons of coal were consumed; 800 men are employed, and $1,000,000 is the invested capital. The Thomas and Crane companies receive a large part of their supply of ore from the Fogelsville railroad, a road built by them for the purpose of opening up the mines and quarries in the southwest of the furnaces. The road is now bringing down, in addition to the large quantity of hematite ore and limestone, about 200 tons of South Mountain magnetic ore per day. The mines are owned chiefly by the companies, and are now being rapidly opened. The South Mountain ore is very pure and free from sulphur and phosphorus; it was, however, rather lean near the surface, but improves very much in richness at a greater depth. It was nearly sunset when the party left the Thomas Works. Dashing along the banks of the Lehigh, passing the Lehigh Valley furnaces and through the Lehigh gap, clothed in a many-colored robe of autumn tints, passing the Perryville furnaces and Slatington Slate Works, on the rushing river and calm canal until darkness finally settled down upon us, as we reached Mauch Chunk, and the end of our first day's ride. Before leaving the iron works of Lehigh Valley, a few figures showing their extent and importance may not be amiss. There are 29 furnaces belonging to the Lehigh group; the 3 Cooper furnaces at Phillipsburgh, N. J., and the 2 Durham furnaces in Berks county, Pa., are not strictly in the Lehigh Valley, but are so close to it as to

be classed in the group. These 29 furnaces, many of them very large, constitute the most important group of anthracite furnaces in the country. Their largest product was in the year 1864, when 214,093 net tons of pig metal were made. To produce this immense amount 486 tons of ore 273 tons of limestone, and 459,051 tons of coal were consumed. The capital invested in the blast furnace companies of the Valley considerably exceeds $5,000,000.

Nevada.

The Comstock.—The San Francisco Stock Broker's Circular, Oct. 27th, says: Mining shares generally have manifested a decided improvement during the past week. In the face of the extreme stringency prevailing in monetary circles, with no immediate prospects of ease, this would seem to indicate a more healthy condition of affairs. There is little doubt that the amount of ore extracted from the Comstock lode during the past month has at no former like period been larger. This circumstance, coupled with the fact that much more rigid economy is now exercised by all the companies in every department, will at no distant day establish greater confidence in this class of securities. Hale & Norcross maintain its former good position in the market, with no sales during the week in the Board. The yield at the mill, it is said, now averages about $60 per ton. We quote it at $1.700 bid, and $2.000 asked .....Savage opened at $1,170, advanced to $1,200, buyer 30, and $1.225 cash, and closed yesterday at $1,195. In the seventh station, old works, fine seams of ore have been penetrated. In the winze sunk about midway between this station and the sixth, a marked change in the dip of the ore was developed. During the week ending October 20th, 1,218 tons of ore were extracted, and the same amount has been shipped to mills. The approximate value of this amount of ore extracted, by assay, is given at $58,394, leaving a profit, after deducting $25,310—estimated mining and reducing expenses—of $33,048. The assay value of 476 tons of second-class ore extracted during the period of review gives $65 per ton, and 742 tons of the third class about $37 per ton. The ore has been principally taken from the sixth station. The supply of ore from the two stations in the south mine, Curtis shaft, will hereafter, it is said, be about 60 tons per day. The Savage mill is in good running condition, and the five custom mills employed are reducing some 120 tons of ore per day. The types in our last issue made us say that 400 men are now employed by this company, instead of 200 .....Yellow Jacket has improved from our last quotations, opening at $595, seller 3, improving to $680, buyer 30, declining to $640@660, then rallying to $685, and closing yesterday at $652½. During the week ending Oct. 15th, 1,570 tons of second class ores were extracted, and the amount of ore reduced during the same period yielded $24,596 41. During the week ending Oct. 22d, 1½ tons of first class, and 1,700 tons of second class ore were mined, and the yield in bullion for the same week is reported at $41,122 .... Crown Point sold at $955 early in the week, then advanced to $975 and $1,000, buyer 30, and at the close we quote it at 1,000 bid. During the week ending Oct. 21st, 718 tons of ore were raised from the mine. The inclines on the veins are now sunk to the depth of 112 feet, carrying good ore, it is said, all the way. Expect to reach the vein, on the 400-foot level, by the 1st of November. The receipts for the current month, it is thought, will amount to some $115,000. .....Gould & Curry has met with small sales during the past week, opening at $380, receding to $370, then selling at $390, buyer 30, and closing at $400. We have nothing special to note in regard to this mine. We learn that a large sum has been expended in obtaining supplies for the winter season. .....Chollar Potosi changed hands at $80, buyer 30, early in the week, gradually improved to $110 and $135, then sold at $108, and closed yesterday at $112. We have the following information concerning the new shaft: The first station is in 210 feet, and looks promising; the second station, main drift, has been opened 425 feet. Here the quartz is 7 or 8 feet wide, which, it is said, is a favorable indication. In the same station the north drift has been extended to 128 feet. The shaft has now attained a depth of about 625 feet. During the week ending Oct. 21st, 628 tons of ore were shipped to custom mills. .....Empire Mill and Mining company has met with a few sales for some time past, and at the close quote it at $100 asked. We are informed that on the 21st, 260 feet east from the old shaft, on the 700-level, a vein of good ore, three feet wide, was encountered, which is said to widen as work progresses. This new discovery is about 190 feet from the new shaft, which is now sunk to the depth of 640 feet. This company is at present extracting over 100 tons of second class of ore per day, said to average over $30 per ton. Some 2,000 tons of ore have been accumulated at their mills and dump, which promise regular dividends for some months to come, without resorting to the new deposit of ore recently found. We understand that the company have suspended work at their mill in Virginia City, in order to save the additional cost of hauling over the steep grades from their mine, which is $1 to $2 per ton more than to their mill in Gold Hill. This will aggregate an annual saving of from $15,000 to $20,000 .... Imperial sold at $77 early in the week, then steadily advanced to $85, and closed at $81 asked. Since our last issue over $20,000 in bullion has been received, making a total of more than $53,000 up to the 24th inst., and a gain of some $12,000 as against the same period in September. The estimated receipts for the present month are given at $90,000: last month they were $77,000.....Ophir has improved from our last quotations, opening at $80, buyer 30, advancing to $102 50, then selling at 93, and at the close brought $91 per foot. Mr. John Pascoe, for several years past superintendent of the Central Mining company, has just been chosen superintendent of the Ophir in place of Mr. Fair, resigned. The statement made recently that over one million dollars in bullion had been extracted from this mine within the past eighteen months, is erroneous. So far as we can learn, about $800 000 was produced during that period, of which sum more than $250,000 has been expended in lawsuits affecting the company's title .....Confidence sold at $45, seller 3, and at the close is quoted at $50 .....Bullion rose from $12 50 to $20 ....Belcher improved from $40 to $62, then sold at $55, and closed yesterday at $55. An assessment of $33 per share on the capital stock of this company was levied on the 17th inst .... Overman improved from closing quotations last week, selling within a range of $4 75@14, closing yesterday at $9 50 .... Daney was sold at $3 50@$3 25 .....Over 200 shares of Sierra Nevada sold within a range of 50c@$2. ...Golden Rule (California) sold at $25, seller $30.... The Gold Hill *News* of Oct. 23d, says: We yesterday visited some of our Gold Hill mines—from the Imperial to the Crown Point, and without a single exception we found them all busy at work taking out pay ore. The dumps were well supplied with rock, while scores of large teams were engaged in transporting it to the numerous mills in this and adjoining counties.

Cortez.—The *Reveille* of Oct. 23d, says: Mr. Elmore is the agent of the Continental Mining company of New York, and has for several months been developing the company's mine on the Nevada Giant lode at Cortez, and with such grand success that he goes east for the purpose of making arrangements for building a mill, and the most thorough working of the mine. This grand ledge is at Mr. Elmore's location four hundred feet in width, and has three strata of pay ore, each from five to eight feet in width at the surface. From these, some five tons of ore were lately taken out, and worked at the Keystone mill, producing a bar of bullion worth nearly one thousand dollars, or at the rate of $145 per ton. After opening a stratum of this ore for a length of two hundred feet, and sinking upon it for a considerable depth, finding this rich ore throughout, he is satisfied that he can fully supply a forty stamp mill, and intends to erect such a one on the mill site of the company early next spring.

Humboldt.—The *Register* of Oct. 13th, says: Forty men are wanted at the Montezuma Smelting Works. Nason & Co. are rapidly getting ready for regular work. Will have three more new and approved furnaces completed in a few days; also one small Mexican furnace, for trial—erected under the supervision of Mr. Couch, who has had a large experience, smelting this character of ores in Mexico. .....The men in the Rochester mine passed through a fine clay seam, 8 inches through, and were confident of having the ledge right at hand—as undoubtedly it was—but the water rushed in upon them in such a volume as to drive them from the work. They had sunk a shaft some 200 feet deep, and were drifting from the bottom to cross the ledge. This allowed no drainage, and they had nothing for it but to get out of the work. The tunnel filled, and the water rose 60 feet in the large double shaft in 2 hours. At last account it stood 75 feet in the shaft, and still slowly rising.....The same paper of Oct. 20th, says: McCormick, just up from Oreana, informs us that the smelting furnaces are in full blast, and turning out cords of bullion from Montezuma ore ..... The Pioneer mill has suspended active work for the present, not doing custom work, but running on tailings. The occasion is, a necessary enlargement of the reservoir for tailings. Rock will be taken, meantime, and worked in its order as soon as the enlargement has been completed—some two weeks hence.....Addenda to this we are informed that the Pioneer & Inskip Milling and Mining company of this (New York) city, own the above mill. They are actively engaged in mining operations in Humboldt county, having expended about $15,000 coin since Jan. 1, of which their mill running on custom work has earned about $10,000, leaving about $20 000 of their working capital of $30,000 on hand. They have recently heard from their superintendent that he has obtained a vein of good mineral four and a half feet wide, which they expect to reach by their tunnel after 80 feet more are run. The yield of ores at this company's mill is a very large percentage of the assayed value. Several working tests by Blake & Co., the well known assayers, affirmed by Van Wyke & Co., who are entirely disinterested parties, gave results as follows:

10½ tons yielded	$2325
Equal to per ton	230
4 7-10 tons yielded	806
Or per ton	171

The average yield of these two lots was about $209, and the tailings assayed only $39 48!

5 tons yielded	$457 47
Per ton about	91

Of this lot the tailings assayed only $26 84—being remarkably close working.

Montana.

From the Montana *Post*, Oct. 20th, we take the following: The Hot spring district is thriving, and seems to be the busiest section of the Territory. Other localities may show richer specimens of quartz, but it is a fact that more mills are actually and profitably working at this place than any other. C. M. Celey, Esq., purchased an interest in the Boaz lode on the 19th inst., and entered into a written obligation to erect a mill thereon, and have the same in complete running order before the first day of next May. Wheeler's pans will be used in extracting the golden treasures.....Brown's gulch is being opened and promises to be very rich. We were shown three very handsome nuggets taken from a hole sunk to the bedrock (by a gentleman whose name is forgotten), weighing in the aggregate $17.30. The same gentleman informed us that two gentlemen of the next company above him took out eleven ounces in two day's work. Several other companies, among which are Pope, Patten & Co., are working hard, anticipating a big thing. Mr. James M. Sisse, of this place, informs us while writing that there has been a discovery made in Burton's gulch (which heads in the mountains near the summit, and empties into the Stinking-water above the canyon,) that is thought to be a big thing, but expresses fear that it was "salted" on them .....A correspondent writes of the quartz mines in Edgerton county: Three and one-half miles from Helena up Orofino, on a good road to the head of this gulch, we find ourselves in Owyhee Park, where in February, 1864, James W. Whitlatch, formerly of Nevada, and Eli S. Wibley, of Illinois, discovered the first indications of rich gold-bearing quartz. After three weeks of steady search they struck a rich ledge in soft granite, and called it the "Union." The same day, some distance west, they also discovered what they believed to be another rich ledge, and called it the "Owyhee" which since has proven to be the "Union." These enterprising prospectors commenced opening on both places, being encouraged by the richness of the quartz, and never ceased their toil until their means were exhausted. In the fall of 1865, Mr. W. sold to Professor J. T. Hodge, Agent for the National Mining and Exploring Company, of New York, 122 feet on No. 2, west on the Union, No. 1, west on the Owyhee, and No 2, east on the Dr. Bigger's, for $5,000, and immediately started for New York to procure machinery. Being unable to accomplish his object he sold the discovery claim on "Owyhee" (200 feet) for $10,000, to the same company, returned to Montana to further improve and develop his mines, especially the "Union." Descending the incline shaft on the discovery of the Union on well constructed ladders, to a depth of 40 feet, at an angle of 45 degrees—at this point the ledge takes an easier dip, and we descend without assistance on the smooth lower wall to the depth of 90 feet, where a vertical shaft intersects which latter was sunk for hoisting and ventilation purposes. At this junction drifts have been run east and west, 100 feet, and 75 feet, respectively, in length. The ledge on this incline to the full depth of the works, 191 feet, has averaged three feet of ore, but in the drifts it varies, showing in places as much as six feet, and suddenly narrowing down to 10 inches; but these narrow places do not extend over 10 feet in length. Both well defined wall rocks are soft granite of greenish color, and present a smooth clay-coated surface. The ore is a whitish quartz, with but little iron pyrites, and traces of copper and galena. Retracing our steps from the western drift, we descend the incline to a depth of 191 feet, where the ledge resumes a dip of 45 degrees. All the ore taken from this shaft and drifts is awaiting the completion of Messrs. Postlewait & Co.'s 24 stamp mill, of which we speak anon. The ore probably will average from $30 to $40, although on examination large quantities of beautiful specimens, showing free gold, can be found on the dump piles. We reascend the incline, and on striking terra firma again, were thoroughly convinced that the prospects of the Union were fully equal to the expectations of the owner and to any other ledge in the Territory, which we have examined. But the shaft we descended is not the only improvement on this lode. On No 2 west, the property of the National Mining and Exploring Company of New York, an incline following the ledge 193 feet, intersects with a vertical shaft at a depth of 100 feet, whence a drift runs west 122 feet—the ledge in this drift averages four feet, and the principal part of the work on this claim was done under the supervision of Professor Hodge, agent of the company. On the east end of No. 3, west, we found another shaft following the dip of the ledge 80 feet, and show-

ing an average width of ledge of four feet, of the best prospecting ore on the whole lode. On the west end of the same claim, another incline follows the crevice 146 feet, which here only averages three feet, to that depth, but shows indications on the bottom of widening out. The next claim, No. 4, west, formerly held as discovery claim of the "Owyhee," is owned now by the N. M. & Ex. Co. of N. Y., has an incline shaft 120 feet deep. A tunnel strikes the ledge at a depth of sixty feet and follows it the whole length of the claim. The width of the ore varies in this claim from two to five feet, but gives indications of yielding not less than $40 per ton. A railway runs from the tunnel direct to the National Mining and Exploring Co's mill on Orofino Gulch, which, under the management of Prof. J. T. Hodge, will prosper and remunerate the enterprising members of the company by good returns for their investment. Under the gentlemanly guidance of the Professor, we examined the whole machinery, and the mill being in operation we had a good opportunity of noticing the smoothness with which the 15-horse power engine worked and the compactness of the wood-work, on which no perceptible jar is noticeable during the heavy 9-inch fall of the ten 630lb. stamps. On one end of and above the battery, at a convenient distance from it, a "Gate's Crusher" breaks the quartz to the size of beans. "This crusher has sufficient capacity of furnishing rock for at least twenty-four stamps. An excavation is now being made for another 8-horse power engine in this mill, to which two arastras, each seven feet in diamater, four of Eaton's celebrated amalgamators and a Douglas crusher will be added. The whole structure of this mill, its neatness, in all minute details, casts great credit upon Mr. S. Cameron, under whose personal supervision the machinery and wood-work was put up. Sorrounding the mill are well constructed and airy stable and barn for the horses, a substantial dwelling and boarding house for the employees, and 900 cords of wood piled up for immediate use. The Professor has now on hand 1,200 tons of ore, and is continually taking out more. We look forward with certainty to a good clean up the first time the mills stops.....We return to the mines. No. 5. E. on the Union, which was erroneously held as discovery of the Dr. Bigger's, we found but little work done, but the quartz is uniform with the other claims. Mr. Whitlatch, has now in Owyhee Park about 800 tons of fair ore. Having examined the most noticeable ledges near Owyhee Park, we cross the same and descend the Eagle Bird gulch to where it merges into Grizzly gulch. On this point Messrs. Postlewait & Co., are erecting a 24-stamp steam mill. Knowing the energetic character of Mr. Chas. Hendrie, one of the owners of the mill, who himself directs the work, another will soon be added to the number in this county that will demonstrate the richness of the Whitlach property. We cross Grizzly gulch and ascend the western slope of the divide; on the summit we find excavations over a space of probably two acres, which on first sight would be thought to be placer diggings, but is the celebrated "Park Lode." The peculiarity of this ledge is, that at a depth of thirty feet it lies almost horizontal, averages about eighteen inches of paying ore, and has yielded from $30 to $59 in the old Sultana Mill. About 1,200 tons of ore are ready to be hauled to the mill.

Colorado.

Commissioner Wilson of the General Land Office, has just received specimens of carbonate of copper, silver, iron ore, zinc ore, fossils, gypsum, etc., from the Surveyor General of Colorado, who, in an accompanying letter, says: "The copper ore is from the Pocahontas lode, near Bear creek, and was broken off from a boulder weighing about ten pounds. The shaft was about ten feet deep, and probably three or four hundred pounds of the same ore was exposed. The silver ore is from the Argentine district, at the head of the south fork of Clear creek. The specimens were taken from a hill containing several tons, all similar to the specimens. The veins from which this is taken vary in width from a few inches to 25 or 30 feet, in which the seams of ore, from one inch to a foot in thickness, occur at various intervals. The rest of the vein is filled with quartz, containing in some cases as much as eight hundred dollars per ton of silver in the shape of a chloride of silver diffused through the quartz, and probably the result of the decomposition of the sulphuret ores. Other veins contain argentiferous galena, and in some pure sulphuret of silver is found, but in no very great quantities as yet. This silver region follows the crest of the range from the head of Clear creek southward to Mount Lincoln, and probably further, including the mountains around the head of the Snake and Blue rivers, the number of veins discovered already reaching several thousand. Assays above $100 per ton are the rule, and those below that the exception, while some veins have given an average of $5,000 to the ton. Three furnaces are in operation at Georgetown, and two more in course of erection, but those in operation are on so small a scale that they reduce but a small per centage of the silver, although that small amount pays largely. As yet there is only a pack trail to these mines, and the ore is brought down on mules and jacks. One furnace is in operation at Montezuma, on Snake river, for reducing argentiferous galena. The largest piece of iron ore that I send you, was found by deputy-surveyor Geo. E. Pierce, and is from a bed about thirty miles south of Denver. The bed or vein, which is horizontal, extends from five miles in length to about a mile in width, and forms a mountain of iron. The specular ore is from the South Park, and is in vertical veins similar to the gold veins. The magnetic ore is from near Golden City, and is in vertical veins, bedded in feldspar. I have heretofore reported extensive veins of hematite ore near Golden City. Zinc, both in the form of silicate and sulphuret, is found scattered through many of the gold and silver-bearing lodes, and in one vein on Bear creek I found no metallic ores except sulphuret of zinc. The specimen of matte which I send you is made at the Lyons furnace, near Black Hawk. It is produced by smelting the gold-bearing sulphurets of copper, and contains all the copper, gold, and silver of the ore. It is about sixty per cent. copper, and varies from four hundred to six hundred dollars per ton in gold and silver. This matte is shipped to Swansea, in Wales, to be separated, the copper paying the expense of shipping and separating. This is probably the method which will be adopted for redcing all our ores, as it saves not only the gold and silver but the copper and lead. The specimens of gypsum and of variegated limestone are from the mountains west of Denver, where they both occur in unlimited quantities. The fossil woods are from a belt of similar fossils found scattered through a black, alluvial soil, from two to three miles from the base of the mountains. The surveyor-general reports that he has seen a stump of a palm tree two feet in diameter in this locality, and so perfect that water could be blown through the pores." .....The Black Hawk *Mining Journal*—every issue of which, for months and months, has been so loaded with interesting mining news that we have not been able to find room for a tythe of it—says in its issue of the 6th inst.: Messrs. Rollins & Lane have agreed to furnish the market in Denver, and in consequence no salt is being imported.....Mr. Ira Austin is opening a coal bank on Coal creek, about eighteen miles from Denver. He sunk a shaft thirty feet and is running south into a large bluff, the vein now eleven feet thick, then a foot of mixed rock and very hard coal, then three feet more of coal, and growing gradually thicker as they go south. The bed of the vein is fire-clay, into which they have gone four feet. It is considered probable there is more coal under the clay. The lower three feet of the bed is almost as hard as anthracite, and the coal grows harder the further they get in. It sells at the mouth of the shaft for five dollars a ton, and the demand exceeds the supply .....The Elk company, at Empire, have been doing satisfactorily well during the last five or six weeks. They have gone down something like one hundred feet and have struck iron ... Col. Grafflin says the Hope company are running their mill on poor ore and tailings, mixed, and are more than paying expenses. Their ore assays fifteen dollars per ton as they took it out—one hundred and twenty dollars a cord—and they get from ninety-five to one hundred and ten dollars from it; which says a good deal for the Keith process. They have let a contract to sink one hundred feet in their shaft, it already being four hundred and fifty feet deep..... Hasbrouck & Co., now have their tunnel driven at Argentine, or rather on Quail creek, ninety-three feet. At one hundred and three feet they design to stop for the winter.....The Smith & Parmelee company have had a retort cast at Langford & Co.'s, there not being one in the country large enough to retort their accumulation of amalgam for the last month or so. It is expected to turn out from one thousand five hundred to two thousand ounces of gold, which will doubtless be sent to the Exposition at Paris..... The Consolidated Gregory mine was stopped by Lyon & Co., because they have furnished $130,000 with which to put the mine in shape, and they want to make the other stockholders "come up to time." It is understood the mine is now in a condition to produce one hundred tons of ore a day; not such as is used in smelting, but as it comes from the mine. It would not loose in dressing more than sixty per cent. or at the very outside seventy.....Mr. Darby has shown us a letter from Prof. Alfred Du Bois of the South Park, on the Ballemonte coal fields, which contains the following: The coal is of good quality. A specimen taken from the level in the large vein nearest the furnace, yielded to a technical assay, forty-one per cent. of coke. For your uses in manufacturing iron, the coking would reduce this amount and render it comparatively harmless. The ash was not determined, but the amount is small. This would seem to show that the coal at Bellemonte can be coked and that it yields above the average .....A new arrangement for amalgamating has been found to answer better than the shaking-tables at the Keith mill (Mammoth), saving six per cent more gold. It consists of a set of three dolly-tubs discharging one into the other, then stationary, plain tables, like the old battery tables, and finally from nine to twelve feet of blankets. This is not a fifth as expensive and does not take anything like the room of the other process.

California.

Nevada.—The *Transcript* says: From the 1st day of January, 1866, to the 8th of Oct., 1866, 10,315 mines were recorded in the mining locations in the recorder's office. The claims located average about one hundred feet each, making a total of 1,035,800 feet located in less than ten months ..... During the present season the miners on Rocky bar, near Washington, have taken out large quantities of gold, and a large number of new gravel claims along the line of the channel have been located. We are informed that the entire channel from Washington to Canon creek has been taken up, and several claims have been located below town. This channel is supposed to be the old bed of the Yuba river.....The *Gazette* of Oct. 22d says: The most extensive hydraulic mining in this county is carried on by the American company, on Manzanita hill, near North San Juan, and the machinery and contrivances for saving the gold are perhaps the most perfect. The bank or face of the diggings, in some places, is a hundred and eighty feet in height, and the bulk of the gravel is washed down and sluiced off by the hydraulic, and a portion, being cement, is crushed in an eight-stamp mill. The mill has been in operation only a few weeks, and yields from thirteen hundred to three thousand dollars for every three weeks' run. .....The *National*, of Oct. 22d, says: Last Friday they discovered a rich streak in the Ophir, out of which about four thousand dollars was taken in a short time.....Bloomfield, about a mile from Nevada, is looking up wonderfully of late, owing to the unusual energy exhibited by the miners in opening up their gravel claims and getting them ready for winter work.....From a chemical analysis by Prof. Price of San Francisco, the ore from the Young America mine is found to contain about 69 per cent. of cobalt and nickle, and about 40 per cent. of other metals. According to the experiments made, the ore will yield per ton, ten dollars in gold, sixteen dollars in silver, twelve dollars in arsenic, and about forty dollars in cobalt and nickle. Prof. Price has offered, as agent of a Swansea company, to advance forty dollars per ton on all shipments.....The Meadow Lake *Sun* says: Returns from ten tons of third class ore from the Enterprise company's mine, worked at Grass Valley, was two hundred and eighty dollars, or twenty-eight dollars per ton. The ore was first roasted, and afterwards treated with superheated steam.

Mariposa.—The *Mining Press*, of San Francisco, says of the new process now in use on the Pine Tree vein: That the increased yield claimed is actually obtained, we think that there can be no further doubt; but in the absence of carefully conducted comparative experiments, we are not altogether certain that a portion of the increase may not be due to a better quality of rock than that heretofore obtained. An increase from ten to thirty dollars per ton, which is about the figure claimed, is a very large per centage of increase to be derived from improved machinery alone.

Kern.—The *Courier* of Oct, 20th says: We learn that the Alpine Gold and Silver Mining company's twenty-stamp mill, commenced operations on Monday, the 15th inst. This company have expended forty or fifty thousand dollars in the construction of their machinery and the opening of their mines, and now commence crushing rock under most favorable auspices. They have thirty or forty excellent lodes, ten of which are now thoroughly opened and developed.

Amador.—The *Ledger*, Oct. 20th, says: Pangh's mill is now going. He has about six hundred tons of fine-looking rock on hand. The shaft has now reached a depth of one hundred and fifteen feet.....In the Oneida a new and deeper level is now being run between the south and middle shaft, and the ore appears even better than usual.....The Spanish mine, located about two miles from Jackson, and owned by Fenton & Co., is proving very rich. They are now down a hundred and ten feet, with a wide vein, and the prospect gets better the deeper they go.....The Eureka, with its sixty stamps and 1,200 feet shaft, goes night and day.....The Wildman, the mine that cost fifty thousand dollars to prospect, is still yielding plenty of ten dollar ore .....The New York extension of the Union, Smith & Patterson, shows plenty of free gold and good sulphurets.

Calaveras.—The *Courier*, Oct. 20th, says: At Angel's, the thirty-stamp quartz mill of Southwell & Co., is nearly completed and ready for running. This is a first-class mill in all respects. Messrs. Baker & Co., have been running their "reconstructed" mill of twenty-stamps for the last two weeks with good success. Bovie & Co. run their mill night and day, having an inexhaustible supply of good paying rock. The mine of Stickles & Co. is also paying handsomely, the gold being equally diffused through a vein of ten feet in thickness. Angels presents a livelier appearance now than at any time for the past six years.

Mississippi.

Dr. W. Spillman writes to the *Southern Sentinel* concerning the geology of the eastern portions of Missis-

sippi, and commences: From what has been stated, no one would suppose that the east portion of the State abounds with mineral wealth, and that there is a sufficient amount of it in the vicinity of Eastport, to justify the conclusion that it at no very distant day, might become a manufacturing town of from five to ten thousand inhabitants. No one, without the knowledge of the science of geology, would suppose, that deep, down below the Eastport hills, which are from two to three hundred feet high, composed of debris, drifted there by currents of water, from one hundred to three hundred miles, there was deposited, for the use of man, rich reservoirs of petroleum. It should, however, be borne in mind, that these hills repose on the lowest member of the carboniferous rocks, and below the silicious limestone which extends from a few miles northeast of Eastport to McMinnville, Tenn. Another fact should also be considered. that the hills in the vicinity of Eastport constitute the western limits of the Cumberland and Sand Mountains, and that they repose upon an argillacious limestone, highly charged with petroleum. Petroleum is but a recent discovery, whether we consider it as to amount, use, or value; and it is probable that there is at this time more capital invested in the development and refining of it, than any other enterprise in the United States. It has been found in abundance in Pennsylvania, Virginia, Kentucky, Tennessee and Canada; and at the present time there are several wells being bored in the State of Alabama, with flattering prospects of obtaining a good yield. As rock of the same character and geological age of those abounding in Tennessee and Alabama, extend in the eastern border of Mississippi, we may also reasonably look for oil in that section of our State. Aside from the connection of the underlying rocks of the eastern border of Mississippi with those of Alabama and Tennessee, the surface indications for oil are as good, if not better, than at McMinnville, Tenn.; or the northern counties of Alabama. I have been informed that some years ago, when petroleum was considered a nuisance, at least by salt-well borers, that in blasting rock for the purpose of opening a channel for boats in McGrew's shoal, a few miles above Eastport, that a stream of oil was struck, and which floated off in considerable amount on the waters of the Tennessee. In the western edge of Franklin county Alabama, on Rock Creek, and near the Mississippi line, there is a tar spring, similar to the noted tar spring in the northeastern corner of Lawrence county, Ala. Nearly due west of this spring, in township 5, range 11 east, in Mississippi, there are as fine indications for oil as I have met with. The sandstone in the bed of Bear Creek, will blaze similar to stone coal, when thrown into the fire. A blacksmith, in the neighborhood of this place, told me that the rock would answer all the purposes of stonecoal, if it, as well as the oil in it, would burn. In connection with this oil territory, there is a large cyprus pond that dries up entirely in the autumn of very dry seasons. When this is the case, and fire gets into the driftwood, leaves, etc., oil, gas, peat, or some other inflammable substance, takes fire, and continues to burn under the surface until extinguished by heavy rains. I was told by a gentleman who owns a portion of the pond, and by others living in the vicinity of it, that large green trees often fall from the effect of the fire about their roots. This pond is of a horse-shoe shape, and, on the west and north sides, there is a continuous bluff of limestone, highly charged with petroleum. Prof. Hilgard, in his geological report of the State of Mississippi, says in reference to this pond: "Several branches enter into this pond, and among these, one at the end has excavated for itself a deep—almost square, and, for some distance, a subterranean channel in the limestone, so as to appear and disappear repeatedly. In exploring one of these channels, which is 18.24 inches wide by three feet high, for about twenty yards, I found the rock to be solid on all sides, the roof being curiously worn into cornice work, as though by the drippling of water from above;" and then adds: "The fetid bituminous odor of the limestone pervades the air of these eaves, as well as the water itself which is, in consequence, undrinkable."

This "bituminous fetid odor," spoken of by Prof. Hilgard, is the petroleum with which the rock and water are charged. The Mississippi and Alabama Oil and Mining company have a lease on six hundred and forty acres, at the above-mentioned place, and a very favorable one it is, from surface indications. A short distance below the above-named place, a man procured some stone to build a chimney; which, when completed, and a fire kindled in it, the petroleum in the stone took fire and burnt, to the great astonishment of the whole household. In a word, from the "burning pond" to the mouth of Bear Creek, the underlying carboniferous rocks, wherever found, are highly charged with petroleum. In the vicinity of Eastport, and for several miles down the Tennessee river, there are very favorable indications for oil.

Michigan.

From the Keweenaw *Times*, Nov 10th, we take the following: The Copper Falls and Central mines have been sending down, within the past week, some very large pieces of copper. The heaviest brought down from Copper Falls will weigh probably 7 tons. Breaking their scales at the mine, they could not weigh it. The Central mass will go nearly 8 tons. The Madison is also getting her mass copper down for shipment. The largest mass from the Madison weighed 4,400 lbs. —2¼ tons. A number of smaller pieces is now on Uren & Bawden's dock. The Madison copper is very pure .....The product of the Ætna mine for the month of October, with stamps running but half the time, was 19,002 pounds, or 98 pounds less than 10 tons .....A new agreement has been drawn up between the Pennsylvania and Delaware companies and their creditors, so that work will probably soon be resumed.....It is expected that the Copper Falls mine will give a product of 150 tons at least for the month of November. We see no good reason why it may not be done easily. They have in the copper house now at least 50 tons of masses for the November month, with a third of it only gone. The only thing that can possibly interfere with this product is a serious breakage somewhere; and should this occur, of course they will be unable to accomplish what they propose to. Their product for 20 days only in October was in excess of 100 tons!.....The Portage Lake *Mining Gazette* of the 8th says: The following are all the products we have been able to obtain this week: Shelden-Columbian mine—barrels, 25,312 lbs., or 15 tons, 1,419 lbs. Huron mine—mass, barrel, and stamp, 163,549 lbs., or 81 tons, 1,549 lbs.....The pumps at the Chelden-Columbian stamp mill were started this (Saturday) afternoon, and we are informed that they work splendidly.....We are reliably informed that they work spleadidly .....We are reliably informed that the Calumet conglomerate has been cut on section six, the Kearsage property, but for some reason best known to those interested, its exact situation has not been divulged. Our informant states that the belt is as rich in copper as at any point yet opened. What shall we say about these new mines that are daily springing up and promising in a short time to eclipse everything previously worked in the country..... We are not aware that a larger hammer or one of more effective blow is in operation in the United States than that in successful operation at the Calumet mine, performing the duty previously calculated it should. We give sundry notes on its construction and duty, which we trust will be of service to those of our readers who make the "machinery of mining" a study. This hammer is intended to fracture, bruise and stamp, as may be desired, the toughest copper-bearing rock of the Calumet lodes, presented to it for treatment in irregular shaped blocks of from 8 to 16 cubic feet. We have witnessed its performance and testify to its complete mastery over anything in the way of "Calumet rock," and have observed that a duty of one hour with the hammer, has prepared as great a product as previously was obtained during the day by the labor of twenty stalwart men with arms accustomed to the work, each of whom could swing with efficacy a 20 lb. sledge. In other words the product of the hammer's work will be about four hundred tons during the day, if it is delivered according to the requirement.

North Carolina.

We learn from a friend just returned from this State that the work of "reconstructing" Southern mining interests goes steadily onwards. The want of capital retards home development; but foreign capital is coming in, and many old mines and many new mines are now being brought into paying condition. Capitalists are beginning to find the article of cheap labor and moderate expenses far outweigh the bright hopes of richer paying lodes in the Pacific slope. In Cabarras county the Reid mine has passed into new hands, and already is producing gold. The Vanderburg mine has changed owners.....In Union county the Huey mine has new capital and new men, and will soon be in readiness to pump.....In Mecklenburgh county the Trotter, Rudisill, I. Means, Hunter, Wallace, and Wm. Means mines have changed hands to Northern companies, who intend pushing ahead with their works as rapidly as possible.....In Catawba county mines are now having their working machinery erected.....In McDowell county the Wilkinson mines are nearly ready for operation. The Butler mine has its buildings erected, its disintegrating stack in full and successful blast, and its amalgamator nearly ready for use. Other mines are in the first stages of "reconstruction".....In Burke, Pach's Hill has "struck it large," and the extension of the veins are being thoroughly cut upon by a strong force. .....In Cleveland county Rutherford & Cherokee will soon have their future history brighter, but at present no sales have come to our notice. The State Geologist, Professor Kerr, has spent the hot season in the last named county, and is understood to have made highly interesting discoveries. The N. W. auriferous belt of Georgia extends into this county. .....Davidson county has several mines which have gone into new hands .....Lincoln county is reconstructing rapidly. Northern capitalists have taken hold of these mines and are now developing, preparing to work. For gold, silver and iron, this county takes the lead.

South Carolina.

By a reliable private channel we learn that in Chesterfield district the Funderburk and Beaver and Edgeworth mines have changed hands, and a strong force is now upon them to re-open .....In York district the Sutton, Martin and Beck mines have passed into new hands. Kings Mountain mine has also changed owners, and it is understood that working capital worthy of the magnitudes of the property is raised to work it. The Dorn mine was worked successfully through the whole of the rebellion.... A telegram from Augusta, Nov. 20th, says: A party from Dorn gold mines, Abbeville, S. C., represents discoveries which promise large results. An old mill and one battery, after eighteen hours' work, gave 917 pennyweights gold from less than a ton and a quarter of reduced ore.

Arkansas.

The New Orleans papers mention the fact that Dr. Harrison, at the last session of the Academy of Sciences of that city, presented a very fine specimen of liguite, from the mines of Union county, Arkansas. By recent borings in that section three distinct seams of coal have been penetrated by the augurs. The upper seam is a brown coal, or lignite, similar to the Torbane Hill coal of Scotland; while the lower seams, the thickest of them being forty-three inches, are of the cannal variety. The best seam yet reached is nearly eighty feet below the level of the upper vein, and is five and a half feet in thickness where it is exposed at the base of the river bank, a few miles below Pigeon Hill, and above Jack's Island.

New Mexico.

The Gila River Placers are reported to prospect from one to three dollars to the pan "from the grass roots down." The Denver *News* of 5th October says that a company of five or six hundred persons will start from Sante Fe about January 1st, to explore those regions. The distance is some 400 miles. The danger from the Apaches is so great that such exploration would be impossible except to a large and well-armed party.

Australia.

By the steamer Kaikona, which left New Zealand, Oct. 8th, we learn that in South Australia large numbers of laborers are besieging the Government offices for employment.....Some very valuable deposits of copper had been discovered within a few miles of Ipswich, Queensland.....There had been no important news from any of the gold fields during the month. No large finds had been reported, nor had any new fields been discovered. The accounts from the northern and western diggings were encouraging, so far as they went, and the yield of gold had not decreased at all. The workings of the Bergalia Mineral Reef company were turning out well. The yield of gold as per last returns was 1¼ ounces to the ton. A new gold mining company had just commenced operations at Araluen.

Canada.

A telegraphic dispatch dated Toronto, Nov. 20th, states that the discoveries of gold at Madoc are corroborated. There is little doubt as to the extent and richness of the deposits.

British Columbia.

The *British Colonist*, Oct. 24, says: Times are very dull in Cunningham creek. The only company taking out any steady pay is the Standish company, who are working on a bench in the canon .....At Antler creek several companies are prospecting on the right hand bank, with a view of reaching the hill channel. One company will start a tunnel during the present week. The Bed Rock Flume company washed up about 200 feet of the flume, with very satisfactory results.....There are two companies at work on California creek, making wages. The water of Stevens creek has been brought into this creek by means of a ditch.....The Nanaimo *Gazette* says: Mr. S. Waddington and Mr. McGrath report the discovery by them of gold-bearing quartz on an island in the Gulf of Georgia, nearly opposite Nanoose. The bore is now down 385 feet; no fresh indications of the proximity of coal are reported.....A telegram from Hope, Sept. 25th, to the *Columbian* says: On the Similkameen some 40 to 50 Chinamen are working and making good wages. Mr. Krugor had turned the Similkameen, and was taking out big pay..... The *Tribune* says: From a gentleman who left Williams creek on Tuesday last we have received the following news from Cariboo: There had been copious rain, which gave sufficient water for working the claims which had been stopped. The Foster-Campbell company were taking out good pay, but not so large as previously. The Morning Star company had got into excellent pay and had washed up a large amount. The Caledonia company washed up 150 ounces to twenty-four hours' work; they had struck a rich spot. The Moffit company were in a good streak, and were taking out about 17 ounces to the set of timbers. The Cameron company were not doing so well during the past two weeks as earlier in the season; they were running prospecting drifts. The Last Chance company were making wages. The Rabey company were making rather more than wages. The Dead Broke company average about $20 a day to the hand. The Adams and Rankin companies were making good wages. The Watson, Davis, Borealis and Wake-up-Jake companies were not paying. The Cariboo company were averaging expenses. The Lillooet

company has been doing well of late. It was expected that men would be able to work for two months longer. A great many are determined to winter in Caribboo, and it is thought that there will be a great deal of prospecting done..... At Gronse creek the Heron company were averaging 50 ounces a day. The discovery company and Short Bend company were doing well—making over wages..... On Cedar creek there were about 50 men, and all the claims open were paying from one ounce to $20 a day to the hand..... Five men came to the Forks of Quesnel from the head of South Arm Lake for provisions, and purchased what would do them for five weeks. They returned to the head of the lake. It is expected they have found good diggings, but they declined to give any information to the public..... At Canyon creek quartz is the exciting theme. A lawsuit was going on at the mouth of Quesnel about a quartz claim; a man named Glover was plaintiff, and John Perrin and others defendants. A large quantity of the quartz is on the way down for assay.

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia	.....	.....	Nova Scotia	H. W. Nelson, 24 City Ex., Boston.
Ada Elmore	200,000	$2,000,000	South Boise, Idaho	B. Lawrence, 157 B'way, N. Y.
Amber	300,000	300,000	Greene Co., Penn	Geo. W. Grove, 276 S. Third, Phil
Albion	.....	500,000	Halifax, Nova Scotia	H. W. Nelson, 24 City Ex., Boston.
Alps	100,000	250,000	Illinois Central Dist., Col.	I. Stanton, Jr., 25 Nassau, N. Y
Ascot	50,000	5,000,000	Sherbrooke, Canada E.	G. H. Morrison, 17 Nassau, N. Y.
Atlantic	.....	.....		Chas. Barrett, 13 Doane, Boston.
Atlatic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 71 B'way, N. Y.
Astor	200,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic	.....	.....	Colorado	New York.
Bates & Baxter	.....	.....	Colorado	New York.
Bay State	200,000	.....	Colorado	Lem'l Bangs, Boston.
Benton	100,000	500,000	Colorado	F. W. Capen, 44 Ex. Pl., N. Y.
Black Hawk	50,000	5,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Beacon	.....	500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Bradshaw	250,000	1,000,000	Yavapai County, Arizona	O. H. Conover, 219 Dock st., Phil.
Burroughs	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Bullion	200,000	1,000,000	Bannock, Montana	69 Liberty, N. Y.
Bullion Consol.	300,000	300,000	Summit and Clear Creek, Col.	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co., Col.	
Canadian	.....	.....		A. Call, 7 Phœnix B'l'g, Boston.
Chem. Gold & S. R	.....	.....	Eldorado Company, Cal.	64 B'way
Church Union	240,000	1,200,000		Jesse G. Pitts, 69 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon	.....	500,000	5 miles from Halifax	H. Doane, 41 State, Boston
Chase	5,000	500,000	Colorado	W. E. Lawton, 81 John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col.	L. Bangs, 17 Nassau, N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandiere	100,000	500,000	5 000 A Famine Riv., C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial	.....	.....		W. N. Ely, 7 Trav'r B'l'g, Boston
Colorado Boston	.....	.....	Colorado	R. C. M'Laughlin, 60 State, Bos'n.
Colorado N. Y.	.....	.....	Colorado	12 Pine, N. Y.
Coleman	.....	.....	Colorado	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold	.....	.....		54 William.
Consol Gregory	50,000	5,000,000	Gregory Dist., Col.	30 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin, 35 Wm., N. Y.
Copalinshee	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 137 B'way, N. Y.
Corrisamee	100,000	1,000,000	Colorado	New York.
Commonwealth	.....	.....	Nevada	Philadelphia.
Corrydonn	100,000	2,500,000	Gilpin co., Col.	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 423 Walnut, Pa.
Day & Bushnell	300,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
De Lery	.....	10,000,000	Chandiere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Denver	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire	.....	.....		W. Stockbridge, 74 Fr'klin, Bos'n.
Downieville	300,000	300,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Dorset	.....	.....	Chandiere River, C. E.	F. McJunsey, 59 Wm., N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Bannack	100,000	200,000	Bannack City, Montana	J. Callender, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin	208 S. Fourth, Phila.
Empire Mill & M	.....	.....		O. F. Griffin, San Francisco.
Enriquetta	.....	.....	Arizona	New York.
Esperanza	.....	500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	30,000	300,000	Central City, Col.	J. Weatherbee, Jr., 11 P. B'g, Bos.
Fairmount	20,000	200,000	Colorado	John P. Harker, 109 N. 6th, Phil.
Famine Falls	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Georgetown	.....	.....	Colorado	New York.
Gilbert River	.....	.....		C. E. Jackson, 18 Phe'x B'g, Bos'n.
Gilpin	.....	.....		C. W. Galloupe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E	W. H. Adams, 19 Broad, N.Y.
Gold Field	.....	.....		C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold Hill	50,000	500,000	Colorado	W. T. Eustis, Boston.
Gold Mountain	600,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham, 23 William, N. Y.
Golden Gate	60,000	600,000	Sum., Highl'd & Hill C. D., Mon	J. Morse, Jr., 117 B'way, N. Y.
Gunnel Central	.....	.....	Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. E. Roelfson, 78 & 80 B'way, N.Y.
Gregory	20,000	1,000,000	Colorado	Thos. Wildes, 17 William, N. Y.
Granada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	E. Kemeys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. E. Roelofson, 78 B'way, N. Y.
Halifax	.....	.....		A. Case, 7 Phœnix B'l'g, Boston.
Harmony	.....	.....		Demas Barnes, 21 Park Row.
Hemit'go Ranch	30,000	200,000	El Dorado, Cal.	
Home	80,000	2,000,000	G'ld Dirt Lode, Gilp. co., Col.	J. P. Davies, 81 John, N. Y.
Holman	150,000	300,000	Gilpin co., Col.	J. O'Neill, 24 Nassau, N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000	.....	Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 137 B'way, N. Y.
Isle Royale	.....	.....		44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies, 111 B'way, N. Y
Kent	.....	.....		G. H. Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H Fales, 71 B'way, N. Y.
Liehig	200,000	$1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 54 Wall, N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	400,000	Colorado	W. R. Lothrop, 172 B'way, N. Y
Massachus'tts	250,000	1,200,000	Gilpin co., Col.	W. D. Briggs, 11 Phe'x L'l'g, Bos
Merchants	50,000	600,000	Alturas co., Idaho	Jas. K. Sellock, 157 B'way, N. Y.
Metropolitan	.....	.....		
Mountain Ppie	100,000	1,000,000	B'r C'k, St. Bse., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount A'pine	.....	.....	Griffith Dist., Clear C'k., Col.	J. B. Randol, N. Y.
Mount Vernon	500,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 23 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills., Greg'y, Col.	A. L. Gnerber, 54 Wm. N. Y
Monte Christo	100,000	2,000,000	White Pine District, Nev.	Thos. Dunlap, 413 Chestnut, Phil
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho	E. M. Barnum, 137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall, N. Y.
Melones & Stan	.....	.....	Calaveras co	606 Mont, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col.	31 School, Boston.
Nevada Star	.....	.....		25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico	.....	.....	near SantaFe	
New Gregory	.....	.....		W. A. Kent, 144 State, Boston
New York City	50,000	5,000,000	G'd Canon D't, Land. co. Nev.	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada.	71 B'way, N. Y.
New York of Col	00,000	1,000,000	Colorado	F. E. Roelfson, 74 B'way, N. Y.
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn, 30 Pine, N. Y.
N. Y. G Min'g	100,000	1,000,000	Colorado	F. E. Roelofson, 78 & 80 B'way.
N. Y. & Eldor'do	250,000	2,500,000	Nevada	G. H. Munroe, 106 B'way, N. Y.
N. Y. & Idaho	.....	.....	Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe	.....	.....	Nevada	New York.
N.Y. & Owyhee	.....	1,000,000	Owyhee co., Idaho	6 Pine, N. Y.
N. Y. & Oro Fino	10,000	1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y. & Reese R	.....	.....	Nevada	New York.
N. Y. & Renfew	.....	.....		2 Murray, N. Y.
N. Y. & Washoe	.....	.....	Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia	.....	.....		Chas. Barrett, 13 Doane, Boston
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g	.....	1,500,000	Owyhee co., Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham	.....	.....		Chas. Barrett, 13 Doane, Boston
Ophir	62,500	625,000	on Comstock Lode, Nevada.	Moses A. Hopnock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos.	23 Nassau.
Peck	.....	.....		E. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y.
Pioneer & Inskip	.....	.....	Buena Vista Dist., Nevada	15 Nassau, N. Y.
Phila. & Color'do	20,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm're	200,000	1,000,000	Colorado	W. H. Stendevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 60 Wall, N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M. Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Quaker City	.....	.....	Ind'l D't, G'd D't City, Col.	103 South Third, Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall, N. Y.
Ranche C'k	10,200	1,200,000	Pine Wood Dist., Nevada	18 Broad, N. Y.
Realito	.....	1,600,000	G'd Hill D., Storey co., Nev.	117 B'way, N. Y.
Reese River Pr'l	100,000	1,000,000	AmadorDist., Landor Co., Nev	Elijah Alliger, 67 Wall, N. Y.
Renfrew	.....	.....		W. Stockbridge, 74 F'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. H. Grant, Jr., 71 B'way, N. Y
Scorpion	.....	.....	Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff, N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall, N. Y.
Silver State	100,000	500,000	Humb't Starr, Pr. R. I Humb't co., Nevada	R. S. Miller, 49 William, N. Y
Silver Wave	300,000	3,000,000	Rosee riv, Lander co., Nev.	Emmet Blair, 243 B'way, N. Y
Smith & P'rmlee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad, N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col.	A. F. Bamm 48 Broad st., N. Y.
Spanish	.....	3,000,000	La Plata, Churchill co., Nev.	228 South Third, Phila.
So. Clear C'k	.....	.....	Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	P'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine, N. Y
Standard	50,000	500,000	Gregory Dist., Col	T. A. Mitchell, 70 B'way, N. Y
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	10 Pine, N. Y.
Sterling City	.....	1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston
Suffolk	.....	.....		Carlos Cobb, 22 William, N. Y.
Southard	.....	.....		Wm. Wallace, 11 Doane, Boston.
Stafford	.....	.....		C. E. Jackson, 15 Central, Boston
Tascher	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado.	Wm. F. Parish, 155 B'way, N. Y
Triunfo	.....	.....	San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way.
United States	75,000	1,500,000	Colorado	J. P. Steveus, N. Y.
University	.....	.....		31 Nassau, N. Y.
Virginia City	250,000	250,000	Nevada	J. B. William, 78 & 80 B'way.
Wanba Yuma	600,000	6,000,000	Arizona	35 William, N. Y.
Waddingham	48,000	1,200,000	Alturas co., Idaho	Jas. K. Sellock, 157 B'way, N.
Waverley	.....	.....		J. Leighton, 97 State, Boston
Windsor Gold M	10,000	100,000	Colorado	25 William, N. Y
Wilson & Cass	.....	.....	Colorado	New York

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	10,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	40,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Clute	150,000	550,000	Macomb T. St. Law. co., N. Y.	Bev'l'y S. Merrill, 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William, N. Y.
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul, 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass.	C. W. Bryant, Boston.
Jefferson	.....	.....		65 Wall, N. Y.
King's Hill	0,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	Secs. 5 & 36 T., 49 & 50 R. 28 & 29 Marquette co, Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley, 35 Pine, N. Y.
Macomb	10,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 60 City Ex., B stn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y.
Nanhan	.....	.....	.....	40 B'way, N. Y
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston	.....	1,000,000	Chester co., Pa.	S. M. Cockrin, 22 William, N. Y
Oswegatchie	.....	.....		24 Pine, N. Y.
Owens Lake	50,000	250,000		C. W. Bond, 78 Cedar, N. Y.
Phœnix	50,000	250,000	Columbia Co., N. Y.	G. W. Butler, 54 William, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins, 29 Wall, N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W.	C. W. Bryant, Boston.
Rochester	200,000	500,000		J. A. Ferguson, 8 Wall, N. Y
Rossie	.....	.....		24 Pine, N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau, N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau, N. Y
St. Joseph	100,000	1,000,000	St. Francis Co., Missouri	Jas. R. Knapp, 6 Broad, N. Y.
Shawangunk	100,000	500,000	Mt. Hope, Orange co., N. Y.	E. P. Ackerman, 48 Pine, N. Y
Sussex	25,000	625,000	Sparta Town, Sus'x co., N. J.	F. H. stow, 53 Cedar, N. Y.
Walkill	.....	.....	Orange co., N. Y.	W. A. Scott, 11 Wall, N. Y.
Warren	.....	.....	Warren, Grafton co., N. H.	J. S. Christie, 100 B'way, N Y
White Mountain	.....	.....	New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 134 so. 3d, Phil.
Argentine	50,000	250,000	Argentine Dist., Colorado	D. L. Dennison, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y
Astor	200,000	1,000,000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac.	50,000	1,000,000	Humboldt T. Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20,000	600,000	Smoky Hill, Lander Co. Nev.	71 B'way
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Montano	55 Liberty street
Bush	50,000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Stoute, Jr., 155 B'way, N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	50,000	3,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street, N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev.	49 Liberty street, N. Y.
Commonwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way, N. Y.
Cosmos	10,000		Owyhee Co, Idaho	137 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N Y.
East Bannack	100,000	200,000	Bannock City, Montano	J. Callender, 49 Ex. P., N. Y.
Empire G. & S.	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist., Nevada	57 B'way, New York.
Eldorado	500,000	2,500,000	San A 9o m s of Austin, Nev	208 South Fourth street, Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st. N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montano	New York.
Incas	300,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis, Nye Co, Nev	H. R. Shotwell, 70 Cedar, N. Y.
Lander Hill			Nevada	74 B'way, New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Lw'r California	40,000	2,000,000	North Part of Lower Cal	53 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 B'way, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way, New York.
Merchants	30,000	600,000	Atlanta Co. Idaho	137 Broadway, N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 B'roadway, N. Y.
Morning Star	5,000	5,000,000	Owyhee County, Idaho	137 Broadway, N. Y.
Mount Vernon	500,000	5,000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50,000	500,000		J. Chapman, 71 Bway, New York
National	15,000	1,500,000	Owyhee Co, Idaho	115 Broadway, N. Y.
Nevada	100,000	300,000	Mountain Wells, D. Ch. co. Nev	323 Walnut street, Phila.
Nevada	20,000	1,200,000	Nevada	E. L. Boles, 74 B'way, N. Y.
New Y'k & Ione	20,000	2,000,000	Ione City, Nye Co., Nev	71 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Cau Dist. Lauder Co. N	10 Pine street. New York.
New Y'k Dis't.	50,000	5,000,000	80 m f'm Austin, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev	10,000	1,000,000	Nevada	J. J. Osborn, 30 Pine street, N. Y
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N. Y. & Oro Fino	10,000	1,000,000	do. do.	137 Broadway, New York.
N. Y. and Silver Peak	20,000	2,000,000	Nye County, Nevada	R. C. Root, 74 Breadway, N. Y.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California, Mexico. On Comstock Lode, Nev	24 Pine, N. Y.
Ophir				
Pah Ranagat C'l	50,000	5,000,000	Nevada	26 Pine, N. Y.
People's	100,000	500,000	Alpine & Sierra Counties	8 Pine street, New York.
Phœnix	200,000	2,000,000		48 East 26th street, New York.
Picacho	50,000	2,000,000	Arizona	T. H. Perkins, New York.
Pine Mount'n	50,000	3,000,000	Pine Mount'n Dist. Nev	F. K. McCulley, 100 B'dway, N. Y.
Pioneer & Inskip			Buena Vista Dis., Austin, Nev	15 Nassau street, New York.
Prescott	50,000	2,500,000	Arizona	T. H. Perkins, New York.
Presidential	125,000	2,500,000	Austin, Nevada	Wm. Lemmon, 17 Broad, N. Y.
Republic	15,000	1,500,000	Amador, D Lander Co. Nev.	67 Ex. Place, New York.
Revenue Exten	50,000	500,000	Lauder County, Nevada	W. L. Kite, 142 South 4th, Phila.
Rosario & Carmn	5,244	1,480,000	Smaloa, Mexico	San Francisco.
San Antonio	60,000	3,000,000	Arizona	C. Lamson, 21 Nassau st., N. Y.
Seminole	7,000	1,500,000	Unionv., Humboldt Co., Nev.	L. G. Wilkin, 119 B'way, N. Y.
Silas Wright	50,000	600,000	Amador, D Lauder Co, Nev.	18 Wall street, New York.
Silver Hill	40,000	1,000,000	Nevada	J. C. Hitchcock, 62 B'dway, N.Y.
Silver Series		1,000,000	Lander Co., Nevada	W. B. Rogers, 117 B'way, N. Y.
South Boise, T. Co	200,000	2,000,000	Alturas Co., Idaho	A. M. Palmer, 19 Broad st., N. Y
Star Hill	20,000	1,000,000	Nevada	155 B'way.
St'h Cl'k Crk			Colorado	Canastota, New York.
Stephenson	500,000	1,000,000	18 m E of Ft. Filmore	A. S. Kellogg, 22 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev.	10 Pine, New York.
Sterling City		1,200,000		New York.
Tarshish		1,200,000	Toryabee Range, Cn. D., Nev	H. S. M'Collum, 78 B'way, N Y
Tempest	200,000	1,000,000		L. Bangs, 17 Nassau, N. Y.
Trumbo			San Antonio, Lower Cal	San Francisco.
Toiyabee	50,000	5,000,000	Pine d'l, Mo'tn Dis, Nev	J. M. Brown, 157 B'wy, N. Y
Union & El D'o.	100,000	1,000,000	Mogul Silver Mo'tn. 100,000 Montana	40 Park Row. 107 Broadway.
Upper Missouri.				
Vedder	21,000	2,100,000	Amador Dist., Nevada	L. G. Bingham, 80 B'way, N Y.
Wamba Yuma	600,000	6,000,000	Arizona	35 William street, New York.
War Eagle	50,000	200,000	Owyhee Co., Idaho	G. M. Eldridge, 144 S. 4th, Pl.
Washington	22,500	2,250,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y
White Mountain			New Hampshire	111 Broadway, N. Y.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY	SEC'Y., AND PLACE OF BUSINESS.
Astor,	20,000	500,000	Michigan,	Pittsburgh.
Adventure,	20,000	1,000,000	Parts of Sections 35, 36, T. 51, N Range 28 W,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20,000	500,000	1226 A in Secs. 6, 7, 18, T. 58, N R 28, W Keweenaw co, Mich.	B. A. Hoopes, 324 Walnut St., Phil.
Alb'ny & Bost'n,	20,000	1,000,000	Secs 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000	500,000	Del Norte co., California,	8 Wall St., N. Y.
Algomah,	20,000	500,000	W½ S. 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000	500,000	Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gd'l'yd'l.,	20,000	500,000	E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31, 160 A,	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000	500,000	NW¼ Sec. 20, T. 57, R. 33, 160 A,	C. P. Dixon, 48 Pine St. N. Y.
Atlas,	20,000	500,000	NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000	500,000	W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay State,	20,000	500,000	SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Bohemian,	20,000	500,000	E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N Y.
Boston,	20,000	500,000	Michigan,	H. W. Warren, 60 City Ex., B'st'n.
Canada,	20,000	500,000	Brome co., Canada East,	H. P. Mount, 3 Hanover St., N. Y.
Calumet,	20,000	500,000	Michigan,	Boston.
Concord,	20,000	500,000	Michigan,	Bostou.
Carp Lake, M.,	20,000	500,000	T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E½ Sec. 23, and NE¼ Sec. 23, 440 A.	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000	500,000	SW¼ Sec. 9, T. 49, N. R. 39, W, in Ontonagon co., Mich.	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000	500,000	Sec. 14, T. 58, N. R. 31, W, Keweenah Point,	97 State, Boston.
Copper Harbor,	20,000	500,000	8½ Sec. 10, T. 58, R. 28, 320 A, Keeweenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 71 Broadway, N Y.
Central,	20,000	500,000	E½ Sec. 23, T. 58, N. R. 31, W,	J. Stanton, jr., 25 Nassau, N. Y.
Cornwall,			Strafford, Orange co., Vt.,	D. H. Whitney, 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way, N Y.
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000	500,000	Sec. 35, T. 55, R. 34, Portage Lake,	Boston, J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500,000		S. M. May, 326 Walnut St., B'st'n.
Dorchester,	20,000	500,000	Michigan,	31 and 32 City Ex., Boston.
Douglas,	20,000	500,000	E½ Sec. 30, T. 55, R. 3,	S. J. Edwards, William St., N. Y.
Dudley,				H. Bigelow 43, City Ex., Boston.
Eagle River,	20,000	500,000	T. 58, R. 31, Secs. 28, 29, 33, 34,	A. Lamson, 70 State St., Boston.
Ely,	00,000	500,000	325 A., Richmond, Canada East,	Ernest Sacchi, 82 B'way, N. Y.
Empire,	20,000	500,000	1798 A., Secs. 1, 2, 11, 12, T. 58, N. K. 28, W. K'w'n co., Min.,	J. S. McMullin, 423 Walnut, Phil.
Eureka,	20,000	500,000	W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley, 137 B'way, N. Y.
Evergreen Bluff,	20,000	500,000	NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen, 44 Ex. Pl., N. Y.
Edwards'Copper	20,000	500,000	Michigan,	H. K. Thomas, 12 Wall, N. Y.
Eagle Harbor,	20,000	500,000	Michigan,	51 Ex. Place, New York.
Frue,	20,000	500,000	Michigan,	A. S. Kellogg, 22 Pine st., N. Y
Flint Steel R.,	20,000	500,000	Sec. 11, 12, T. 50, N. R. 39, W,	F. K. McCully, 157 B'way, N. Y.
Forest City,	20,000	500,000	320 A. NE½ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000	500,000	¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hann, 162 Fulton St., N. Y.
French Creek,	00,000	600,000	Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y.
Garden City,	20,000	500,000	SW¼ Sec. 60, N. W. Sec. 59, T. 58, N. R. 31 W.	R. H. Howe, Chicago.
Girard,	20,000	500,000	600 A. Sec. 15, T. 58, N. R. 23, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000	500,000	SW¼ Sec. 36, R. 34, W.,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000	500,000	SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 City Ex., B'st'n.
Hamilton,	20,000	500,000	SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14½ A.,	J. B. Townsead, 44 Exchange, N. Y.
Hancock,	20,000	500,000	SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston. do. do. do. do.
Hanover,	20,000	500,000	Michigan,	
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W, Michigan,	T. M. Tyng, 61 Cedar St., Boston. 57 Broadway, N. Y.
Henwood,				
Hope,	20,000	500,000	240 acres in T 57, R 32, Kw co	19 Nassau St., New York.
Humboldt,	20,000	500,000	Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Huron,	20,000	500,000	Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Hilton,	20,000	500,000	Michigan,	W. H. Smith, 51 Ex. Place, N. Y.
Indiana Copper,	20,000	500,000	Michigan,	25 Nassau st.
Isle Royale,	20,000	1,000,000	NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl., Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000	500,000	SE¼ Sec. 1, W½ of SW½ Sec. 1, and other lands,	44 Ex. Pl., N. Y.
Lafayette,	20,000	500,000	Secs. 25, 30, 36, T. 51, N. R. 43, and 44, W, Ontonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000	500,000	Part sec. 18, 19 entire, 30, 31	Fred. Beck, 43 City Ex., B'st'n.
Merryweather,	20,000	500,000	Secs. 9, 19, T. 48, N. R. 4, W,	J. T. Waters, New York.
Mandan,	20,000	500,000	680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Mn.,	B. A. Hoopes, 324 Walnut, Phil.
Manhattan,	20,000	500,000	W½ Sec. 11, NW¼ Sec. 14, T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau St., N Y.
Mendotta,	100,000	500,000		M. Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	20,000	500,000	SW¼ Sec. 7, T. 50, N.R. 38, W,	J. M. Cooper, Pittsburgh.
Mesuard,	20,000	500,000	NE¼ Sec. 24, T. 55, R. 34, Calaveras co.,	L. Burr, 12 Phœnix B'gs, Boston.
Melones & Stan.,				606 Mont St., San Francisco
Minnesota,	20,000	1,000,000	Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Medora,	20,000	250,000	Michigan,	Pittsburgh.
Michigan,	20,000	300,000	Michigan,	W. H. Smith, 51 Ex. Place, N.Y.
Merrimac,	20,000	500,000	NW¼ Sec. 34, T. 51, R. 38, W, Ontonagon,	J. M. Mills, 284 Pearl St., N. Y
National,	20,000	300,000	Sec. 16, T. 50, R. 39, W, 1.988 A.	J. M. Cooper, Pittsburgh.
Nequakett,	20,000	500,000	Sec. 26, T. 51, R. 43,	
New Burra,			Baltimore,	R. Roberts, 19 Nassau St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey,	W. Bowes, 68 Wall St., N. Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jr. 23 William St., N Y
New Devon,				T. H. Belt, do. do. do.
North Western,	20,000	300,000	W½ Secs. 24, 25, 26, E½ Secs. 26, 35, T. 58, N R. 31,	17 William St., N. Y. J. M. Cooper, Boston and Detroit.
North Cliff,	20,000	200,000	Michigan,	Pittsburgh,
Norwich,	20,000	500,000	Secs. 11, 12, T. 40, N R. 39, W. and other lands, 1,300 A.,	P. C. Blancan, 35 Wall St., N. Y.
Ogima,	20,000	500,000	NW¼ Sec. 6, T. 50, N.R. 33, W.	G. E. Leffingwell, 7 Pine, N. Y.
Ontonagon,	20,000	500,000	631 A. Secs. 20, 21, 28, T. 50, N. R. 39, W. Rockland.	G. Hart, 11 Pine Street. N. Y.
Otisville,	100,000	500,000	Otisville, Orange co., N. Y.,	C. Wiudsor, 69 Wall St., N. Y.
Penn. Mauuf'g.,	20,000	1,000,000	4,320 A. Secs. 13, 14, 15, 24,	
Petherick,	20,000	500,000	Michigan,	Boston,
Phenix,	20,000	500,000	Michigan, ½ Secs. 10, 11, 12, 23, 25, T. 58, N. R. 30, W.	Boston, S. M. Day, 326 Walnut St., Phil.
Pewabic,	20,000	500,000	W½ Sec. 25, T. 55, N.R. 34, W.	C. Emery, 39 State, Boston.
Pitts. & Bostou,	20,000	150,000	Ts 58, 57, N. R. 31, 32, W, 12,495 A.	H. A. Johnston, Pittsburgh.
Pontiac,	20,000	500,000	SE¼ Sec. 13, T. 55, N. R. 31, W.	C. Emery, Kilbey St., Boston.
Prescott,	100,000	1,000,000	Central Arizona,	69 Broadway, N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW½ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	J. W. Davis, 21 Nassau St., N. Y.
Phila. & Boston,	20,000	500,000	640 A. Sec. 14, T. 58, N. R. 28, W. Keweenaw co., Mich.	J. S. McMullin, 423 Walnut St., Boston.
Quincy,	20,000	500,000	Sec. 26, T. 54, N. R. 34, W,	W. H. Smith, 51 Ex. Pl., N. Y.
Republic,	8,000	200,000		H. Baldwin, 70 Wall St., N. Y.
Rehance,	20,000	500,000	Secs. 21, 22, 27, T. 58, N. R. 28, W, 19,785 A.	H. K. Thomas, 11 Wall St., N. Y
Rochester,	200,000	500,000		J. A. Ferguson, 8 Wall St., N. Y.
Rhode Island,	20,000	500,000	Michigan,	New York,
Ridge,	20,000	500,000	Sec. 35, T. 51, R. 38, W,	51 Exchange Place, N. Y.
Rockland,	20,000	500,000	Sec. 11, T. 50, R. 34,	S. J. W. Barry, 71 B'way, N.Y.
Resolute,	20,000	500,000	1,120 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich.,	F. Beck, 45 City Ex., Boston.
St. Mary,	20,000	500,000		E. B. Sutton, 43 Pine, N.Y.
St. Margaret,	200,000	1,000,000	Canada,	Boston,
Saint Clair,	20,000	500,000	Michigan,	P. C. Blancan, 35 Wall St., N. Y.
Sharon,	20,000	500,000	Ontonagon co., Mich.,	S. J. Edwards, 22 W'm. St., N Y
Sheldon & Col.,	20,000	500,000	SE¼ Sec. 36, T. 55, R. 34, W, SE¼ Sec. 34, T. 55, R. 34, W,	H. W. Nelson, Boston.
South Side,			T. 58, 59, N. R. 28, 30 W,	Copper Harbor.
Societe Fran'se,	10,000			
Superior,	20,000	500,000	W½ Sec. 14, T. 50, N. R. 39, W,	S. J. W. Barry, 12 Pine St., N. Y
Toltec Consol.,	20,000	500,000	Secs. 25, 26, R. 50, R. 30, Wisconsin,	H. W. Nelson, Boston. 17 William St., N. Y.
Ural,				
Vulcan,	20,000	500,000	1,120 A. Secs. 7, 17, 18, T. 58, N.R. 27, W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phila
Victoria,	20,000	500,000	Secs. 20, 29, 30, 34, 34, T. 59, R. 34, and other lands,	L. W. Clarke, Boston.
W. Minnesota,	20,000	500,000	Secs. 17, 18, 19, T. 50, N. R. 39, W.	C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts,	G. A. Sneden, 12 PineSt., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Wamba Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y.
Winthrop,	20,000	500,000	Michigan,	Boston

S, means section; T, township, R range.

AMERICAN
Journal of Mining.

[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR

In publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

OFFICE, 37 PARK ROW, NEW YORK.

Published Every Saturday Noon.

TERMS:

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy -	$4 00	One line [Nonp.] I nser'n.	$0 50
Six months, one copy -	2 25	One Square, 10 lines, one do	2 00
Three months, one copy -	1 25	One Square, do. four do	5 00
Single copy - -	10	One Square, do. one year,	40 00

Canadian subscribers 25 cents extra for postage.

☞ Specimen copies sent free.
☞ Liberal reductions to permanent advertisers.

DESIGNING, LITHOGRAPHING, WOOD ENGRAVING, and JOB PRINTING
Executed in elegant style, on reasonable terms.

Address **WESTERN & COMPANY, Proprietors,**
No. 37 Park Row, and No. 145 Nassau Street, New York City

AGENTS,
AUTHORIZED TO RECEIVE SUBSCRIPTIONS AND ADVERTISEMENTS.

COLORADO—GEO. TRITCH, Denver City.
" W. S. STANLEY, Jr., P.M. Mill City, Clear Creek Co.
" S. M. RICHARDS, City Book Store, Central City.
" R. C. MILES, P. M., Golden City, Jefferson county.
CALIFORNIA.—W. F. LOOMIS, San Francisco.
MASSACHUSETTS.—S. M. PETTENGILL & Co., Boston, Mass.
MEXICO.—Messrs. B. C. BARKSDALE Y CIA., proprietors of the American and Mexican News Company, and Agencia General de Libros, City of Mexico, Primera Calle de San Francisco, No. 13; Vera Cruz: Calle de Maria Andre, No. 627.
In Guanajuato, Real del Monte, Guadalajara, Durango, San Luis Potosi, and all other mining districts of Mexico, the correspondents of Messrs. B. C. Barksdale y Cia. are the only authorized agents of the JOURNAL.
PENNSYLVANIA.—A. WINCH, Philadelphia, Pa.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage.

NEW YORK, SATURDAY, NOVEMBER 24.

Contents of this Number.

A FEW FACTS AND FIGURES ABOUT THE MINERAL AND METALLIFEROUS WEALTH OF AMERICA.

The increasing power and wealth and population of this wonderful country are often dilated upon in general terms, and read with infinite relish, but very few of us really comprehend their significance when thus applied. A glance at a few figures will give a very good idea of their true meaning. From the census of 1860 we learn that the production of pig-iron in the United States had already reached over one and a quarter millions of tons per annum. The amount of American anthracite coal sent to market increased from 34,374 tons in 1825 to 9,265,091 tons in 1865. In gold everybody knows of the countless millions that, since 1849, have been and are still being taken out of our hills, rivers and *placeres*—and how the yield is continually augmenting. In silver very many millions of dollars are now annually extracted, where but a few years ago no one dreamed such treasures were lying buried. Our copper, which fetches in Europe nearly double the price of any other, is, under such a stimulus, increasing largely in yield. Our petroleum product has also advanced from 7,037 barrels in 1859 to 1,200,000 in 1865. So, in fact, with all our mineral stores. All the manufactures depending upon those products have similarly increased. Thus in the year 1850 only 44,000 tons of American rails were made, but in 1865 there were eight times as many, viz: 353,000 tons; and so with other industries—and as we increase the home product, we correspondingly diminish foreign importations. Our enormous mineral wealth directly and indirectly attracts both capital and labor. It was but the other day that we read in an English exchange of some great manufacturer who was about to transplant his factories from Scotland to the United States, and it was stated at the same time that others had already done, and many more intend to do the same thing. Then turning to the statistics of migration we find that 199,811 foreigners arrived here in 1863; 227,535 in 1864; and 287,180 in 1865; while from January 1st to October 31st of the present year the Castle Garden immigration register shows 202,440 names against 156,151 registered in a corresponding period last year—but with the singular change that while the Irish show an increase of only 5 per cent. over last year, the English have increased 30 per cent., and the Germans 40 per cent. The likelihood of another great war at no distant day between Austria and Prussia may partly account for the swollen German migration: the desire to see the "Regeneration of Ireland" this year or next may have detained many Irish; but the rush of English immigrants is partly due to the closing of so many Cornish mines and the fact that British skilled laborers have learned where their services will be best paid and appreciated. British migration is likely to increase still more, on account of the distressed condition of the laboring classes throughout the dominions of that Government. Thousands of voices are heard at Deptford and in other towns of England and Scotland, demanding work, or bread; Ireland never ceases to complain; other thousands are suffering for want of work in Australia; while hundreds of thousands are dying of famine in India, and it is feared that the prodigious number of corpses lining the streets and roads will breed in that empire a still more deadly pestilence. Furthermore, the muscle of Great Britain—thanks to the influence of the American press and the voices of John Bright and other Reformers—is beginning to ascertain that it has a *mind*, and that if this fact is not recognized in England it is in this land of equality and freedom. However, the result is what we look at, viz.: the steady but rapid and irresistible increase of our population, our industries, our wealth, and our power; and we believe that at the bottom of all this prosperity—probe it never so deeply—will be found the immense treasures of minerals and metals which Providence has vouchsafed us, and the energy and enterprise of our national character in developing them.

A SUCCESSFUL PROCESS.

Some months ago we illustrated and described at length a "Chloride of Sodium process;" which many years ago had been stumbled upon in the course of some experiments made by Mr. John N. Wyckoff at his gold mines in Virginia, and since tested by him to a very considerable extent. We have recently heard more of it, viz: that it has been tried at the Holman Mill, Black Hawk, Colorado, by Professor Bradford, who found that the *tailings* of that mill yielded from $100 to $500 per ton by this process; that Engineer Aitken has tried it in Montana, and found produced from the rock he tested an average of $400 per ton, some of it going as high as $8000; that a number of scientific gentlemen, as well as many practical mill men, have taken ores to be treated at Mr. Wyckoff's Reduction Works in Williamsburgh, and after working them in batches of 200 lbs. to the charge, with their own hands, have been absolutely startled at the results; and that some thirty mining companies operating in different parts of the country have decided upon adopting it. These particulars we have not only from Mr. W.'s own lips, but from those of other gentlemen of veracity who are not pecuniarily interested in the success of the process—except in so far as every person engaged in mining must be interested—and who have tested the matter themselves. One of them is Professor Bradford—who made his tests in Colorado, without the knowledge of Mr. W.—and he informs us that he is certain it is the best process for saving gold, and thinks it may prove the best in saving silver and other metals, although not quite sure about it yet, but through the JOURNAL OF MINING will inform the mining public of the results of extended experiments in that direction, which he is now making. Many old miners and mill-men will probably doubt whether such results can be obtained as Mr. Wyckoff's books show, for they are really marvellous, but let them take 200 lbs. of ore with them, and their own quicksilver and salt, and manipulate the batch with their own hands at his works—or let them do it at their local mills in the manner indicated on page 177, vol. I, of this journal—and they will probably be as much astonished as was our friend Dr. Stevens, who tells us he obtained by this process double the yield given by any other. We must confess that we have been very slow to believe, and are not yet ready to give it our unqualified indorsement, but when we hear such competent and disinterested gentlemen speaking so highly of it after a fair test, we certainly can do no less than to advise all interested in the cheap, simple, rapid and efficacious working of ores to give it a trial.

Sir Morton Peto all Right Again.

We learn from the *Iron Trade Circular* (*Rylands*) that in spite of the desperate efforts of the Directors of the London, Chatham and Dover Railway, to wriggle out of the responsibility and to make Sir Morton Peto their scapegoat, he, in his Bristol speech, "set himself right with the public, and answered every charge, and there is not now a shadow resting on the honor and integrity of Sir Morton." In common with a legion of American well-wishers, we are heartily glad to have this assurance, and hope he will "have it all out in the House of Commons," as he promises to do.

The Iron and Steel Association.

The annual meeting of this excellent society has been postponed from November to January next, when measures will probably be taken to secure a continuance of the public meetings, which have recently been suspended. We trust that the Association will then start again with renewed vigor.

MINING COMPANY STATEMENTS.

NORTH STAR MINING COMPANY.—CAPITAL STOCK, $500,000, IN SHARES OF $50. PAR; WORKING CAPITAL, $180,000; OFFICE, No. 88 WASHINGTON STREET, CHICAGO.

From the prospectus of this Company we learn that they own 310 feet on Quartz Hill, Illinois lode, Gilpin county, Colorado, with a 12 stamp mill thereon, which also does duty in hoisting ores. Mr. Mitchell, "engaged in practical mining for several years in that vicinity," has charge of the works, and the Company have great faith that he will give them early dividends; and certainly a practical man will do more that way than any other. The stock is full paid; not liable to any further assessments.

MEETINGS.

Pioneer & Inskip Mill and Mining Company (see advertisement); Malcolm Silver Mining Company, No. 18 Wall street, Nov. 30th; National Gold Mining Company, at 326 West 32d, Dec. 3d; New Hampshire Silver Lead Company, at 91 Broadway, Nov. 30th; Benjamin Oil Company, at 71 Broadway, Nov. 26th; Allegany & East Rock Oil and Mining Company, at 72 Wall street, 28th inst., 2 P. M.

DIVIDENDS.

Mountain Oil Company at 192 Broadway, 2 per cent. on de-

mand, Nov. 26th; U. S. Petroleum Company, at 38 Pine street, 2 per cent. for month of November, payable on or after December 1st; Ralston Oil Company, Pittsburg, Pa., 2 per cent.

ASSESSMENTS.

Eagle Harbor Copper Company, at 51 Exchange Place, $1.00 per share, payable on or before December 20th.

Scientific Meetings.

POLYTECHNIC BRANCH OF THE AMERICAN INSTITUTE.

OCEAN CURRENTS.—WHY ARE THE CONTINENTS IN PAIRS, AND WHY SIMILAR IN SHAPE?—IS PETROLEUM LIABLE TO COMBUSTION?

At the meeting of the Society on Thursday evening Professor Grimes exhibited charts showing the forms of the continents and the direction of the great ocean currents. He said that the peculiar forms of the continents had not been pointed out until lately; that Humboldt was the first who had noticed them particularly, and that he had said that the cause of their form would probably never be ascertained. The continents lay in three pairs, and the same cause which had raised the one above the waters had raised the other two. If we examine the map of the world, we find that America is divided into two parts, one lying to the north of the other, and joined together by an isthmus. Europe and Africa are similarly situated and similarly joined. Asia and Australia are in the same relative position and similarly joined; not apparently, however, for there is water between; but this water has a depth of only 200 to 300 feet, and were the land raised to this extent, only an isthmus would be seen connecting Asia and Australia, with deep water at each side of the isthmus. This similarity in position was no doubt owing to some as yet unknown natural law. The same cause which raised America raised also Europe with Africa, and Asia with Australia, in parallel lines. Looking again, we find the pairs of continents pointed at the lower end; also hollowed out on the western side, and pointed again on the east. What was the cause of these similarities in form? The popular idea of the formation of the crust of the earth is, to suppose that it was once a heated mass; that when cold the waters had formed on it; that in some places the crust had broken in or bent down, while in other places it had risen from the level. Thus dry land was produced, and the water gathered into seas. But how, then, came this extraordinary similarity of continents? This theory does not account for it. Again, when one examines the map attentively, from a geological point of view, it is seen that the land has first risen in the north of Europe and north of Asia and of America, while the newer formations are in Southern Europe, Asia, and the more southern part of North America. Looking for a theory which would account for all these data, I came, said he, upon the following:—That the earth was once a round, even ball, covered by water; that six currents worked in this water, produced by the motion of the earth; that these currents caused the earth to be deposited in masses, which bent down the crust of the earth, and caused it to rise at the edges of the current. Thus all these facts are accounted for. That this theory is probable is shown from the currents being still at work—three in the north, and three to the south of the equator—and that they ought to be there, may be shown by mechanical experiment of the motion of substances on bodies rotating in a similar manner to the earth and under similar influences. The professor then explained the ocean currents, showing how the heat was one great agent in producing them. It was objected that the wind produced these currents, and that the air was affected similarly to the water. This the professor objected to, since, he said, the water had to travel thousands of miles north before it lost the influence of heat, but air had to travel only three miles upward and it would be cooled. He was invited to enter further on the subject at a future time, and also to explain why, on his theory, there was likely to be an open sea and ocean current at the poles. Drs. Stevens and Bradley, Professor Van der Wede and the Chairman participated in the discussion.

Dr. Hirsh then read a paper on petroleum, to prove, despite the statements of Dr. Van der Wede, that it will oxidise. He quoted opinions in favor of his view from the most eminent modern chemists, who have studied the subject of petroleum; also showed that the color of all petroleum changes, which he considered an evidence of oxidation. Dr. Van der Wede read letters from two of the authorities which Dr. H. had quoted, which seemed to show that these gentlemen had changed their opinions since writing their books. He also said that he did not mean to say that petroleum would not oxidise after being treated with acids, but only that it would not do so when in a natural state.

GERMAN POLYTECHNIC.

ANCIENT AND MODERN ARCHITECTURE.

This Association met last Friday evening at its rooms on Rivington street, the President, Mr. Rochow, in the chair. Mr. Z. Wertheimer opened the discussion on ancient architecture by an elaborate and interesting essay on the details of the Doric and Ionian style of classical architecture, of which numerous samples, still existing in ruins, were cited, and their merits and faults noted. The adaptation of those styles to modern architecture was discussed at great length, until the meeting adjourned.

Original Papers.

[WRITTEN FOR THE JOURNAL OF MINING.]

MINERALOGICAL SKETCHES OF THE COUNTIES IN SCOTLAND—No. 3.

By H. Dussauce, Prof. Ind. Chemistry to the French Polytechnic; Chemist to the French Imperial Laboratories, etc., etc.

CAITHNESS-SHIRE.—Red, white and blue sandstone, limestone, slate and marl are found in nearly every parish, particularly in Reay, Olrich, Halkirk, etc. The sandstone has veins of calcareous and heavy spar running through it. At Gerstone, near Halkirk, a vein intersects blue calcareous sandstone and limestone, and is filled with pebbles and fragments of granite, quartz, syenite, etc., though the nearest known rocks are distant 15 miles. Mines are not wrought, for want of coal, though ironstone, white and yellow mundick, a vein of heavy spar mixed with lead, and three feet thick, occur at Thurso, and copper ore at Wick Castle. Sandstone consists of syenite, granular limestone, conglomerate rocks and sandstone, all of contemporaneous formation. No coal has been found, though a substance having that appearance, and which burns with a bright flame, is often found near the surface.

CLACKMANNAN-SHIRE.—Coal, ironstone and limestone abound everywhere. About 130,000 tons of coal have been turned out in this small county in a year. It is interrupted occasionally with dykes; dips northeast till it reaches the Ochills, and then follows the rise of the mountain rocks. Their junction may be seen at Westertown, in the glen of Tillicoultry. The coal strata are sandstone, argillaceous schistus, ironstone, greenstone and fine clay, above which is a bed of shells, and in the clay are found organic remains. Benclough and Dunmyat hills are composed of greenstone, rudely columnar, 100 feet thick, and resting on the common alternating series of coal strata. From this rock burr stones are made to imitate those from France, and which cost only £16 or £20 a pair, while the French stones cost £60. Copper is found at Blairlogie and Airthrey, lead at Dollar, and specimens of silver at Middlehill, Woodhill, Airthrey and Alva. An iron-work has been erected at Sanchie.

CROMARTY-SHIRE.—Little can be said of the mineralogy of this very small county. Granite and freestones are common, and other rocks connected with these. Near Cromarty is a remarkable cave, called Farquhar's bed, and on the coast is another, whose roof and sides are covered with petrifactions.

DUNBARTON-SHIRE.—Granite, micaceous schistus and whin are abundant in different places: granite in Ben Lomond; slate in Camstradden, where are quarries from which 800,000 slates have been extracted in a year, and exported free; coal and lime are dug together at Longfaulds, in East Kilpatrick parish, four miles to the northwest of Glasgow; Longfauld's lime, as well as that of Netherwood and Cumbernauld, is considered excellent; ironstone is abundant at Garsabe, Kirkintilloch, Cumbernauld, Kilsyth, whence it is shipped by canal to Carron works; freestone is found at Garsabe, Dunbarton, Moor, Cumbernauld, Kirk, etc. All the houses from Bonhill to Drymenwood, and west for many miles from Drymen, are built of red sandstone, which causes them to present a very peculiar appearance. A schistus impregnated with alum is found in the Campsie hills, and is wrought; it is said to be met with in Cumbernauld parish, but is not wrought. The rock of Dunbarton is basaltic, hard, magnetic, fine-grained, with a tendency to the prismatic form, and contains in some places rose-colored spar and charred wood, which is rarely met with in basalt. Friskyhall, 3½ miles west of Dunbarton, on the Glasgow road, presents us with prehnite, forming a constituent part of a rock, disproving the Abbe Hauy's opinion, that it never does so. The Kilpatrick hills are well known. They contain kyolite, crosstone, foliated zeolite, and at Friskyhall cubicite, wavellite and laumonite. Rhomboidal spar occurs in the chlorite slate on the banks of Loch Lomond, iron-flint in the trap-rocks around Dunbarton.

DUMFRIES-SHIRE.—There have not been discovered any traces of primitive or volcanic rocks. The transition rocks are grauwacke and greenstone, being strata of the independent coal formation occurring at Closeburn, Sanquhar, Whitehill, Cannobie, and other places from the Nith to the Esk, floetz trap, porphyry, greenstone and amijgdaloid from the bridge of Langholm to Demby, freestone occurs in Darnock, Durrisdor, Middeby, Moffat, Sangquhar, etc. Red sandstone is abundant under Dumfries-town, limestone at Closeburn, Renpont and Sangquhar. Moffat is noted for its Hartfell spa; and Wanlock head for its lead mines, where lead to the value of £30,000 is annually worked; here occur several ores of lead, copper, nickel, foliated brown spar and most of the minerals found at Leadhills, in Lanarkshire. Lead ore is also found at West Quarter, in Langholm and Broomholm, on the Esk; in veins of transition rocks at Glendinning are found radiated grey antimony ore, granular brown blende, iron pyrites, quartz and calcareous spar, chalcedony and compact felspar are also found here. Gypsum is met with at Moffat, and it is one of the few places in which alum occurs, incrusting alum slate. Gold has been found in the county, and marl is abundant. Coal is worked in Cannobie, Kirkconnel and Sangquhar.

EDINBURGH-SHIRE.—The rocks around Edinburgh have been much admired, and often examined. Arthur's Seat consists of the newest floetz trap formation, trap, tuffer, porphyry slate, basalt, sandstone and greenstone prevail, while the simple minerals are jasper prehnite, natrolite, hornblende, augite and olivine. Salesburg Craigs consist of sandstone with subordinate beds of greenstone. Layers of sandstone, slate-clay, clay and iron-stone are found there, with prehnite, cubicite, calcareous spar, steatite, hematite and zeolite. The Calton hill contains a bed of porphyry or felspar rock, trap, tuffa, slate-clay, bituminous shale and sandstone. The porphyry is traversed by veins of calcareous spar, in which occur chalcedony, agate, celestine, glance coal, red jasper and iron pyrits. In the sandstone occur felspar, red jasper, flinty slate, agate, Lydian stone and cubicite; cyanite is occasionally found in the porphyry. The Castle hill consists of trap. In Inch Keith, we meet with basaltic columns, calcareous spar, jasper, agate and flint. In the counties of Mid-Lothian or Edinburgh, sandstone, limestone, coal and trap abound in almost every parish. The seam of coal runs from northeast to southwest, being 15 miles long and 8 miles broad. The Pentland hills consist of sandstone and secondary trap rocks in which occur compact felspar, Lydian stone and common striped jasper. Porphyry occurs with heavy spar, etc., in the Braid hills, greenstone at Cramond, and Carsturphine, and a copper mine was opened in 1734 at Lumphoy, in Leith water; marl and excellent clay are found at Duddington. Here the bed of coal is 11 feet thick. Petroleum has been found oozing from the rocks at St. Catherine's well.

TO BE CONTINUED.

[WRITTEN FOR THE JOURNAL OF MINING.]

THE ELECTRO-POSITIVE METALS—No. 4.

POTASSIUM—ITS PROPERTIES.

By JOSEPH HIRSH, Ph. Dr.

Potassium in its physical properties stands intermediate between mercury and the hard metals. At the freezing point it is brittle, of a crystalline fracture. The crystals of this metal belong to the regular system, being frequently found as cubes in the condensors of retorts. At about 50° F. it is ductile, and bright, like polished silver; at 60° F. it becomes semi-liquid, pasty, growing thinner on being heated to 100° F., while its melting point according to Bunsen lies at 144.5°.; at this temperature it melts at once, without acquiring the intermediate, pasty condition of lower temperatures. In this melted state drops of the metal unite into larger ones, like mercury. At a little below the red-heat it boils, its vapors possessing an exceedingly bright and beautiful green color. A lower temperature condenses those vapors again into metallic drops. At the common temperature it remains metallic in oxygen, as well as in atmospheric air, when those gasses are entirely free from carbonic acid and aqueous vapors, but exposed to the air, charged with water and carbonic acid, it gradually oxidises. If heated in the air to its boiling point the metal ignites and burns with great vehemence. It may also be ignited by the electric spark. Of all the known bodies it possesses the greatest affinity for oxygen, and therefore reduces all known oxidized bodies at an elevated temperature, while it is not easily preserved in its metallic state for any considerable length of time. When heated it ignites in all gasses containing oxygen, as carbonic oxide, carbonic acid, nitrous oxyd, nitric oxyd, etc., as also in sulphuretted or phosphuretted hydrogen, in muriatic acid gas, etc. In contact with water, potassium ignites, and burns vehemently with a reddish purple flame. Thrown into water it will traverse its surface as a red ball of fire, leaving behind a bright bead of caustic potash, which finally disappears with a slight explosion. If the quantity of metal used in this experiment exceeds a few grains, the heat generated by the oxidation of the metal will be so enormous as to throw the burning metal about, filling the air with irritating particles of caustic potash. The heat generated in this experiment is partly due to the oxidation of the metals and partly to the affinity of the oxidized metal for water. This combustion becomes still more vehement and the heat generated increased, if the water be replaced by sulphuric acid. If this experiment is conducted in a glass or porcelain vessel, the latter will even melt. In this, as in the former experiment, great care has to be taken, as the slightest explosion, although of itself not dangerous, may be of serious consequence by throwing fine particles of caustic lye about, which may injure the eyes and clothes. The best safeguard therefore is a glass bell, which may be plunged over the head of potash the moment its combustion is complete. If thrown upon ice, the potassium also ignites, and is driven forth and back upon its surface by the steam generated, as in the case of water. When placed upon moist paper covered with rhubarb or curcuma, the zigzag path of the fiery ball may afterwards be traced by the discoloration of the paper. If potassium is thrown upon mercury, the surface of which is moist, the moist coating of the metal will immediately recede, while the mercury becomes clean and bright all around the potassium. The latter is carried all over the surface of the mercury in a rotary motion, consuming the moisture and changing into hydrate of potash without ignition. With the decrease of the potassium ball the covering recedes again, so that finally the metal ball rotates within but a small circle of clean mercury, which also is coated instantly when the last portion of potassium disappears. The coating in this case consists of hydrate of potash, dissolved in water which it has attracted from the air. The motion of the potassium seems to be caused by an oxidation through the moisture by a development of hydrogen, and seems to be of the same nature as the motion of camphor upon water. This motion of the potassium takes place in all moist gasses, even in those containing no oxygen, while even in air or oxygen when entirely dry no such motion takes place. When heated in hydrogen gas the latter diminishes in volume, acquiring at the same time the property of igniting in the air. On cooling, the potassium condenses, and the hydrogen has lost again its property of igniting spontaneously in the air. When heated for some time in hydrogen, the potassium becomes changed into a grey powder, which, mixed with mercury, forms a potassium amalgam under development of hydrogen gas. The same powder thrown into water develops one-quarter more hydrogen than potassium, not heated in hydrogen gas.

[TO BE CONTINUED.]

MARKET REVIEW.

FRIDAY EVENING.

Gold and Silver Stocks.—The fall in gold has had a marked effect upon stocks this week. We quote as follows: Albin has been quiet at last week's figure; Alpine sold on Monday for $1.10 @$1.14 and has fluctuated between these figures during the week; American Flag has been active, selling on Tuesday at $2.25, but during the latter part of the week it steadily declined, and at closing to-day sold at $1.75@$1.80; Atlantic & Pacific quoted last week at $3, has been held at $5 during the week, but to-day was offered at $4.50; Bates & Baxter is held at $2.90 against $3 last week, $2.25 was offered yesterday; Benton closed at $1.10 bid, against $1.35 asked, selling after call to-day at $1.25; Bobtail has declined from $4.00 to $2.40 closing price to-day; Boscobel Silver $1.00; Bullion Consolidated has been inactive, being held at $5.00; Burroughs gold sold at 40c yesterday, but declined to 36c to-day; Church Union Gold $2.50@$2.80; Crozier Gold has declined to 25c bid to-day against sale at 45c last Monday; Consolidated Colorado is inactive at 5c; Consolidated Gregory has declined to $8.25 selling to-day at that figure; Corydon $2.60@$3.00 with sales; Central, after call, $1.75; Downieville sold for 22c on Monday, but closed to-day at 15c; there has been no transaction in Eagle Gold which was held at 70c at the beginning of the week; Echla Gold of Colorado is held at $3.15, First National $4.15; Fall River 75c; Gilpin has declined to $1.25 against $2.75 last week's quotation; Gunnell has declined to 75c, selling to-day at that figure; Hiawatha offered at 30c; Holman was sold to-day at 25c, a slight advance of last week's quotation; Hope Gold held at $1 last week is offered at 90c to-day, 55c bid; Keystone Silver sold at 8c; LaCrosse Gold touched $1.00 yesterday, but was held to-day at $1.15, with sales at $1.10, against $1.00 last week; Kipp & Buell 86c; Lehig 50c, $1 asked; Liberty Gold held at 25c; Montana 20c; New York continues to decline, being offered to-day at $1.25; Nye Gold 11c; Oak Hill 90c; Ophir $1.00; Queen Silver $43.50@$44.75; Quartz Hill Gold has been active, selling at $5@5.15 on Wednesday, but has fallen since then, selling to-day after call at $3.05@$3.10; Rocky Mountain has declined to $2 50; Smith & Parmelee Gold touched $7 to-day, with sales at that figure, but was firmer after call, selling at $7 25 @7 35; Texas Gold was held yesterday at 25c., with bids at 15c., a considerable advance from last week's quotations; Vanderburg, 77c.

Copper Stocks are quoted as follows: Caledonia is held at $15; Canada, 80c.; Central, $49; Davidson has declined, being held at $1 60 at closing, against $1 40 on Monday; Evergreen Bluff has declined to $12 50; $1 is offered for Hilton; Mendota is held at $1.

Lead Stocks.—Tudor sold for $2 65 after call to-day; Wallkill has declined, selling to-day at $1 65, against $1 75, last Friday's quotations.

Miscellaneous Stocks.—Colorado Gold and Silver Ore Separating Co., held at $1 25 last week, has declined to $1; Petroleum Iron Tank Storage Co. held at $60; Wallace Nickel has advanced to $3 15.

Petroleum Stocks are quoted as follows:

	Offered.	Asked.
Bemschoff Run	$4 35	$4 50
Buchanan Farm	16	....
Central	1 60	2 00
Excelsior	....	30
Forest Co. Petroleum Co.	....	2
Manhattan	....	25
N. Y. and Allegheny	4 85	....
New York and Newark	....	12
Rynd Farm	....	30
United States	4 00	4 35

Coal Stocks show a decline from last week's quotations.

	Offered.	Asked.
Cumberland Coal, from	..	65
American Coal	..	..
Wilkesbarre Coal and Mining	..	..
Spring Mountain	..	..

Government Stocks have declined.

	Offered.	Asked.
U. S. 6's, '81	..	112
5.20's, '62	105	..
5.20's, '65, new issue	107¾	..
10.40's, reg'l	99½	99⅝
7.30's, 1st series	105¼	..
7.30's, 2d series	..	104

Foreign Exchange continues dull. Rates are as follows: London, 60 days, 108¾@108⅞; do. at sight, 109½; do. commercial, 107½@108¼; Paris, long, 4.18⅞@5.17½; do. short, 5.14; Antwerp, 5.20; Swiss, 5.20; Hamburg, 36⅛@36¼; Frankfort, 41 @41¼; Amsterdam, 41@41½; Bremen, 78¾@79.

Gold was 138¼ at 3.30 P. M., with a downward tendency.

Copper.—Ingots continue depressed. Prices have become unsettled on account of the fall of Gold, and have given way 1@1½c. per lb. At the decline business was quite active. We notice the sale of 1200 tons California Ore, to arrive, at 5 per unit.

Iron.—Pig is quiet. Prices are firm, notwithstanding the declining tendency of Gold.

Steel without change. It is expected prices will be reduced to meet the Gold market.

Tin—Straits: Pig is held rather more firmly, with little demand. Plates are very quiet. Accounts from Liverpool state that a little reduction in prices has been made.

Lead.—Pig has been very quiet. We have only to notice small sales of Foreign on a basis of 6¾c gold for ordinary; Bar, 10¾; and Sheet and Pipe, 11¾c., cash.

Spelter is dull; 25 tons Silesian sold at 6 cents gold, and 15 do. 8½ currency.

Petroleum—The market is dull and heavy. We quote: Crude, 40@47 in bulk, 15@15½c; do. in barrels, 22c; refined, 110 deg. test, light straw, 31c.; do. light straw to white, 32c.; do. prime light straw, 33@33½c.; do. standard white, 34@34½c.; prime white, 35½c.

Received at New York since 1st January—

1866	bbls. 959,619	1865	bbls. 518,253

Exported same time—	1866.	1865.
From New York	galls. 31,002,623	11,880,536
Other Ports	27,674,179	10,599,886
Total	galls. 58,676,802	22,480,482
Same time, 1864		galls. 29,306,980
" " 1863		24,725,299

Total Exports from New York since Jan. 1, 1866, galls. 31,002,623
Total Export from the U. States, 58,676,802 22,480,482
Same time 1864 29,306,980
Same time 1863 24,725,299

Gunpowder—Blasting (A), per keg of 25 lbs., $5: Mining, $5 50; Rifle, $7.50.

THE COAL TRADE.

FRIDAY EVENING, Nov. 23, 1866.

Wholesale.—Trade is very quiet pending the sale of Scranton coal, which is to take place on Tuesday next. There is a great deal more coal on hand than there is any call for, and prices are but nominal. There are many queries as to the course prices will take at the coming sale, but no doubt they will rule lower than our present quotations. The Schuylkill and Lehigh regions continue to send quantities of coal to the market, notwithstanding we have more than we can take care of, owing to their unwise manner of conducting mining operations—the workman being constantly in debt to the operator, which necessitates the continual taking out of coal. In other mining regions of the country good workmanship and behavior are the requirements to enable the laborer to hold his situation. It should be the same everywhere.

Retail.—Trade has been favorable, and dealers are somewhat encouraged. Buyers purchase all in small lots evidently anticipating a further decline. There is some demand for foreign. Prices range from $7.50 to $8.50 for the various qualities of American, and Liverpool from $20 to $22.

Foreign.—We quote sales of 100 tons Liverpool Orrell at $14.00; 75 tons do. $14.25; 156 tons English Gas Cannel $15 50; 80 tons English House Cannel $17.50 all ex ship. By the last steamship from Sydney to Panama we learn that coal freights to San Francisco were 23s, and from Newcastle 20s ₱ long ton. British Bark *Kedar* cleared from Newcastle for San Francisco, August 14th, with 794 tons coal.

The Lehigh Coal and Navigation Co. intend closing their canal on the fifth of December. The reason for closing thus early is that there are considerable repairs to be made this winter. The Delaware Division Canal will also be closed at the same time. We understand that there is to be a double lock at Smithtown in place of the two single ones now there, which are to be removed. There is also to be an addition to one of the locks at Black's Eddy.

The New Orleans *Times* speaks of the coal boat fleet from Pittsburg, now moored in that city. There are now at least one hundred and thirty coal boats, and as many boat loads of Pittsburg coal. The fleet extends along the river bank at least half a mile.

Reports of the Coal Traffic for the Last Week

as compared with those of the corresponding week last year, are as follows:

	1865.		1866.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	INC. & DEC.
Phil. & Reading R.R.	63,537	2,682,749	60,505	3,370,422	ƒ688,673
Schuylkill Canal	35,096	942,735	32,717	1,231,570	ƒ288,825
Lehigh Val. R. R.	58,071	1,345,927	34,377	1,670,992	ƒ325,065
Lehigh Canal	31,228	821,649	22,742	1,003,778	ƒ182,129
Del. & Hudson	28,340	661,447	29,375	1,220,019	ƒ558,572
Scranton North	10,462	211,197	9,775	383,408	ƒ172,211
Scranton South	21,415	416,416	23,172	951,879	ƒ335,463
Penn'a. Coal Co. Rail	15,981	458,669	18,172	426,782	*d* 21,887
by Canal	1,546	40,751	824	24,784	*d* 15,947
Wyoming North	.....	.....	.....	97,708	ƒ 97,708
Wyoming South	.....	304,744	4,724	438,062	ƒ133,318
Shamokin	16,157	408,149	17,077	489,062	ƒ 63,835
Trevorton	921	20,908	925	44,681	ƒ 23,773
Shen'o Mountain	3,448	66,850	3,870	86,6 0 0	ƒ 19,871
Franklin	2,403	54,926	.....	32,747	*d* 22,249
Broad Top	.....	281,948	4,550	243,3.6	*d* 38,552
	269,201	8,909,124	163,583	117208,0	.....
	.....	.....	.....	8909124	.....
Increase	.....	.....	.....	2811766	.....
Decrease	.....	.....	.....	.....	.....

Prices of Coal by the Cargo.

At New York, Nov. 23, 1866

Schuylkill Red Ash by Boat Load		$7 00@$7 50
"	Chestnut, " "	4 50 5 25
"	White Ash Lump	6 25 6 75
"	Steamboat	6 25 6 75
"	Broken	6 25 7 00
"	Egg	6 52 7 00
"	Stove	6 50 7 00
"	Chestnut	4 75 5 50
Lehigh White Ash Lump		6 50 7 00
"	Broken	6 50 ....

" Egg	6 25	....
" Stove	6 75	....
" Chestnut	5 50	....
Western Virginia Gas Coal	10 00	....
Westmoreland Gas Coal	10 00	..
Blossburg & Fall Creek	7 25	7 40

At Philadelphia, Nov. 23, 1866.

Schuylkill Red Ash Prepared	$5 50@	$6 00
" Chestnut	4 00	.. ..
" White Ash Lump and Steamboat	5 00	.. ..
" Broken	5 00	.. ..
" Egg and Stove	5 25	.. ..
" Chestnut	4 00	.. ..
Locust Mt. Lump, and Steamboat	5 25	.. ..
" Broken	5 25	.. ..
" Prepared	5 50	.. ..
" Chestnut	4 25	.. ..
Lorberry Coal	5 75	.. ..
Shamokin	5 75	.. ..
Franklin, (Lykens Valley)	6 25	.. ..
Broad Top	5 50	.. ..

Scranton Coal at Elizabethport.

Lump	$5 25@	— —
Steamer	5 75	— —
Grate	6 00	— —
Egg	6 00	— —
Stove	5 75	— —
Chestnut	4 75	— —

Prices for Pittston Coal at Newburgh.

Lump, per ton of 2240 lbs	$6 25	.. ..
Steamer, " " "	6 35	.. ..
Grate " " "	6 40	.. ..
Egg " " "	6 50	.. ..
Stove " " "	6 75	.. ..
Chestnut " " "	5 00	.. ..

70 cents per ton additional for delivery at N. York

Lehigh Coal at Elizabethport.

Lump	6 75@	$7 00
Steamboat and Broken	6 50	— —
Egg	6 50	— —
Chestnut	5 50	6 00
Stove	....	7 00

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point	$5 75@	.. ..
At Georgetown	5 50	.. ..

At Baltimore, Nov. 23, 1866.

Wilkesbarre & Pittston W. A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R. A., wholesale	7 50	7 75
" " " retail	8 50	8 75

Prices of Foreign Coals.

[REPORTED FOR THE JOURNAL OF MINING.]
BY H. L. PARMELE & BRO., 32 Pine street, N. Y.
Duty $1.25 per ton.

Liverpool Gas Caking	$10 75
" " Cannel	15 50
" House	18 00
" " Orrel	16 00

Per ton 2240 lbs.
PRICES FROM YARD:

Liverpool Orrell, screened	20 00
" Canuel, "	22 00

per ton 2000 lbs. delivered.

Prices of Provincial Coals.

[REPORTED FOR THE JOURNAL OF MINING.]
BY LOUIS J. BELLONI, JR., 43 Pine street, N. Y.
Duty $1.25 per ton.

Block House (on board)	$1 75 gold.
Gowuio	1 75 "
Liogan	1 75 "
Sidney	2 28 "
Pictou	2 25 "
Glace Bay	1 75 "
International Co.'s	1 75 "
Slack Coal	75 "

Coal Freights.

By Railroad.

Transportation from Schuylkill Haven to Pt. Richmond	$2 25
Freight from Pt. Richmond to New York	1 60
Total	$3 85

From Port Carbon 8 cents per ton more.

By Canal.

Toll from Schuylkill Haven to Philadelphia	$1 00
Freight from Schuylkill Haven to New York	2 00
Total	$3 67

Canal Expenses from Mauch Chunk to N. Y.

Lehigh Canal (net)	58
Delaware Division Canal	42
Delaware & Raritan Canal	50
Towage, New Brunswick to New York	25
Freight, Mauch Chunk to New York	$1 55
Total	$3 30

Freights on Coal to Elizabethport.

L. V. R. R. from Mauch Chunk to Easton	$1 15
C. R. R. of N. J., Easton to Elizabethport	1 70
	2 85
Shipping expenses at Elizabethport	25
Total	$3 10

Via Morris Canal.

Lehigh Canal	58
Morris "	90
Towage	12½
Freight	$1 80
Total	$3 40½

Expenses from Mauch Chunk to Jersey City for Reshipment.

Lehigh tolls (net)	— 58
Morris tolls	— 75
Freights	1 75
Reshipping	— 30
Total	$3 38

From Baltimore.

To Philadelphia	$1 75@	— —	Boston 3 25@ — —
New York	2 50	— —	
do by Canal	2 75	— —	

From Georgetown or Alexandria.

To Philadelphia	$2 50	— —	Boston 3 25 3 50
New York	2 25	2 50	

From Port Richmond, Philadelphia.

Reported by the Coal Exchange, Nov. 23.

Albany (& towing)	$1 70@	— —	Newburg	$1 68@	— —		
Alexandria	1 55	— —	Newburyport	2 40	— —		
Appanoug	2 00	— —	New Haven	2 00	— —		
Aspinwall	7 00	— —	New London	2 05	— —		
Bangor	2 00	— —	Newport	2 30	— —		
Bath	2 40	— —	Newport, R. I.	1 90	— —		
Baker's Landing	—	— —	New York	1 60	— —		
Bedford	—	— —	Norfolk	1 60	— —		
Boston	3 00	3 20	Norwalk	....	....	— —	
Bridgeport	1 80	— —	Norwich	2 20	— —		
Bristol	1 90	— —	Pawtucket, & tow'g	2 25	— —		
Cambridgeport	3 25	— —	Petersburg	2 00	— —		
Catskill (& tow)	2 00	— —	Portland	4 00	— —		
Charleston, S. C.	2 25	— —	Portsmouth, N. H.	2 50	— —		
Charlestown	2 10	— —	Providence	2 10	— —		
Chelsea	2 12	— —	Provincetown	1 90	— —		
Commercial Point	3 00	— —	Poughkeepsie, & t'g	1 60	— —		
Davenport'and dis.	3 25	— —	Port Chester	1 60	— —		
Delaware City	— 80	— —	Plymouth	2 25	— —		
Dighton	2 00	— —	Richmond	2 10	2 25		
East Greenwich	1 80	— —	Rockland	2 30	— —		
Fall River	2 32	— —	Roxbury	2 25	— —		
Fort Monroe	1 60	— —	smugus	2 50	— —		
Fredericksburg	2 25	— —	Sing sing	1 60	— —		
Georgetown	1 50	— —	St. Johns (in gold)	1 50	— —		
Gloucester	3 15	— —	Salem	3 20	— —		
Suntown and tow	....	....	Savannah, Ga	2 20	— —		
Lynn and dis	2 80	— —	Stonington	2 25	— —		
Milton	2 50	— —	Washington, D. C.	1 50	— —		
Malden	2 50	— —	Weymouth'g&qui'g	2 60	— —		
Mobile	5 10	— —	West Point & tow	1 70	— —		
Neponsett	0 00	— —	Wilmington	1 00	— —		
New Bedford	2 00	— —	Winterport	2 00	— —		

From Newburgh.

Albany	55@	.. ..	Norwalk	$1 35@	.. ..		
Barrytown	40	.. ..	Norwich	1 60	.. ..		
Boston	2 00	.. ..	Nyack	50	.. ..		
Bridgeport	1 35	.. ..	Pawtucket	1 75	.. ..		
Bristol	1 55	.. ..	Peekskill	40	.. ..		
Catskill	40	.. ..	Poughkeepsie	25	.. ..		
Cold Spring	30	.. ..	Providence	1 60	.. ..		
Coeymans	50	.. ..	Rhinebeck	30	.. ..		
Coxsackie	45	.. ..	Sangerties	40	.. ..		
Dighton	1 00	.. ..	Sing Sing	50	.. ..		
Fall River	1 55	.. ..	Stamford	1 55	.. ..		
Fishkill Landing	20	.. ..	Stonington	1 45	.. ..		
Greenbush	$ 55	.. ..	Stuyvesant	45	.. ..		
Haverstraw	45	.. ..	Tarrytown	50	.. ..		
Hudson	40	.. ..	Troy	60	.. ..		
Mystic	1 45	.. ..	Warren	1 60	.. ..		
New Haven	1 35	.. ..	West Point	30	.. ..		
New London	1 45	.. ..	West Troy	60	.. ..		
Newport	1 55	.. ..	Yonkers	55	.. ..		
New York	70	.. ..					

From Elizabethport.

Albany	$1 60@	— —	New London	1 30@	— —		
Boston	2 00	— —	Newport	1 50	— —		
Bridgeport	1 20	— —	New York	50	— —		
Fall River	1 50	— —	Norwalk	1 20	— —		
Hartford	1 75	— —	Norwich	1 35	— —		
Hudson	1 60	— —	Pawtucket	1 50	— —		
Lynn	—	— —	Portland	2 00	— —		
Middletown	1 50	— —	Portsmouth	2 00	— —		
New Bedford	1 50	— —	Providence	1 50	— —		
Newburyport	2 10	— —	Salem	2 00	— —		
New Haven	1 20	— —	Taunton	1 40	— —		

Foreign Freights.

Sydney to N. Y.	$4 50
Langan	4 00
Cow Bay	4 50
Glace Bay	4 50
Liverpool	128. 6d. to 15s.

Schuylkill Coal Trade by Railroad and Canal,

For the week ending Thursday, November 22, 1866:

	RAILROAD.	CANAL.
From St. Clair	21,631	.....
Port Carbon	6,468	9,105 00
Pottsville	74	183 00
Schuylkill Haven	20,126	21,475 00
Auburn	1,328	.....
Port Clinton	10,881	1,554 00
Total for week	60,505	32,717 00
Previously this year	3,310,917	1,198,853 09
Total this year	3,371,422	1,231,570,09
To same time last year	2,682,749	942,734 19
Increase	688,673	288,835 90

Little Schuylkill Coal Trade to Saturday, Nov. 17.

	Co.'s Mines. Tons.	Railroad. Tons.
From December 1st, 1865	125,494	246,604
Same time last year	88 500	201,723
Increase	36,993	44,881
East Mahanoy R. R.		354 611
Last year		266,238
Decrease		9,596
Increase on Railroads		35,2-5

Cumberland Coal Trade.

Statement of Coal shipments over the Baltimore and Ohio Railroad for the week ending Nov. 17th:

	Tons.
From Eckhart R. R.	
Blaen-Avon Company	260 15
Spruce Hill	265 08
Cumberland Coal and Iron Company	499 05
From Cumberland and Pa. R. R.	
Consolidation Company	1,201 00
Borden Mining do	756 09
American do	1,271 03
Clifton do	.....
	4,272 00
From George's Creek via. Piedmont.	Tons.
George's Creek Coal and Iron Company	2,154 01
Atlantic Company	604 19
Piedmont do	1,800 17
Swanton do	925 16
Central do	159 17
Barton do	1,120 04
Potomac do	601 14
George's Creek Mining Co.	1,453 01
Franklin do	2,248 19
Hampshire do	2,469 04
Savage Mountain Co.	10 02
Total	13,918 14

Gas Coal. From mines West of Piedmont	Tons. ....
Transportation since 1st of January.	Tons. Cwt.
From Companies by Eckhart R. R.	41,948 12
From do C. & P. R. R.	113,940 14
From do via. Piedmont	510,151 11
From West of Piedmont, Gas Coal	47,820 00
Total	719,860 17

By Canal

For the week ending with Saturday, Nov. 17th, and for the season:

Companies.	For Week. Boats.	Tons.	For Season. Tons.
Border Coal Co.	10	1,126 05	39,584 03
Consolidation Co.	20	2,202 16	13,883 10
American do	20	2,173 03	60,334 06
Central do	24	2,654 02	78,857 16
Cumb. C. & I. Co.	11	1,186 13	44,747 03
New Hope do	—	—	19,136 00
Hamp. & Balt. Co.	10	1,107 14	31,491 18
Miscellaneous	11	1,314 10	23,600 13
Total	106	11,765 08	310,435 09

Lehigh Coal Trade, for Week Ending Saturday, November 17.

OPERATORS.	RAILROADS. Week.	Total.	CANAL. Week.	Total.
Ashburton Coal Company	....	757	....	103
Audenried	229	14,961	259	12,604
Baltimore Coal Company	746	33,287	283	11,830
Buck Mountain	1,186	53,936	364	22,666
Central Coal Company	....	....	....	....
Coleraine	1,229	32,720	361	22,860
Council Ridge	1,401	88,598	....	....
Coxe Bro. & Co.	397	16,805	380	5,890
Connery, John	104	3,721	....	....
Coal Run Coal Company	....	155	....	....
Delano	914	26,801	....	5,305
East Sugar Loaf	4,548	177,541	....	....
Ebervale Coal Company	7,367	53,357	792	24,896
Franklin Coal Company	664	18,727	588	11,616
Ger Pa Coal Company	671	44,258	132	24,803
Glendon Coal Company	20	23,126	692	6,120
Germania Company	76	8,703	259	9,858
Hazleton	4,450	199,477	1,952	73,698
Harleigh	688	46,772	614	15,874
Highland Coal Company	....	....	....	....
Honey Brook Coal Company	2,062	120,628	952	29,482
Hull & Co., Thomas	....	....	294	13,149
Jeddo (G. B. M. & Co.)	2,870	151,115	1,288	52,998
Knickerbocker	828	23,328	98	9,571
Loubach, J. & Co	....	....	....	1,287
Lehigh Zinc Company	....	7,464	....	....
Lehigh & Susquehannah	....	16,031	....	15,555
Lehigh Coal & Navigation Co.	....	....	8,149	378,047
Mahanoy	....	10,935	....	....
Mount Pleasant	272	19,936	....	5,761
Meadow, B. (D. W.)	36	2,077	....	....
McNeal Company	1,112	53,164	354	29,842
Meyers, H.	105	8,687	....	....
Mount Etna Coal Company	....	....	....	4,327
New Boston C. Co.	....	5	....	....
New Port C. Co.	125	901	189	1,048
New York & Lehigh	1,680	65,330	....	....
New Jersey	121	5,035	....	5,301
North Mahanoy	....	....	....	8,415
Parker, Skeer & Co.	....	....	934	80,441
Patterson, W. T.	....	....	....	....
Parish & Thomas	287	19,823	....	405
Primrose Coal	....	....	191	862
Rathburn, Stearns & Co.	403	36,200	....	....
Reber, J. B. & Co.	69	6,853	....	....
Sharpe, Weiss & Co.	....	....	722	28,371
Stout Coal Company	948	43,350	202	16,825
Spring Mountain	2,419	130,229	357	6,138
Silliman	852	43,559	....	....
Shamokin Coal Company	....	2,202	....	....
Thomas Coal Co.	....	....	477	2,377
Trenton Coal Company	....	258	....	379
Union	115	1,174	132	3,280
Wilkesbarre	460	54,545	923	42,353
Woodside Company	....	....	....	....
Warrior Run	55	6,739	....	6,310
Wyoming	315	3,397	....	1,358
Walter Bro. & Co.	....	....	....	12,755
Other shippers	358	11,900	627	11,432
Total	34,377	1,670,992	22,742	1,003,778
Corresponding week last year	38,070	1,345,927	31,227	821,649
Increase	....	325,064	....	182,129
Decrease	3,693		8,485	

WEEKLY COAL TRADE CIRCULAR.

NEW YORK, Nov. 23, 1866.

The coal trade remains without any change. The demand is extremely quiet, and prices are, if anything, somewhat lower than last week's quotations. The Scranton Company announce an auction sale of 40,000 tons, to take place on Tuesday next (Nov. 27th). The canals are announced to close early in December; the Lehigh canal on Dec. 1st., and the others will rapidly follow suit. Most of the collieries in the Schuylkill region will close for the season Nov. 28th—the day before Thanksgiving—go into winter quarters, and remain quiet no doubt till a more auspicious day dawns upon the coal trade.

L. A. & Co.

FOREIGN MARKET REVIEW.

Weekly Metal Report.

LONDON, E. C., Nov. 24, 1866.

There has been rather more animation in the metal market since our last report, and slight signs of an improvement are beginning to show themselves.

IRON.—Accounts from Wales and Staffordshire do not report any actual improvements; prices, however, are maintained. Scotch pig iron has declined to 53s. 6d. cash.

COPPER.—Important transactions have taken place during the last few days both in Foreign and English. Prices have been kept secret. The nearest value for Burra at £86; Wallaroo, £86; Chili Slab, £76, to Liverpool.

TIN is, if anything, firmer; there are buyers of Straits at £78 10s.; and Banca has changed hands at £80 10s. English is dull. The Dutch market is firm at 46¾.

TIN PLATES not quite so brisk.

LEAD maintains previous quotations.

SPELTER.—The excitement reported last week has somewhat subsided, and operators are not quite so eager to get into stock. Some transactions have taken place at £21 to £21 5s. spot, and

at £21 10s. December, and $21 12s. 6d. January. Special brands in outports are held at £21 15s.

VON DADELSZEN & NORTH.

Oil Trade Circular.

LONDON, Nov. 24, 1866.

There is no change to report this week, and quotations remain as under :

REFINED PETROLEUM.—Liverpool and London, 1s. 9d. per gallon.
CRUDE.—£16 per ton.
REFINED COAL OIL.—1s. 6d. to 1s. 9d. per gallon.
ONCE RUN.—£11 to £11 5s. per ton, in London.
CRUDE.—£7 to £8 per ton.
SPIRIT.—10d. to 1s. 3d. per gallon.
LUBRICATING OIL.—£12 to £20 per ton.
GREASE.—£8 to £16 per ton.
PARAFFIN WAX.—6d. to 1s. per lb.
DITTO SCALES.—2d. to 4½d. per lb.

The deliveries last week were about 1,500 barrels more than arrivals.

STRANGE BROTHERS & CO.

BOSTON STOCK MARKET.

BOSTON, November 22, 1866.

The market for petroleum, mining and miscellaneous stocks, is weak with very few transactions. Crescent Petroleum shows activity at low figures ; Mass. and Oil Creek Pet. is being bought up quietly at 12@15c. on the expectation of a rise. New England Pet. inactive at 8c ; Pepper Well Pet. is held firmly at $1 ; Harlequ Coal is in demand at $50 ; Lackawana Coal offered at $6 25 ; $23 is freely bid for Mount Pleasant Coal. Running Brook firm at $50 ; Short Mountain is selling at $15 weak, and Summit Branch Railroad (coal) at $9. Gold stocks are very quiet. The principle business is still in Montezuma Gold, which has sold down to $1 50, at which price there are more purchasers than sellers; Caledonia Gold has been sold up to 25c. Tudor Lead, after selling down to $2 55, has taken an upward turn and $2 75 is today bid for it. In miscellaneous stocks there has been considerable movement. Automatic Gas Machine has sold down to $1 15; not many days since it could not have been bought under $10. Franklin Telegraph, $7 25 bid without bringing out any of the stock at that figure. Insulated Lines Telegraph has sold at $13 25, and is looked upon as a good investment at that figure.

THOS. C. LOMBARD & CO., 39 state street, Boston.

SAN FRANCISCO STOCK MARKET.

Latest by Telegraph.

SAN FRANCISCO, NOV. 17.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	50¢	Crown Point	90¢
Savage	1650	Yellow Jacket	85
Chollar-Potosi	200	Belcher	110
Ophir	175	Alpha	
Halo and Norcross	1800	Imperial per share	125
Cal. Steam Navigation Co.	66	Cal. State Telegraph Co	65

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

COPPER—Detroit, ₹ lb., cash	28		
Portage Lake	27		
Baltimore	27		
Pig Chili			
Bolts	43		45
Braziers	43		
Sheathing	43		
Yellow metal	32		
IRON—Pig.....No. 1 Scotch, ₹ ton	53 00		55 00
No. 1 American	50 00		51 00
No. 2 "	47 00		
No. 2 Charcoal	43 00		44 00
Bar.....Swedish, assorted sizes			170 00
Amer. and Eng refined			117 50
" " common			107 50
Rails, American at Works	85 00		90 00
" English (Gold)	55 00		
Horse shoe iron	142 50		152 50
Rods 5-8@3-16	122 50		177 50
Band	147 50		
Nail rods	10		
Hoops	152 50		217 50
Sheets, Russian, ₹ lb	23		24
" English "	6¾		8
" American "			
Boiler Plates, English			
" American			
STEEL.....English, cast, (2d & 1st q) ₹ lb	18½		24
" Spring, " "	11½		13
" Blister, " "	12½		20
" Machinery, " "	14		16
" German, (2d & 1st q)	15½		17½
American Blister, Blk Dim'd	17½		17
" Cast, Tool, "	13		
" Spring, "	12		15
" Machinery, "	15		
" American German,	13		14
LEAD.....American			
German (Gold)	6 75		7 00
Spanish "	6 75		
English "	6 75		7 12½
Bar	10 75		
Pipe and sheet	11 25		
TIN.....Banca, gold	23		23¼
Straits	21		21¼
English	21½		
TIN PLATES.....IC charcoal, ₹ box (Gold)	9 50		10 25
IC Coke, "	7 00		9 25
Charcoal Terne, "	9 50		10 25
Coke Terne, "	7 25		
QUICKSILVER			90
SPELTER.....Lehigh, per lb., currency	11		11½
Foreign " gold	6		6¾
ZINC.....Mussulman & Amer	13		14
SOLDER.....No. 1	24		
No. 2	22		

SPECIAL NOTICES.

☞ We are requested to state that a gentleman has deposited with the Institute of Reward for Orphans of Patriots, $500 to be paid for the best Essay on Physiology and Hygiene, under certain conditions, which persons can learn by addressing the President, Dr. Horace Webster, 49 Bible House, New York.

☞ Especial attention is directed to the mineral paint, lubricentive steam engine packing, railway and telegraph supplies of L. G. Tillotson & Co., mentioned more at length in our advertising columns.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued, from the United States Patent Office :

59,599.—COATED SHEET-METAL.—George H. Hazleton, Philadelphia, Pa. :

I claim the use and manufacture of sheet copper coated substantially as herein set forth and described.

59,644.—MANUFACTURE OF BARS AND ARTICLES OF IRON AND STEEL COMBINED.—William W. Pickslay, Philadelphia, Pa. :

I claim the manufacture of bars and other articles of iron and steel, combined, by applying the steel in a molten state to the iron, while the latter is at a welding heat, and subsequently rolling or otherwise working the combined mass.

59,676.—ORE-CRUSHER.—Charles W. Stafford, Saybrook, Conn. :

I claim the reciprocating jaw, D, guided in a rectilinear path by the plate, a, and actuated by eccentric, G, and lever, B, B', substantially as and for the purpose herein specified.

59,684.—VENTING CORES FOR FOUNDRY PURPOSES.—Hiram Tucker, Newtown, Mass., assignor to the Tucker Manufacturing Co. :

I claim the described improvement in the art of casting molten metals, by which the cores are better and more easily vented than heretofore.

59,693.—PROCESS OF TREATING SULPHUROUS ORES OF COPPER.—J. D. Whelpley and J. D. Storer, Boston, Mass. :

I claim, 1st. The seven manipulations above set forth, in their order and with the variations described, as a process for treating sulphurets of copper.

2d. The first, second, third, and sixth manipulations and the variations described, as a process for treating sulphurous ores of copper.

3d. The first six manipulations and the variations described, as a process for treating copper sulphurets.

4th. The first, second, third, fifth and sixth manipulations and the variations thereof, caused by omitting the third and sixth, and employing the method described after "seventh," as a process for treating copper sulphurets.

5th. The re-arrangements of the equivalents of the ore by the heat generated by its own combustion in presence of oxygen, and without other fuel than that contained in itself, substantially as described.

6th. The employment for the lixiviation of minerals of the centrifugal drying machine as described, and the arrangement of the felt lining upon its interior, substantially as described.

7th. The revival of iron from iron oxides by diffusion of gases between carbon and the oxides at a low degree of heat, and without currents of air, substantially as described.

59,694.—METHOD OF TREATING THE MIXED SULPHURETS OF ZINC AND LEAD.—J. D. Whelpley and J. J. Storer, Boston, Mass. :

We claim, 1st. The first, third, and fourth manipulations in their order, as a means or method of treating zinc blende.

2d. The first, third, and fourth manipulations in their order, with the addition of the second, as a method or means of treating associated blende and galena.

59,695.—APPARATUS FOR FEEDING FUEL TO FURNACES.—J. D. Whelpley and J. J. Storer, Boston, Mass. :

We claim, 1st. The construction of a machine containing a commuting apparatus for fibrous fuel, substantially as described in combination with the fan-blower of an air-blast, as and for the purpose described.

2d. The arrangement of cutting-blades, O, and air wheel-paddles, P, upon one or more revolving disks, L, in the cutting chamber, substantially as described, and the same in combination with crushing cylinder, N, substantially as described and for the purpose stated.

3d. The combination of a register, F, F', with the air or fuel-feed of the fan-blower, as and for the purpose described.

59,696. — PROCESS AND MACHINERY FOR OBTAINING METALS AND OTHER PRODUCTS FROM ORES AND MINERALS.—J. D. Whelpley and J. J. Storer, Boston, Mass. :

We claim, 1st. The construction of the interior of the tower in the form of a hollow truncated cone, for the purpose of securing perfect combustion and the exposure of all the material, especially the fuel, to heat and oxygen.

2d. The construction of the head of the furnace dome and arched flues above the fire-boxes, forming groins at their springs substantially as described, for the purpose of forming a focus of combustion near the head of the furnace.

3d. The arrangement of the chimney, F, and telescopic slide, G, with its counterpoise and hanges as drawn, substantially as and for the purpose described.

4th. The arrangement of the feed apparatus so as to discharge the ore and coal to be supplied to the air-blast, on the side of the fan-blower, A, away from the furnace, as and for the purpose described.

5th. The division of the horizontal flue into chambers, substantially as described, to secure more perfectly the hot lixiviation of the ores and the similar division of the conductor, L, into chambers, n, as and for the purpose described.

6th. The arrangement and combination of the settling tank, U, with the water bottom and pool, by means of the water-exit and water-entrance ; and the further arrangement of the propeller or conveyer, M, in combination with said water bottom and pool, as and for the purpose described.

7th. The employment of a wetting-wheel, succeeded by a chemical wheel to remove dust and gases from air, when said wheels are sufficiently separated to allow the effect of the first to be complete, before the air to be purified comes under the action of the second, and the arrangement of the trap or valve in the intermediate conductor to balance the draft and projection of the two wheels.

8th. The arrangement of the inclined floor, h, of the spray-chamber, in combination with the overflow, a, settling tubs and their overflows, b, and c, and with the water-chamber of the spray-wheel, substantially as described.

9th. The employment of oxyd of copper or other reducible protoxyds fed into the head of the furnace, substantially as described and for the purpose stated.

10th. The means of brightening gold, herein described, by the employment of heat and instantaneous plunging into water or dilute acid.

11th. The evaporating apparatus, substantially as described, consisting of shallow tanks or vats, forming the bottom of an airflue, through which is drawn or forced an artifical current of air, when employed to evaporate a heated solution of sulphate of copper, which cools as the operation proceeds, in order to effect the crystallization of the salt to its greatest practical extent.

12th. As a manufacturing process, to effect from a solution of sulphate or chloride of copper or other soluble metal the precipitation of pure metal in quantity, as distinguished from assay, by the substitution of another metal, such as iron in the solution, the employment of heat and relative motion between the solution and the precipitating metal, and with or without auxiliary galvanic currents distinct from those of local action, substantially as described.

13th. The employment of heat and relative motion between the solution and the poles of a battery to accelerate the action of the galvanic current in electro-precipitation of metals, substantially as described.

Special Scientific Brevities.

☞ Tyndall has shown, by a remarkable series of experiments, not only that aqueous vapor absorbs the obscure heat rays of a solar radiation, but that the oxygen and nitrogen gases, which constitute the great mass of our atmosphere, exert but little or no action on them. Cooke, after a long-continued examination of the solar spectrum, concludes that a very large number of the fainter dark lines of the spectrum, hitherto known as air-lines, are due solely to the aqueous vapors of our air. The distribution of these aqueous lines, and the variation in them, marked by a remarkable increase with the increase of aqueous vapor in the atmosphere, point to the cause of the blue color of the sky. Cooke found that the aqueous lines were almost wholly confined to the more refrangible parts of the spectrum. As the aqueous vapor absorbs most powerfully the yellow and red rays of the spectrum, the blue color of the sky is the result. The color is, therefore, due to absorption, and not to repeated reflections from the surface drops of water, as physicists have supposed.

☞ At the last meeting of the members of the Royal Institution, Professor Frankland lectured on the source of muscular power, in which he advocated new views respecting the kind of food that supplies most vital energy. As heat is convertable into mechanical force, it was assumed that the kind of food which during its slow combustion in the body produces the most heat must also be capable of developing the greatest amount of muscular power. By this means it was determined that butter, oils cod liver oil in particular—cheese, arrowroot, flour, potatoes, and other substances abounding in carbon and hydrogen, produce more muscular energy than lean beef, mutton, and other nitrogenous food. Professor Frankland observed that animal food might be of importance in maintaining the muscular fibres and might contribute something toward the development of muscular power, but that its principal source was food composed of oleaginous substances, vegetables, or vegetable products.

☞ In preparing pure caustic alkalies, M. Graeger, having brought the alkaline carbonates to such a state of purity, that they only contain traces of chlorides, first treats them with carbonate of silver, and then boils them with lime from calcined marble. The lye is then filtered through a funnel, in the bottom of which are placed fragments of marble and powdered marble, first pouring distilled water through till it passes perfectly limpid.

☞ Owing to the excessive shaking experienced on the foot-plates of locomotives, it has been hitherto a matter of extreme difficulty to obtain engine chronometers which will keep correct time, but this difficulty, it is reported, has been surmounted by Mr. Lewis Hasluck, who has supplied the Metropolitan Railway company with a chronometer fixed to an engine, the fifteen days' trial of which has been most satisfactory.

☞ A man of science in his day, which was nearly two hundred years ago, wrote as follows, respecting lightning : "If lightning kills a man in his sleep, he dyes with his eyes opened. The reason is because it just wakes him and kills him before he can shut them again. If it kills one, waking, his eyes will be found to be shut, because it so amazeth him that he winketh, and dies before he can open his eyes again."

☞ It appears that the iron turret-ship "Huascar," before leaving England, was coated on her bottom with Messrs. Peacock & Buchan's last improved composition. We understand that the composition has given such entire satisfaction that the Chilian Government have just ordered five tons of the same material to be sent out to the arsenal at Valparaiso for the use of their iron fleet in the Pacific.

☞ A soap bubble may be blown so thin that it takes 2,500,000 layers to form the thickness of an inch.

Mineral and other On-dits.

☞ The working of copper mines in California has now attained such a development that it promises even to surpass in importance those of mercury, and justifies the prediction that it will one day become the largest copper-producing country in the whole world. The Californian copper mines are rich and numerous. Ores containing 2 per cent. can be profitably smelted, it is believed, at Swansea. The California mines gives easily 10 per cent., and have already produced thousands of tons giving 20 per cent. Enormous profits might be realized if the price of transport to San Francisco from the mines of Tulare, of Siskiyou, of Plumas, and of San Bernardino, permitted the exportation of the ore. Fifteen companies, from San Diego to Del Norte, possess veins of copper which will give at least 10 per cent., but while the means of transport remains so costly only the mines nearest to San Francisco can be profitable at the present time. Amongst these the Union Mine, at Copperopolis, exported 110 tons of ore per day, of which 50 tons contained 20 per cent. of metal ; but a very large portion of this is absorbed in the cost of carriage of the ore to San Francisco. To obviate this cost attempts have been made for some time past to smelt the ore on the spot. The German system of smelting is generally employed in California. By this means cakes containing from 90 to 95 per cent. are obtained. It will soon be found as common as bars of gold or silver in the market of San Francisco. The ores found at present are carbonates and oxides.

☞ The Lawrence *Tribune* states, on the authority of a gentleman who was of a party that visited the salt region, that it completely covers the ground, forming a crust, and can be shoveled up by car-loads. The salt is of the purest character, and is fit for use as taken from the ground. When cleaned from the surface, leaving the earth bare, it appears again immediately, and in a day or two a hard crust is formed of the saline deposits in the soil. This salt exists in similar abundance over a country 60 miles in extent.

☞ The development arrived at respecting the salt mines of Nevada are almost startling in amount. A single bed there is computed to cover fifty thousand acres. It is solid rock salt, ninety-five per cent. fine. It now yields at the rate of two millions of bushels per annum. The water rushes up from a distance of thirty-five feet, and makes a constant deposit of the finest white salt. It is proposed to sink shafts at various points, in hopes of striking some spot where water will not be touched, and where the salt can be quarried, as in Hungary and Poland.

☞ A contemporary estimates the total present daily product of oil in all the producing regions of North America

at 16,869 barrels. The average price at the wells is $3 per barrel. The present daily production is worth then $50,007. From trustworthy statistics at hand we find that, on the 1st of November, last year, the whole daily yield of oil in all the producing districts, was 15,145 barrels; average price, per barrel, $5; total value, $75,725.

☞ Nitro-glycerine is now being used to great advantage, and perfect safety, in blasting sandstone quarries in the Vosges, France. The explosive compound is made on the spot. With a very small quantity of the nitro-glycerine from 40 to 80 cubic metres of hard rock are displaced at a time; no piece being projected to any distance, but the whole mass broken and rent in every direction.

☞ From the Savage mine during the week ending Sept. 1st, 1,011 tons of ore were extracted, 931 tons shipped to mills; leaving 626 tons on hand. The approximate value of the above 1,011 tons is estimated at $45,145, cost of extraction $8,736, and reduction $23,414; leaving an estimated profit $23,014. For the month of August the actual profits of the mine are stated to be about $100,000.

☞ A museum is about to be established in Carisbrook Castle in the Isle of Wight. It is to contain nothing but what illustrates the art, the antiquities, geology, botany, natural history, and history of the island.

All Sorts.

☞ The last novelty in the way of locomotion is to be among the many wonders of the Great Exhibition. According to the *Star*, it consists in a mechanical horse, which trots, gallops, or walks, as may suit the pleasure of the rider. He even prances after the most approved style, and neighs when that sound is agreeable to its possessor, and, still more wonderful to relate, can swim perfectly. This new mode of locomotion cannot be recommended on the score of cheapness, as it costs above 52,000 francs to construct.

☞ There are seven hundred and fifty paper mills in active operation in the United States. They produce two hundred and seventy million pounds of paper, which, at an average of ten cents per pound, would be worth $27,000,000. As it requires about a pound and one-half of rags to make one pound of paper, there are consumed by these mills four hundred million pounds in a single year, estimate the rags to cost four hundred cents per pound, there would be a profit of $11,000,000 in this branch of business.

☞ A literary announcement from Leipsic runs thus: "Our readers will be obliged to us for drawing their attention to some Sanscrit works which will shortly appear. We have not read the book ourselves, but, if their contents are as interesting as their titles, their perusal must be the acme of delight. The titles are: "Swapantschakschavimahamantrastotra," "Tragunatmikakalikastotra," "Upangalalitavratodyapana," and "Anantatscharaturdarivratakatha."

☞ It is said that the existing bargain between sleeping-car patentees and the railroads, is that the former shall furnish the cars and keep the upholstery and bedding in repairs, while the railroad company shall furnish the motive power and keep the cars in repair. The annual profit on each sleeping-car to the patentee is about $6,000. There are over three hundred of them constantly in use, and all are owned by one company.

☞ A French journal tells a little story about a lady, or rather she is made to tell it herself: "When I was first married I was on my knees before my husband from morning till night. I was a perpetual adoration. I showered caresses upon him; I could have eaten him."

"And now?" asked a friend.

"I'm sorry I did'nt."

☞ A woman's mission, as the world goes, is to make home happy; a man's to find the means wherewith she may do it. Woman's work should be, as woman was herself, the completion of all labor. From her must come those final touches and culminating graces which make a dinner of herbs a pleasant banquet, and a cottage starred over with jasmine a palace of contentment.

☞ French authorship pays rather handsomely. Theirs sold his two great historical works for $100,000 each. Dumas *pere* has earned by his pen $240,000, of which he has saved nothing. Madame Sand has taken an average of $10,000 for each of her 75 volumes, and $80,000 more for her plays—$830,000 in all—which will do for a woman.

More About the Mastodon.

A Troy correspondent of the *Herald* writes of the recently discovered Mastodon: As already stated, the remains were discovered in the pot holes during the progress of an excavation at Cohoes, near this city, for the foundation of a large factory. The attention of Professor James Hall, who is the occupant of the Chair of Natural History in the Rensselaer Polytechnic Institute in this city, and the State geologist, was first called to the existence of certain phenomena in connection with the remains on the 20th day of last Sept., by Mr. Younglove, the agent of the Harmony Mills Company at Cohoes, and which were found to repose in the shales of the so-called Hudson river group, where the excavation was being made, and where a series of pot holes, said to have been made by the ancient river, were visible from the first. The lower jaw-bone, with one bone of the foot, were found on the 27th of September, whereupon Judge A. S. Johnson, a regent of the University of the State of New York, and a member of the State Committee on Natural History, forthwith visited the pot holes. Professor Hall visited the spot on the 20th of September, in company with S. Woolworth, L.L.D., Secretary of the Board of Regents, who discovered the Beaver gnawings in the wooden logs and sticks taken from the work. At this juncture, Mr. John V. L. Pruyn, M.C., and Dr. Woolworth called upon the President of the Mills Company, and urgently requested that the mastodonic remains might be finally and permanently deposited in the Geological Museum of the State. While subsequent excavations were progressing, Professor Hall visited the scene several times, at one of which he saw that a line of excavation twenty-five feet deep was being made within the south wall for a series of pillars, the line of outdiggings being nearly across the centre of the deepest depression of pot hole. The excavation is filled with peaty matter and the ancient river ooze. Another one of these visits developed, according to previous prediction, the additional remains of the great skeleton, including an elaborate study of the position of the bones in the cavity, and the bringing to the surface of the bones, embracing the cranium and upper jaw, the tusks, fourteen of the ribs, many vertebræ, a part of the pelvis and one scapula. All these parts were lifted out and placed in the office of the company. Subsequent to all this, Professor Marsh, of Yale College, came upon the scene. Professor Hall, in an official paper referring to this subject, aptly says: "It was my duty, my pleasure to urge that the mastodon should be placed in the State Geological Museum at Albany. This institution is the result of a geological survey of the State, which, in its publications and its museum, has laid the foundation of geological science in America. It is an institution in which every citizen of the State should feel a pride, and to which every one should be glad to contribute whatever may tend to its increase for perfection. These collections are always open to the public, and they are seen and examined by many thousands of our own citizens and the citizens of other States every year. They are doing the work of quietly educating, if not to science, at least to an appreciation of scientific results in every department of natural science. The institution is one well deserving the favor and support of the State and of individuals; for, as a State institution, it must be regarded as having a permanency equal to that of any other department of the government, but at the same time it must often be indebted to individual enterprise or liberality. Certainly every one having a proper spirit of patriotism on State pride, would earnestly advocate the Geological Museum as the proper depository of the interesting remains found at Cohoes, and which have added another valuable and important chapter to the geological history of New York.

A Wonderful Cement for Iron.

On previous occasions we have described the remarkable preservative qualities of the Zopipe composition on stone and brick, and the extraordinary effects which the application of one part of the process has upon paper, converting it into a substance harder and more enduring than oak, and capable of being substituted for metals in many of the uses to which they are applied in the arts and manufactures. Following out the line of investigation into the chemical constituents of the substance which he employs, Colonel Szerlemey, the inventor, has now succeeded in producing some results, which, if they had not been shown under our inspection, we should have hesitated to believe possible. By combining various substances which may be readily obtained in large quantities, and at almost nominal prices, the ingenious inventor has made what he calls this, "iron cement," and truly it is an iron cement. It is a cement which, easily applied, becomes in a few minutes hard as iron, and, so far as we are aware, this is a quality which is not possessed by any other substance—that of complete and perfect cohesion to iron. At the factory at Battersea, we saw two large plates of iron held together so firmly as to defy all attempts at separating them. The plates had, in several parts, been fractured by the attempt to separate the two surfaces, but they still remain firm and immovable. Two plates of iron were cemented together in such a manner as that the lower one could have suspended to it the weight of several tons; the projecting corners of the lower plates to which the weights were attached were bent and curved, and the upper and lower plates had "buckled," but they still remained held together by the thin layer of iron cement as though they were but one plate. By the side of this, a plate has been made up of alternate thin sheets of iron and planks of timber, and the wood and the iron adhered as firmly as in the case when iron surfaces only were exposed to the action of the cement. A third test consisted of thin sheets of iron with alternate layers of paper, which had been previously coated with another kind of composition of M. De Szerlemey's. There the same wonderful cohesion existed. A sheet of glass was fixed to the edge of an iron by this extraordinary cement, and was as firmly held as the iron or wood or prepared paper of the previous experiments with iron and wood. Many other equally curious and startling experiments were shown, and among these, a novelty in the way of a house some forty feet in length, the sides, flooring and roofing of which were entirely of paper. The exhibition is certainly a most instructive one.—*London Exchange.*

The Mont Cenis Tunnel.

The Italian Minister of Public Works has received a report to the effect that one-half of the work of piercing Mont Cenis is completed. The tunnel, which will be twelve thousand two hundred and twenty metres (about seven and two thirds miles) in length, is already pierced six thousand one hundred and ten metres. The works are to be actively resumed, and there is reason to hope that the line may be opened in the course of next year. That will be the first direct communication between France and Italy. Paris and Florence will then only be separated by rail from thirty-six to forty hours.

MORE KIND WORDS.

From Ryland's Iron Trade Circular, Birmingham, England, Oct. 27, 1866.

The AMERICAN JOURNAL OF MINING is a journal whose information is thoroughly reliable, and of exceeding value to all engaged in the metal trade, from the curious and special knowledge which it imparts on mining and mineral production in the most out of the way parts of the world. From far Vancouver to mysterious Nevada, and the once impenetrable regions bordering on the Colorado; from Utah, over-woman'd, to San Francisco, super-abounding in males; from silvery Mexico and coppery Chili; from golden Peru, and the extensive range of the Arancauuian Cordilleras—as yet almost virgin—there is not a pick, or a mattock, or a spade in motion, but what results for the flow of the heave are recorded in the AMERICAN JOURNAL OF MINING. The shares, the capital, the dividends, the losses, and the secretaries, with their addresses, of every Gold, Silver, Lead, and Copper mine throughout the United States and South America, are given in this journal, with prints of mining machinery and scientific inventions having relation to the business of mining. *Oil* it strikes, and *Iron* it hammers at, equally with the same judgment and full detail of important facts and data. The geologist, the mineralogist, the metallurgist, and the man of business will find a subscription to the AMERICAN JOURNAL OF MINING (which is published weekly at New York) an exceedingly advantageous investment.

From the Salt Lake City (Utah) Vidette, Oct. 17.

THE AMERICAN JOURNAL OF MINING.—This is, unqualifiedly, one of the most handsome and highly instructive journals of mining news that is published in America. No miner, mill man, prospector or public office, away out west here, should be without it. It is published weekly, by Western & Company, 37 Park Row, New York City; George Francis Dawson, editor. The price of this *splendid, illustrated* mining paper is only $4 per annum; six months, $2.25. Send for it, everybody who wants to have a mining monitor of comprehensive character and instructive interest. By the number before us, we see that it has just entered on its second volume.

IMPORTANT AND VALUABLE WORKS
ON MINING, MINERALOGY, GEOLOGY AND METALLURGY.

AMERICAN JOURNAL OF MINING, Vol. I., half mor., gilt backs.....$4 00
Paper.....3 50
ANSTED'S Gold Seeker's Manual. 1 vol. 12mo, cloth...$ 1 75
ANTISELL.—The Manufacture of Photogenic or Hydro-Carbon Oils, from Coal and other Bituminous substances, capable of supplying Burning Fluids. By Thomas Antisell, M. D. 1 vol 8vo.....3 00
BUCKLAND (Rev. Wm.)—Geology and Mineralogy 2 vols. 9vo, hf. cf.....20 00
2 cloth. 8 vo, cloth.....10 00
BLAKE (Wm. P.)—Report of a Geological Reconnoissance in California. 1 vol. 4to, illst.....10 00
COQUAND.—Traite des Roches. 1 vol. 8vo, hf. mor.....5 25
DANA'S Manual of Mineralogy. 1 vol. 8vo.....2 25
Text Book of Geology. 1 vol. 12mo.....2 00
DEGOUSSEE.—Guides des Sondeur et des Sondages. 2 vols. and Atlas, half mor.....19 50
DUFRENOY.—Mineralogie. 5 vols. 8vo.....20
FOSTER AND WHITNEY.—Report of the Geology of the Lake Superior Land District. The Iron and Copper Regions. 2 vols. 8vo, and maps (scarce).....10
FAIRBAIRN.—Iron: its History, Properties, and Processes of Manufacture. By Wm. Fairbairn, C. E., LL. D. 1 vol. 8vo. New Edition.....3 75
FEUTCHWANGER.—A Treatise on Gems. 1 vol. 8vo, cloth.....1 50
GREENWELL (G. C.)—A Practical Treatise on Mine Engineering. Handsomely illustrated. 1 vol. 4to, hf. mor.27 50
GOODYEAR'S Translation. A Treatise on the Assaying of Copper, Lead, Silver, Gold and Mercury, from the German of Th. Bodeman and Bruno Kerl. 1 vol. 12mo, cloth.
HUMBLE.—Dictionary of Geology and Mineralogy. Third Edition. 1 vol. 8vo, cloth.....3 50
HOSKOLD'S Practical Treatise on Mining Land and Railway Surveying, Engineering, &c. 1 vol. 8vo, cloth.....15 00
JACOBS.—Precious Metals. 2 vols. 12mo.....12 00
KURR'S Mineral Kingdom. 1 vol. 4to, colored plates....15 75
KING (C. W.)—Natural History, Ancient and Modern, of Precious Stones and Gems. 1 vol. 8vo, cloth.....10 50
KUSTEL.—Nevada and California Processes of Silver and Gold Extraction, for general use, and especially for the Mining Public of California and Nevada; also, a description of the General Metallurgy of Silver Ores. By Guido Kustel, Mining Engineer. Illustrated by accurate engravings. 1 vol. 8vo, cloth.....8 00
LAMBORN.—Rudimental Treatise on the Metallurgy of Copper. 1 vol. 12mo, limp cloth. Illustrated.....1 00
—— Rudimentary Treatise on the Metallurgy of Silver and Lead. 1 vol. 12mo, limp cloth. Illustrated.....1 00
LONG (Major S. H.) Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819 and 1820. Compiled by Edwin James, Botanist and Geologist for the Expedition. 4 vols. 12mo, hf. cf.....50 00
McCORMICK.—Arizona; its Resources and Prospects. Pamphlet, 32 pp. with map. By R. C. McCormick (Secretary of the Territory).....00 25
MITCHELL'S Manual of Practical Assaying. 1 vol. 8vo, cloth.....10 50
MAKINS.—A Manual of Metallurgy, more particularly of the Precious Metals, including the Methods of Assaying them. By G. H. Makins. 1 vol. 12mo, cloth. Illustrated by upwards of 50 engravings.....3 50
MAP of the "Reese River" Mining District.....3 00
MULLAN'S Miner's and Traveller's Guide to Oregon, Washington, Idaho, Montana, Wyoming, and Colorado, via the Missouri and Columbia Rivers. 1 vol. 12mo.....2 00
OVERMAN (Fred.)—A Treatise on Metallurgy; comprising Mining, and General and Particular Metallurgical Operations. 1 vol. 8vo, cloth.....8 00
—— The Manufacture of Iron in all its Various Branches; including a description of Wood-cutting, Coal-digging, etc. 1 vol. 8vo, cloth. (Scarce).....15 00
PIGGOT.—The Chemistry and Metallurgy of Copper. By A. Snowden Piggot, M. D. 1 vol. 12mo, cloth.....1 50
PHILLIPS AND DARLINGTON.—Records of Mining and Metallurgy; or, Facts and Memoranda for the use of Mine Agents and Smelters. By J. A. Phillips and John Darlington. 1 vol. 12mo, cloth.....2 50
PERCY (John).—Metallurgy; the Art of Extracting Metals from their Ores, and adapting them to various Purposes of Manufacture. Vol. 2, Iron and Steel. 1 vol 8vo, cloth.....21
SCOFFERN'S Useful Metals and their Alloys. 1 vol., cloth.....3 75
SOPWITH (T.)—A Treatise on Isometrical Drawing as applicable to Geological and Mining Plans. 1 vol. 8vo, cloth (very scarce).....15 00
SWEET (S. H.)—Special Report on Coal; showing its Distribution, Classification and Cost, delivered over Different Routes to various Points in the State of New York, and the Principal Cities on the Atlantic Coast. By S. H. Sweet, late Deputy Engineer and Surveyor of the State of New York. Transmitted to the Legislature, March, 1865. 1 vol. 8vo, cloth.....3 00
TAYLOR.—Statistics of Coal; including Mineral Bituminous Substances employed in the Arts and Manufactures. Second Edition. By R. C. Taylor. 1 vol. 8vo, cloth.....
TRURAN (W.)—The Iron Manufacture of Great Britain, Theoretically and Practically considered; including Descriptive Details of the Ores, Fuels, and Fluxes employed, the Preliminary Operation of Calcination, the Blast, Refining, and Puddling Furnaces, Engines, Machinery, etc. Third edition, revised. Illustrated. 1 vol. 4to.....20
WHITNEY.—A Geological Survey of California. Report of Field Work, from 1860 to 1864. By J. D. Whitney. 1 vol. quarto.....6
WHITNEY (J. D.)—Silver Mining Regions of Colorado. paper.....00 25

Together with a Large Stock of Engineering and Mechanical Books.

For sale by WESTERN & COMPANY, Office JOURNAL OF MINING, 37 Park Row.
☞Catalogues of Scientific works sent post-paid on application