

## ENGINEERING and MINING JOURNAL.

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Now, the election being over, "the country saved," and GARFIELD elected, let us have the "boom" for which we have been waiting.

HOMESTAKE, with its \$7-ore, pays \$30,000 to \$50,000 a month dividend, and has nearly \$2,000,000 net profit in the "reserves" or "ore in sight" now in the mine.

THE anthracite collieries of Messrs. COXE BROTHERS & COMPANY, of which Mr. ECKLEY B. COXE is the engineer and manager, will shortly have a productive capacity of 10,000 tons a day.

THE Allied Mines, of Sneffels District, Colorado, form a valuable property, which we believe to be under an entirely honorable, experienced, and reliable management. And those who invest in the stock will, we have no doubt, be fairly treated.

THE "syndicate stock" of the Canada Consolidated Gold Mining Company, which is offered by the company in blocks of 1000 shares and upward, is being taken so rapidly that it is expected that by November 20th the list will be closed. The working capital, which will be offered as required from time to time, will be placed at a much higher price than that now selling.

CANADA CONSOLIDATED, with an ore more than twice as rich as Homestake, and of about the same intrinsic value as Calumet & Hecla, and that costs less than the former and only half that of the latter to treat, and that has three quarters of a million net profit "in sight," promises to add another to the list of enormously profitable mines.

HARSHAW, concerning which we several times warned the public when the stock was advancing to \$25, \$30, \$40, and \$45, and which it was sought to run up to \$60 or \$70, has come to grief, and the stock has declined under heavy sales to \$5 per share. This figure is probably considerably below the intrinsic value of the property, though the figures at which the stock was selling a month or two ago were far beyond all real value.

MR. J. BLANDY, of Philadelphia, a very experienced and reliable engineer, has been appointed superintendent of the Arizona Consolidated mines, of Turkey Creek District, Arizona. The property is said to be a valuable one, and the appointment of so well and favorably known an engineer as Mr. BLANDY as its superintendent will inspire a confidence in the enterprise not possessed or warranted in many other good Western properties.

CALUMET & HECLA has a capital stock of 100,000 shares, or \$2,500,000. The stock has had "paid in," we believe, about \$12 on the \$25 share. The mine has paid out nearly \$20,000,000 in dividends, and has now ore blocked out "in sight" that, it is estimated, will yield from \$10,000,000 to \$18,000,000 dividends. The stock is selling at \$240, or \$24,000,000 for the mine. Such facts as these show what enormous profits come from prudent investment in mines, and a single such property more than balances the account of losses in hundreds of those "wild-cat" investments which bring the whole industry into discredit.

THE Spring Valley Hydraulic gold mines are said to be doing very well, and the next clean-up is expected to yield from \$100,000 to \$150,000. Recent explorations by shafts have shown that the blue gravel, which is much richer than the ground now and heretofore washed, is very much thicker than was expected. Over 50 feet of it has been passed through in some shafts recently sunk. The stock of this company, which reached a point as low as \$3.25 per share, is rising, being now quoted at \$5, and it is expected it will go much higher. The property is intrinsically valuable, and will no doubt prove a good and safe investment.

MR. ECKLEY B. COXE, the great Pennsylvania coal operator, the distinguished Mining Engineer, late President of the American Institute of Mining Engineers, the loyal, upright gentleman, has been elected to the Senate of the State of Pennsylvania. In accepting this position, Mr. COXE is sacrificing his own personal interests, and we believe his inclinations, to what he considers the duty of a citizen. We offer him, personally, our sincere sympathy and condolence upon the result of the election, while we congratulate the State of Pennsylvania upon having secured the services of a gentleman above reproach, who combines the trained intellect of the engineer with the experience of the successful business man in the organization and management of the most important private mining enterprise in America.

THE Arizona Consolidated Mill and Mining Company, of Turkey Creek District, is unfortunate in having a name so closely resembling the "Consolidated Arizona Gold and Silver Mining Company of Arivaca," that the average reader frequently gets them "mixed." Both properties are said to be good; but the latter company, according to a late letter from one of our Arizona correspondents, "recently started up its mill and broke all the stone grinders; now it will put in stamps; so much for experiments. This is a good property surrounded with interminable litigation."

THE A. C. M. and M. Co. seems also to be trying experiments in milling; using a rotary, PHELPS' crusher and then a WALKER pulverizer, we are informed by the company, with entire success. The company has also adopted the FOSTER-FIRMIN amalgamator, and thinks it "superior" to other systems. On this, and perhaps on the crushing question, we think more practical data are desirable before the assumed success can be considered as fully assured.

THE company is owned in Philadelphia, and its managers, who are well-known business men, express the intention of carrying on the work as a legitimate enterprise, and anticipate very favorable results, which we trust they will achieve.

## THE CHRYSOLITE ELECTION.

At the annual meeting of the Chrysolite Silver Mining Company on the 3d inst., the ticket representing the party already controlling the Board of Trustees was elected by 133,205 out of the 200,000 shares of the capital stock. As we know of some 20,000 shares besides, which could have been had if needed, and as there is always in such cases a large amount of scattered stock, the owners of which vote neither in person nor by proxy, it is evident that the strength of the late opposition was very slender, and the course it pursued, of not voting at all, was the wisest that could be adopted, since it partially, at least, concealed the specific confession of weakness under the general confession of defeat.

THE annual reports of the President, Treasurer, and General Manager are as satisfactory as could be expected under all the circumstances. The figures of the financial statement tell a plain and not pleasant story as to the past. The dividends upon which the stock was pressed to high figures were paid by ignoring and postponing obligations and borrowing money. The blame of the collapse of last summer, freely laid upon the alleged failure of the mine, is shown to have belonged to the management. The much-abused mine has in fact rescued the company from the disaster which reckless folly had invited. The immense debt has been paid, and a cash surplus of some \$80,000 enables the company to go on unembarrassed with its legitimate operations. Borrowing money at 1¼ per cent compounded monthly is not likely to be a feature of its future history.

At the Trustees' meeting, on the 4th inst., R. W. RAYMOND was elected President; H. A. V. POST, Vice-President; HENRY C. COOPER, Secretary; and DUMONT CLARKE, Treasurer.

As to the condition and prospects of the mine, the reports are highly encouraging, but highly indefinite. The workings are still filled with

poisonous gases, although there is no further danger from the fire. Formerly, the mine was all right, and it was the management that suffered from gas. Now, the management has been ventilated and purified, and the gas has taken to the mine. The change is an improvement; and the final resumption of regular and successful operations, under skillful and prudent direction, can not be far distant.

#### THE MARMORA (ONT.), GOLD MINES.

##### VI.—COST OF MINING AND MILLING CANADA CONSOLIDATED ORES.

The cost of mining is based upon wages at \$1 per day for common labor, and for miners \$1.25 per day of ten working hours (7 A.M. to 6 P.M., less one hour at noon), powder at \$3 per keg (25 lbs.), dynamite 40 cents per lb., best drill steel at 12 to 13 cents per lb., and other supplies in proportion. Miners by hand-drilling can sink shafts 7 × 8 feet section, or drive levels 6 × 6½ feet section at the rate of about \$12 to \$13 per foot run, including supplies. With the use of rock-drills, and pumps, and hoisting-engines, driven by compressed air, this cost will certainly be reduced to one half or less, as has been done in the Calumet & Hecla mines on Lake Superior. The motive power is a water-fall sufficient for all purposes nine or ten months in the year. The cost of stoping with drills will not exceed 75 cents to \$1 per ton where the vein is as large as it has heretofore been found, and the average cost of the mining and delivering on the surface, including a fair amount of dead-work, should not exceed \$1.75 per ton, after the mines have been opened to a capacity of 100 tons a day, say, after six months' work. With wages from \$3.50 upward per day, with wood \$4.75 per cord, and paying about 25 cents per ton treated, for the water to supply the stamps and boilers, Homestake is mining at an average cost of \$1.30 per ton. Within sixty days from commencing work, there will be three shafts sinking and eight levels driving in ore; and within six months, fully twice that number of places will be driving. There can be no question, therefore, but that, should the vein continue as it has been up to the present time, and as it is confidently expected it will, there will be no difficulty in securing an output of from 100 to 150 tons a day in six months, and more than double that amount within a year after commencing work.

The cost of milling is based on wages from \$1 to \$1.25 per day; wood, \$1 to \$1.25 per cord; castings, 3½ to 4 cents per lb.; an abundant water-power, etc.

Milling operations will consist in coarse crushing, with stamps or rolls, hand-picking, concentrating with automatic jigs and perhaps Frue belts, roasting the concentrates in a revolving cylinder or some other form of automatic rabbling furnace, pulverizing the roasted ore, chlorinating or amalgamating it—probably the former, which has given excellent results in the tests thus far made—filtering, precipitating, and melting the gold.

The cost of this treatment has been estimated by Mr. STRETCH at \$1.25 per ton, and by Mr. COUCH at \$1.30 per ton. And when we consider that the crushing and jigging will not cost over 50 cents a ton (they cost about this at Lake Superior), and that the roasting is on only one third to one fourth of the original ore, and costs in a revolving furnace 50 cents per ton of concentrates, or say 17 cents per ton of original ore, and the cost of chlorination is on say one fourth of the original ore, and assuming chlorination and precipitation to cost \$1.50 per ton, the cost reduced to the ore mined would be less than 50 cents per ton, or the entire milling cost, \$1.25; and mining, \$1.75; we see how safe is the estimate of Messrs. STRETCH and COUCH at \$3.25, and how much more than safe is our figure, including all contingencies, of \$3.42 per ton.

##### VII.—NET PROFITS.

The gold contents of the ore having been fully demonstrated to be an average \$18.65 per ton, the loss in treatment from 9 to 20 per cent (as we use chlorination or amalgamation, and we assume the least favorable figure); and the cost of mining and milling is assumed as a very safe figure at \$3.42 per ton, we get the net profit \$11.50 per ton. On a business of 100 tons a day, this would leave a net earning of over \$25,000 a month.

Within a year, should the veins continue as is expected from all present knowledge of them, the output should be from 200 to 250 tons a day, and the net profits should then amount to from \$50,000 to \$60,000 per month, while the reserves of ore in sight should increase still more rapidly than the output.

It should not be overlooked that the arsenious acid which is collected in the condensation chambers of the roasting furnace will amount to about 20 per cent of the weight of the concentrates roasted, and has a commercial value which will probably net the company fully 50 cents per ton on the ore milled, or \$1.50 per ton on the ore roasted. This important item has not been included in the above estimates of net profits.

##### VIII.—SOME OF THE ADVANTAGES OF THIS PROPERTY.

1. The mines are situated in a rich, agricultural district, with supplies of all kinds remarkably cheap. There are excellent macadamized roads, and the railroad within nine miles of the mines; and there will soon be a telegraph line to the mines.

2. Wood and lumber are abundant. The best hard wood delivered in

the mill-yard costs \$1.25 per cord. Timber and lumber are proportionately cheap.

3. Water, which is as essential to the success of a mining enterprise as is rich ore, is here so abundant that a fall of some 30 feet on the Moira River will furnish, for nine or ten months of the year, all the power necessary to work the mill, drive the hoisting-engines, pumps, rock-drills, etc., and during the remaining two or three months will need only a little assistance from a steam-engine.

4. The property is all held in fee-simple, and the titles are perfect in every respect; they have been examined by JOHN BELL, Esq., of Belleville, Solicitor to the Grand Trunk Railway Company.

5. Taxes.—Mines and minerals are not taxed under the Ontario laws, and only the surface valued for agricultural purposes, and surface improvements are subject to a light tax.

6. Labor is abundant, and wages are and have always been very low, \$1 to \$1.25 per day, the low cost of living and advantages of schools, etc., making these wages more desirable than \$3 and \$4 a day in the Western mining regions.

7. The mines are developed sufficiently to show a present net value of ore in sight alone of three quarters of a million dollars, while the mine and surface improvements and water-power are of great value. The mines are now in pay, and capable of producing largely from the start.

Though the property upon a fair valuation has been estimated at one million to one and a half million dollars, it is capitalized at only \$500,000 in shares of \$1 each, and this includes more than 100,000 shares set aside for working capital, while the price at which the syndicate or purchase-money stock is sold is based upon the cost of the property before the work done in the mines had attained its present extent, and before the reserves of ore were nearly as large as they now are.

The working capital provided is ample for the extensive development of the mines, and the erection of mills with the most approved appliances for treating the ore.

The stock is issued fully paid, and is unassessable.

The management of the mines will be conducted with the utmost energy, and under the most skillful practical experience. A leading feature will be to accumulate and constantly maintain very large reserves in the mines; in short, to make this a gold "Calumet & Hecla," and, by full and honest reports, to keep stockholders fully informed of the value and condition of their property.

The accessibility of the mines, within 24 hours of New York, will enable stockholders, at a small cost, to inform themselves at any time of the actual condition of their property.

With veins thoroughly proven and of whose permanence there can be no question; with ores in immense quantity and of remarkable uniformity, easily treated, of such richness as to leave \$10 to \$12 net profit per ton, or from three to four times that obtained from Homestake ore; and with mines situated in a country where labor is abundant, wages and cost of living, supplies of all kinds, and consequently cost of doing work are less than at almost any other place on the continent; with water-power abundant, cheap fuel, etc., this property offers those elements of safety, profitableness, and permanence which naturally attract capital seeking legitimate and highly profitable investment.

#### THE DOWD TUNNELING SYSTEM.

The accompanying cuts illustrate a new system of tunneling proposed by Mr. OLNEY B. DOWD, of New York, with special reference to tunneling the Hudson, where, as is known to all our readers, a marvelous amount of ignorance and incompetence has produced a dismal failure and occasioned the loss of many lives. The following is a description of this ingenious system:

"Figure 1 is a longitudinal sectional elevation of a portion of a tunnel, and the shield employed in its construction. A represents a cylindrical iron shield of great weight and strength, having internal diameter slightly greater than external diameter of tunnel B. The shield is made water-tight in front by an adjustable head (C), composed of strong iron sections, and has a large central opening in which is fastened by bolts, etc., the collar D, which forms the bearing for shaft E. This shaft carries the strong rotating steel tunneling arm F, on each side of which are blunt-edge cutting tools.

"The arm is about one foot in front of shield-head. G is a cog-wheel upon shaft E for revolving it, which is effected by two oscillating compressed air or steam-engines, as shown in cut on opposite sides of the cog-wheel G. Shaft E is hollow and has a tube within it extending to the junction with arm F, and the arm has two longitudinal water passages indicated in cross-sectional view, Figure 2, by dotted lines; each is connected with the water passages shown on either side of arm F. A tube in the shaft is arranged so that by a part revolution of it the connection can be made so as always to drive the water through the side of the arm which is moving forward.

"The shield being in place, the shaft and arm are moved slowly, revolving in either direction, and small quantities of water are forced through the shaft and arm to dissolve the silt and clay as they are scraped from the heading by the cutters, and form a semi-fluid, about the consistency of thick cream, according to the amount of water forced in, so that the arm is found to move easily in this sort of disk of soft material. Between this and the head of shield another disk forms, about a foot thick, of much harder consistency, and in silt or clay remains adhering to the head of the shield. It is sometimes found desirable to force compressed air through the shaft and arm, and good results are obtained. The air disintegrates and drives the earth from the front of the arm, and forms minute bubbles, and gives greater elasticity to the silt, etc., allowing the arm to move freely.

"It should be observed that no part of the disk in which the arm moves is a vacuum or air-filled space, as this can occur only in exceptionally firm silt or

clay; on the contrary, there is a constant pressure on all sides of the arm and on the head of the shield—the pressure in difficult portions of the work being as great as four tons to the square foot.

"The shield is pressed forward by hydraulic jacks H H. In excavating for a full-sized railroad tunnel, eight twelve-inch bore jacks should be used, of strength capable of bearing a test of about three thousand tons combined moving power, but arranged to work advantageously for the comparatively small power usually required of them.

"Bars I I connect by socket-joint with the pistons of the jacks, and reach back to the front edge of the iron tunnel, on which they have a reliable support. The jacks force the shield forward; at the same time, the shaft and arm revolve and cut and mix the silt with the injected water, and the semi-fluid silt is pressed backward through pipes J J, and falls into the car K.

"The course of the shield may be changed by shutting the cocks in the pipes leading from the pumps to the jacks on that side toward which it is to be directed, and allowing the remaining jacks to advance the opposite side.

"The tunnel itself is made of solid sections of cast-iron pipe, entirely free from any longitudinal seams—this form being used for economy of construction and to give greater resistance to crushing force than the previously made iron tunnels.

"The desired form of railroad tunnel is a slight oval, about 17½ feet high by 16 wide. This form allows the short sections of about 4 feet length to be carried through the completed portions by turning their greater diameter at right angles to the greater diameter of the completed tunnel, as shown by dotted lines at M.

"After being cast, and before becoming quite cold, the sections are covered externally with a thick rust-proof bituminous preparation. This coating is applied by placing the section on its side with a hoop of sheet-iron of the same

arm attached, if it is desired to renew the cutters, and means not shown are arranged to prevent silt, etc., pressing into the opening while this is done.

"By the use of special cutters on arm F, rock, when not too hard, may be tunneled.

"Figure 3 indicates the form and approximately the grade of the tunnels for the inclined plane system under the Hudson. The south one represents the tunnel for incoming trains, and the north or upper one that for outgoing trains; the dotted lines simply indicate the horizontal."

It is not difficult to point out some difficulties which will present themselves in practice; and among these may be mentioned the difficulty of removing or changing the rotating arm in case of accident or on account of wear; the delay occasioned by meeting with boulders, timber, or other obstructions, such as might be encountered in driving through the gravel, hard-pan, or silt of a river bed. At the same time, it seems to us as if in certain cases the system would be practicable and economical; indeed, the cases in which it could be best applied are those in which work by any other system is extremely difficult and expensive. We understand that experiments have been made successfully with small model machines; but the conditions of actual practice on a large scale should of course be encountered, and the difficulties successfully overcome before adopting a new system in so important a work as that of the

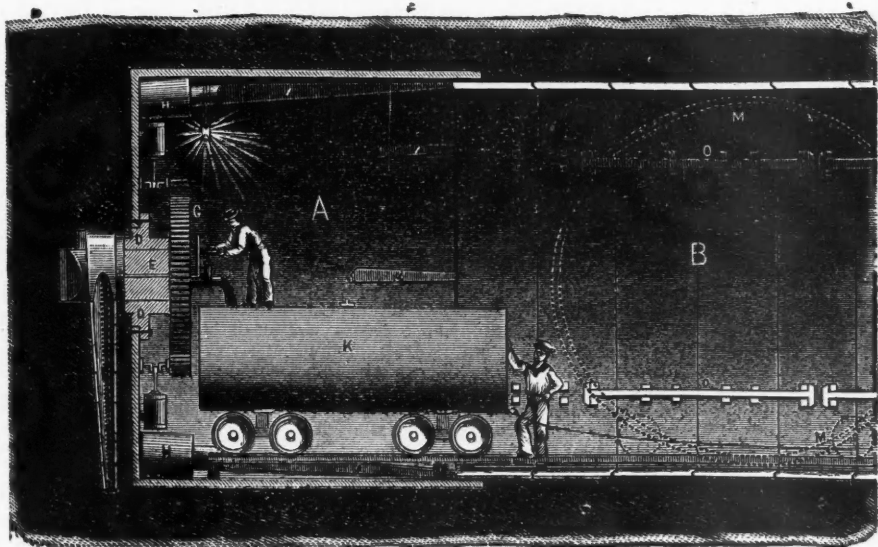


FIG. 1.

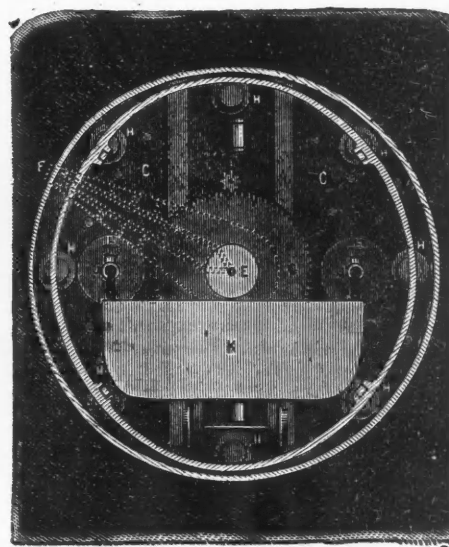


FIG. 2.

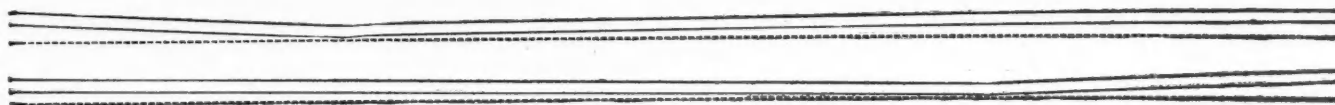


FIG. 3.

width as the section, but of size to leave about half or three quarters of an inch space for the thickness of the coating. This space is filled with the composition while hot, so that it adheres to both the section and the hoop. While this is done, the hoop is held by a frame coinciding with the form of the slightly elliptical opening in the rear of the shield through which it is to pass, so that, regardless of any irregularities in the rough casting of the section, the exterior of the hoop shall be suited to make a good joint in the shield packing, so that the rear of the shield may draw readily off from the hoop—which remains on the section—without allowing openings for irruption of water or mud.

"A portion of the coating material extends to the recess in the end of the section, to form a water-tight joint. Several of these sections being in place, and under pressure from the jacks, four steel or iron links, or bars O O, are placed while hot upon lugs cast on the interior of the section, as shown, drawing them together by shrinkage while cooling.

"These links may be used with say five hundred tons each, or about two thousand tons combined contracting power, and in very bad ground two more bars may be used in other lugs cast on the sides of the tunnel sections, to insure very great longitudinal rigidity. The packing between the sections forms a water-tight joint, and it will be seen the form of joint illustrated admits of repacking at any time from the interior of the tunnel, in case a slight leak occurs.

"Among minor details of the system may be mentioned the use of the well-known sand ejector, but of peculiar form, consisting of a large portable tube, with a smaller air-tube within it, extending to the end of the larger pipe.

"This pipe, when required, is placed obliquely with its upper curved end over the dirt-car, and its lower end projecting through the lower edge of the shield-head, and flush with its outer face; a hose is attached to the small tube, and compressed air is driven through it, blowing the sand or earth backward and upward into the car.

"This plan is found of value in certain kinds of sand for giving greater ease of motion to arm F, but in silt or clay it is unnecessary.

"The ejector is also valuable when placed from two to six feet lower down—that is, through an oblique opening at the lower front of the shield cylinder—to excavate for sinking below line of progress any boulder or similar obstruction which might prove too great for the unaided power of the arm to force downward. While using the ejector, and indeed at all times, except when in hard silt or clay, the shield should be pressed forward with considerably more force than the backward pressure of the earth heading incident to the weight of the superincumbent column of water and earth, to prevent excavating more material than requisite for the passage of the shield.

"Collar D is arranged to allow of being taken into the shield with shaft and

Hudson River Tunnel. Mr. DOWD would have one advantage from the start: he would be replacing a "system" which has not a single redeeming feature, except it be as a warning against putting work so important as this in wholly inexperienced and incapable hands.

#### THE COLLECTION OF MINERAL STATISTICS IN THE WEST.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: The statistical work that is now progressing among the mines of the West is something that deserves the support of all interested in the honest development of our mineral resources.

Our government has in general been too lax in such matters, and has too often left the collection of information about the mines of a district to those whose interests rendered them any thing but impartial chroniclers, and we are glad to see the right persons once more taking hold of this important work.

The returns from properly directed mining investments are such, on the whole, as to bear up well under close criticism, and if this effort that the government is making is seconded by mine owners and directors, the results can not fail to be highly beneficial.

We have lately had the pleasure of a visit from Messrs. W. G. Sharp and H. Garlish, the two gentlemen who are gathering the statistics for the San Juan section of Colorado. The work seems to be carried on conscientiously, and the pleasure of sitting down before our ledgers and record-books and making synopses of our expenditures and productions is one that we too rarely enjoy.

The work of gathering the mining statistics, as is known to almost every reader of your journal, is under the Director of the Tenth Census of the United States, who has appointed Hon. Clarence King to the charge of the collection of the Technical Statistics of Mines and Metallurgical Establishments. From this fact, we can rely on a compilation of great value.

Mr. King's work is under two divisions: that of the Rocky Mountains being under Mr. J. F. Emmons, whose headquarters are at Denver; while the western division is in charge of Mr. G. F. Becker.

The United States offers great inducements to her citizens in locating her

mineral lands, and it would seem no more than proper that she should exercise authority in requiring that statistics as to productions, etc., should be regularly transmitted to the government.

In this way, we should gradually see mining taking the place it should occupy among the legitimate enterprises of the country, and the eliminations of much of the obnoxious scheming and blind speculation that have been such curses to it.

That honest men should refuse any knowledge that they possess seems scarcely credible. The individual data from the various mines of each district will, we understand, be compiled and a general result obtained.

The provision that two hundred feet of development-work should be done on properties reported on, or a certain shipment of ore be made, is most desirable; for the labor of collecting information about slightly developed prospects would be both onerous and uninteresting to the general public.

The collection of characteristic ores from each mine, which will be on exhibition in Denver, will also be of great value.

This work is so important that we hope there will be no stinting of funds on the part of the government, and that its association with the work of the Census will not cause it to be slighted in any way. It should be conducted liberally and carefully, which could probably be better done if it were under separate direction from any other work of the Department of the Interior.

E. E. OLCOTT, E. M.

October, 1880.

#### FRISCO, SILVER REEF, AND PARLEY'S PARK, UTAH; AND BUTTE, MONTANA.

Special Correspondence of the Engineering and Mining Journal.

Work on the Horn-Silver Company's new smelter, near this city, is progressing rapidly. In the mean time, the smelter at Frisco is doing its utmost, and is turning out about ten car-loads of bullion a week. The Frisco Company now has its new Paddock dry concentrator of ten jigs at work on Carbonate ore. It works to a charm, and is the first machine of the kind, I believe, that has been successful in Utah. The company is putting through it fifty tons of ore daily, with a result of twelve and a half tons that runs sixty-five per cent of lead, carrying from three and a half to four and a half ounces of silver to each unit of lead. The managers of the company, of course, are highly elated with the success, as their Carbonate mine is extensively developed, and shows bodies of ore second in size only to those exposed in the Horn-Silver mine. The mine is nearly 400 feet deep, and has been developed very systematically. Both walls are perfect. The main shaft on the Carrie Lucille is now down 120 feet in the vein, which holds its strength of four feet. It will be well developed the coming winter.

#### SILVER REEF.

The Stormont Company's mines are generally showing improvement as developments proceed, and the ore-reserves are being kept up; but the bullion shipments made by this company speak for the property. A very rich body of ore has been opened by a winze sunk from the north drift in the Stormont Company's Buckeye ground. It is the richest large body of ore ever opened in any of the mines of Silver Reef. It extends the entire depth of the winze—some twenty feet—and nowhere has an end of this ore-pipe been found. The Christy's shipments continue regular, and reports from this company's mines are flattering. The output of these three companies for 1880 will reach at least one million dollars.

Developments in the mines of Parley's Park go steadily forward, and a few months hence, it is expected, will witness the development of Jones Bonanza and the Hawkeye into ore-producing mines. At the Ontario, every thing goes forward smoothly, and a considerably increased bullion product will be made this month.

A number of the Bingham mines also show improvement.

#### BUTTE, MONTANA.

This camp is attracting considerable attention, and justly so, for all reports indicate that the mines of this district are rich. The Alice is already a bonanza, and reliable mining men who have visited Butte recently say there are at least ten equally good mines there now developing, and they predict a prosperous future for the camp. One of the best developed mines after the Alice is the Bell, owned by J. B. Meader, formerly of Salt Lake. The ore-seam is said to average three feet in thickness, and it has been opened to a depth of 147 feet, with 300 feet of levels run on the vein. I herewith mail you a sample of the ore, which is a picked piece of first-class. The second-class runs about fifty ounces of silver and twenty per cent of copper to the ton. This is reserved in the mine, and the first-class ore is sent to Hill's works, Argo, Colo., for reduction.

SALT LAKE CITY, UTAH, Oct. 27.

THE STOW FLEXIBLE SHAFT consists of a series of coils of steel wire wound hard upon each other, the layers running alternately in opposite directions until the size required is attained. This constitutes the core, or working part of the flexible shaft, and has proper steel fittings attached at each end, one to receive the power through a pulley, the other to transmit it through whatever tool is used. This working core is inclosed in a continuous case, made of a single coil of special square wire, covered with leather or other flexible material, giving the working core a bearing throughout its whole length, protecting the workman, and preventing the core from kinking up on itself, as it would do without this covering.

Among the many uses to which this flexible shaft is put, we may mention that of drilling holes in mines for blasts. The larger sizes of shafts, with geared drill-press, will easily drill holes 2 or 3 inches diameter in any direction to any reasonable depth. The flexible shafts of the larger sizes are made to a standard length of 8 feet, and repair parts can always be supplied. Additional extension is obtained by driving-rope. This rope passes through pulleys in such a way as to turn any number of corners in any direction required, thus enabling the drill-press (which weighs less than forty pounds) to be set in any position, and then attaching the flexible shaft to it in that position, and drilling as deep as required. As the whole plant weighs less than 100 pounds, it can be easily handled and be carried out of harm's way at any time, and again carried to the work and set up.

#### WASHINGTON CAMP, ARIZONA.

Special Correspondence of the Engineering and Mining Journal.

Washington Camp is located in the Patagonia mountains and district, which are in the central southern portion of Pima County. The district extends to the Mexican line, being 12 miles in length and 7 in width, and includes Harshaw, Mowry, and Washington camps.

Traditions and records of Mexico, under Spanish rule, when it was a colonial policy to levy duties upon the bullion product of the mines, give accounts of the great wealth of this southern section of the territory. This system, combined with the depredations of the savages, rendered it impossible to develop and work the mines. Afterward, missions were established in this district, and the fathers mined in a crude manner, employing peon laborers, who mined with bars and wedges, carrying waste, water, and ore to the surface in raw-hide buckets strapped to their heads, ascending and descending from short stations on notched poles. The ores were beneficiated in arrastras or adobe furnaces. Ore and bullion were transported on burros.

About the time of our late civil war, a company of mining engineers and operators explored this part of the territory. Among this party was Mr. Bacon and Lieutenant Mowry. The latter worked a mine to the depth of 340 feet and smelted the ores near by; while the former located the Belmont and San Antonio, two of the best appearing properties in the camp. The former reached a depth of over 100 feet, and the latter about 40 feet, showing continuous bodies of ores. Both were patented several years later at great expense. On account of the withdrawal of the United States troops, continuous attacks of the Apaches, distances from markets, and so near to a country eternally revolutionizing, these mining enterprises were suspended.

Freights are high, but the competition of the two railroads now building must necessarily cheapen them. Rates to San Francisco from the nearest station to this camp are, for first-class, \$3.65 per cwt., and for fifth-class, \$2.65; intermediate classes at proportionate rates. Ores are shipped according to value, being \$15 per ton for ores worth \$100 or less per ton, and two per cent for the increase in value will be added to this. Wagon rates are from \$1.25 to \$1.50 per cwt., but competition and large contracts will reduce this rate. While the summer and winter are somewhat similar to those of the East, the temperature is subject to no violent changes. The thermometer rarely indicates over 90 degrees during the day in summer, and, owing to high altitudes, this is not so oppressive as at lower levels. At night a pair of blankets is needed. In winter, the snow falls several inches, but on the mesas and southern exposure seldom remains longer than two or three days. Outdoor work can be prosecuted in all seasons. The wet seasons come in summer and winter. The annual rain-fall varies from twelve to twenty inches, affording a supply of water for domestic purposes. In the mountains, owing to the sandy condition of the soil, it leaves the surface; but it is believed that at no great depth water for reduction purposes will be found. In the Santa Cruz Valley, it is found in sufficient quantity for all purposes. The mountain sides and valleys are covered with a growth of low live-oak, which makes a fair fuel and charcoal; the former costing \$3 per cord delivered; and the latter, 12 cents per bushel. The pine lumber for building purposes and timbering mines comes from the Huachuca Mountains, twenty miles east, costing delivered from \$40 to \$60 per M. In the Santa Cruz Valley, 3 to 6 miles from here, most of the cereals and vegetables can be produced. All kinds of live-stock are cheap, coming mostly from the grazing country of Sonora. Board ranges from \$7 to \$9 per week. Labor is high, when compared with Eastern wages, but not so when other things are considered. Miners receive from \$3.50 to \$4.50 per day; mechanics and artisans, from \$5 to \$6; common labor, from \$2 to \$3. Materials for building, such as limestone, lime, and sand, are plenty, and burnt brick costs \$10 per 1000.

This range of mountains here is low, rising gently from the valley, and from 400 to 500 feet above it; while the altitude above the sea-level is something over 5000 feet, the configuration partaking in a great degree of the character of the foot-hills. The valley slopes gently to the south. The old mines have been deserted for several years, for reasons explained.

There appear to be two systems of lodes, or a surface bifurcation, starting at the most southerly part of the camp; one striking east of north; the other, west of north. Both are traceable upon the surface for two miles, dipping slightly to the west.

The veins vary in width from 3 to 50 feet. The croppings in many places are bold, while in others the surface is stained. The porous quartz is darkened by oxides of manganese or reddened with iron. It is the theory with some that such continuous croppings indicate depth. The correctness of this assertion requires confirmation. There can be but little doubt of their magnitude. The principal ores of the various mines are similar, being mostly soft and decomposed, therefore easily worked; but whether this will be the case as depth is reached, is held but not proved. The ochraceous character of most of the ores is no doubt the result of oxidation of the sulphides, especially the galena and pyrites. The metallic oxides contain a large percentage of silica, and in general terms may be styled siliceous iron-stained carbonates of lead, mixed with ochreous ores somewhat pulverulent. I have seen no analysis of the ores, and can not give definitely the amount of the metal or its relative proportion; nor am I able to give the value of the ores, but would estimate that they contain from 10 to 30 per cent of lead, and that 50 per cent or over of all ore extracted could be profitably treated at a net cost of from \$10 to \$20 per ton. The nature of these lodes is, that the ores are not so rich as abundant; but the great facilities for treating them on a large scale give them their prospective value. J. M. G.

WASHINGTON CAMP, ARIZ., Oct. 9.

#### MAINE MINING NOTES.

A reliable correspondent sends us the following notes of interest:

"In the North Castine mine, which I recently visited, the vein is nearly vertical, strike N. 75° east. Width of vein, about 6 feet, with pretty well defined walls, near one of which occur stringers of pyrites (mostly iron), averaging not over 8 inches in aggregate thickness. At the bottom of the shaft, the vein was pinched nearly out, according to report, and the lower part had been taken for a sump and floored over.

"Some good galena had been taken from the shaft and worked for show specimens of silver and gold. The force employed was three men, who said they were driving at the rate of 2 feet per week.

"The stock is selling, under a guarantee of repurchase in 90 days, at 95 per cent, and has run up from \$1.60 to \$2.85 (100,000 shares, I believe).

"From appearance of vein, I should not be surprised if decided improvement took place any day, but there was no such value there at the date of my visit.

"I found some very good prospects in Maine, but any amount of exaggeration and theory. Can you tell me anything about Professor Stewart, who is leading them all by the nose?"

### PROGRESS IN SCIENCE AND THE ARTS.

**The Sun's Heat.**—Prof. C. A. Young, in the November number of the *Popular Science Monthly*, finds himself face to face with these questions: How is the heat of the sun maintained? how long has it lasted already? how long will it continue? are there any signs of increase or of diminution? After affirming that, in the present state of science, only somewhat vague and unsatisfactory replies are possible, Professor Young holds that, so far as observation goes, we can only say that the outpouring of the solar heat, amazing as it is, appears to have gone on unchanged through all the centuries of human history. The author thinks that there is some truth in each of the two theories which have been proposed to account for the sun's fire. As to the first, the impact of meteoric matter, it is quite certain that solar heat is thus produced; but the question is, whether the supply of meteoric matter is sufficient to account for any great proportion of the whole? After giving Sir William Thomson's calculation of the amount of heat which would be produced by each of the planets falling into the sun from its present orbit, by which it appears that Jupiter would maintain the sun's present expenditure of energy for 32,254 years, and Mercury for six years and 219 days, and that the collapse of all the planets upon the sun would generate sufficient heat to maintain its supply for nearly 46,000 years; and after estimating that matter equal to only about one one hundredth part of the mass of the earth, falling annually upon the solar surface, would maintain its radiation indefinitely, Professor Young thinks it improbable, from astronomical reasons, that any such quantity of matter can be supposed to reach the sun. So large a quantity of matter would necessitate a vastly greater quantity circulating around the sun, between it and the planet Mercury. But if there were near the sun meteoric matter equaling, for example, the mass of the earth, it ought to produce an observable effect on the motions of Mercury, and no such effect has yet been detected. Astronomers, therefore, failing to find a full explanation of the cause of solar energy in this hypothesis, have adopted a second one, which is, that the sun's diameter is slowly contracting, and that the gaseous mass is gradually liquefying and becoming solid. The conclusion is drawn that, if this theory be correct, there must come a time when there will be no solar heat, as there has also been a time when it began. How far forward is the end, how far backward the beginning? Newcomb is authority for the statement that, with its present radiation, the sun will shrink to half its present diameter in about five million years. Reduced to this size, and eight times as dense as now, it will cease to be mainly gaseous, and its temperature will begin to fall. Hence Newcomb assigns as the term during which the sun can supply heat enough to support life on the earth, as we know life, a period of ten million years. The writer somewhat more confidently casts his eye backward, and concludes that the sun can not have been emitting heat at the present rate for more than eighteen million years, if its heat has been generated in the manner described. If the sun has contracted, from a diameter even many times larger than that of Neptune's orbit to its present dimensions, as is probably true in the main, "we are inexorably shut up to the conclusion that the total life of the solar system, from its birth to its death, is included in some such space of time as thirty millions of years: no reasonable allowances for the fall of meteoric matter," etc., "could raise it to sixty millions." The possibility of collision with wandering stars, and the suggestion of ways as yet unconceived of for restoring wasted energy, are followed by the statement that "the present order of things appears to be limited in either direction by terminal catastrophes which are veiled in clouds as yet impenetrable."

**Air-Locomotive.**—English papers give an account of an air-locomotive designed by Major Beaumont, of the Royal Engineers. From an account of an experiment made at Woolwich, some points may be gathered useful in subterranean communication in cities. The engine, having received a charge of 100 cubic feet of air, with a pressure of 1000 pounds to the square inch, left the Royal Arsenal station, on October 6th, at 12.23 P.M., for a run to Dartford and back, about 16 miles. In order to increase the energy of the air, it was heated, on being admitted to the cylinder, by a very small quantity of steam. The indications on the pressure-gauge, as different stations were passed, were 940 pounds at 12.27 P.M.; 860 pounds at 12.33; and 760 pounds; 540 pounds pressure being the store of energy on arriving at Dartford at 12.50. Waste having been occasioned by shunting, the return journey began with a pressure of 510 pounds at 1.35 P.M., and Plumstead station was again reached at 2.10. This locomotive, not so large as one of our common street-cars, weighs about 10 tons, and draws a load of 16 tons up a moderate incline. It can be charged with air in fifteen minutes, does not send out any rush of steam or noxious gases, and makes only a trifling noise. Its sanitary advantages for underground work are obvious, and it can also be used for surface roads. Major Beaumont calculates that one on this principle, but weighing about 50 tons, would be the most powerful of traction motors.

**New Railroad Construction.**—The *Railroad Gazette* of October 29th gives a total of 113 miles of new railroad. This includes the track laid on the Manhattan, Alma & Burlingame branch of the Atchison, Topeka & Santa Fé, from Burlingame, Kan., northwest to Manhattan, 59 miles. The construction thus far this year is 4388 miles, against 2739 miles reported at the same time in 1879, 1635 miles in 1878, 1668 miles in 1877, 1875 miles in 1876, 986 miles in 1875, 1363 miles in 1874, 3075 miles in 1873, and 5709 miles in 1872.

### GENERAL MINING NEWS.

#### ARIZONA.

From the *Globe-Chronicle* of October 17th we glean the following: Work at the Golden Nugget has progressed satisfactorily, and a depth of 80 feet in the main shaft has been reached. The ore is of a much higher grade than any previously extracted; the vein shows greater width.

The Arizona *Citizen* of the 19th ult. says: The Perry mine on the Hassayampa, of which little has been said of late, has turned out some very fine ore.

The Arizona *Silver Belt* of the 23d ult. contains the following items:

Connections have been made all around in the various shafts between the 100 and 200-foot levels of the Mack Morris. At the 200-foot level, the force has been doubled, and will take out ore rapidly and in great quantities. There is almost an unlimited amount in sight. The Mexican mill will start immediately, with ten stamps, on Mack Morris ore.

From the superintendent of the Pioneer mine, our contemporary learns that sinking has been resumed in the original shaft. It is now down to water-level in good ore. A cross-cut was commenced recently, in ore, to reach the west wall. The original shaft was sunk in the ledge, neither wall having been seen.

The Emmiazette mine is looking well. At a depth of 120 feet, the vein is solid, and some of the ore shown is very like King ore.

The latest reports from the Centennial mine state that the ore is very rich, the work at the mine is pushed with great energy.

The Final *Drill* of the 23d ult. says: The Emperor mine, situated 2000 feet east of the Silver King, has a large ledge of porphyry running easterly and westerly. The ore is of a fine quality, and appears to be of the same character as the Silver King. Several assays have been made, with satisfactory results. It is supposed that the Emperor will come to a union with the King, where some work has been done.

**GLOBE DISTRICT.**—The *Globe Chronicle* of the 24th ult. says: The tunnel in the General Hooker has been run from the east side, northeast 150 feet. The ledge was struck at a distance of 30 feet, and the ledge matter has been continuous since 120 feet, and the face of it is still in ore. The ore is of the same general character as found in the Eagle and other developed claims in that district. It is a conglomerate of porphyry, copper stained oxide of iron, and free gold. Assays have been made with satisfactory results.

The Retrieve lies one half-mile southeast of the Hooker, and is a northeast extension of the Celia, owned by the Golden Eagle Company. Work is pushing in a cut, and a tunnel will soon be started. The ore is a honey-combed gold quartz. No assays have yet been made.

The Golden Eagle Company's Mill is one of the most perfect in Arizona. The building of it was projected first in February of this year, and since then the work has been pushed with great rapidity. The mill is of ten stamps, with capacity for thirty, furnished by the Pacific Iron-Works, San Francisco. The mill will commence crushing ore from the Golden Eagle mine shortly.

The Golden Eagle vein runs northeast and southwest. A tunnel has been started near the center of the ledge in the west face of the mountain, and is in a distance of 567 feet. It is 293 feet from mouth of tunnel to shaft, which is sunk to a depth of 246 feet from surface. From the shaft to winze is 164 feet, and to face of tunnel 110 feet farther. The tunnel taps the shaft 100 feet from the surface. At the 200-foot level, the workings are 90 feet west from shaft and 164 feet east, to winze connecting with tunnel. Seventy feet west from mouth of tunnel, is a shaft of 42 feet, from which 70 tons of ore have been taken. Twelve hundred tons are now on the dump ready for working. The ore is a conglomerate of iron, porphyry, copper, and free gold, and will mill from \$50 to \$75.

The Salt Lake *Tribune* of the 28th ult. says: A rich strike is reported in the north drift of the 150 level of the Consolidated Arizona mine, in Arizona District. The south drift at 55 feet shows a body of the same character of ore.

At Cachise Pass, astonishing developments are reported. The chloride vein in the Mary A is four feet wide, and the carbonate ore on each side of the vein is two feet wide, making the vein of paying-ore seven feet.

#### CALIFORNIA.

##### THE BODIE DISTRICT.

The following abstracts of mine superintendents' reports are taken from the *Standard-News* of the 25th ult.:

**BECHTEL.**—The new shaft of the Bechtel Consolidated, which has been pushed with great rapidity for the past few weeks, has broken through into the upraise from the 500 level of the Tioga, thus reaching a vertical depth of 517 feet. The upraise was 35 feet, and, as soon as this distance can be timbered, sinking will be resumed, and it is also probable that another upraise to meet the shaft will be commenced immediately from the 800 level of the Tioga.

**BOSTON CONSOLIDATED.**—The north drift on the 300 level has been advanced 20 feet; total length, 205 feet. The ground passed through during the week has been much softer than any yet encountered on this level. We are still following the west branch of the main lode, averaging about two feet in width, and giving favorable assays. The ore-stopes on the 200 level continue to yield a fair quality of milling ore.

**CONSOLIDATED PACIFIC.**—A cross-cut has been started on the 600 level, running east from the station; progress for the week, six feet. The rock in the face of the cross-cut is very hard, but blasts well. A cross-cut has been started west from the station cut out west from the shaft, same level, and has been driven five feet, passing through a hard formation of porphyry, but showing signs of easier working ground as advance is made, as frequent seams of clay are encountered. The new cage is working smoothly, and the cars, holding three fourths of a ton, are easily and rapidly hoisted without apparent strain on the machinery.

**GLYNN-DALE.**—The superintendent reports that the station at the 225 level has been opened up, and the east cross-cut extended 10 feet. The character of ground is somewhat better and is working easier, with favorable indications of quartz. It is expected that during the coming week the quartz passed through in sinking the shaft will be cut in the cross-cut. A full supply of material is on hand, and every thing about the mine is working well.

**SUMMIT.**—During the week ending October 23d, there were employed in and about this mine four miners, one carman, one engineer, and one foreman. The upraise has reached a height of 74 feet; progress for the week, 20 feet. The ledge is five feet wide. Work in this mine was temporarily suspended to-day.

#### COLORADO.

##### CHAFFEE COUNTY.

**HORTENSE.**—The *Leadville Democrat* says: This mine is located on Mount Princeton, three miles from Hortense, and is one of the most prominent mines in the Chalk Creek District. The mine was located in 1874, but for want of proper management was developed but very little. The mine is now the property of the Hortense Mining Company, of New York. It is worked by an incline 145 feet deep with three levels. Level No. 1 is in 170 feet; level No. 2 has reached a length of 80 feet; and level No. 3 is in 225 feet. All three of these levels are worked. A winze is raising to connect levels No. 1 and No. 3. During the past season, 100 tons of ore have been shipped to Leadville and Denver. The company has, during the summer, built houses for the workmen at the mine, ore-houses, etc., and a good road to Buena Vista, on which rates of toll have just been fixed. The company owns the Henry Altman and other claims joining the Hortense.

##### CLEAR CREEK COUNTY.

**COLORADO CENTRAL.**—The *Georgetown Miner* says: The Colorado Central has been doing a little better than usual the past few months, and a larger number of

lessees than usual are employed on the mine. The working force amounts to about 100 men, the lessees numbering about 60; the remainder consisting of contractors and day's-pay men. The fact that some of the lessees are doing well and paying a royalty of fifty per cent is a highly satisfactory indication.

**DUNDERBERG.**—The Georgetown *Courier* says that about 60 men are employed at the Dunderberg, the most of those underground being below A level. The concentrating mill has been overhauled lately—new rolls having been put in, the screens repaired, etc., and now it is treating about 25 tons of ore per day. A new pump has been added to the mill for the purpose of using the water from the jigs a second time, the gulch not furnishing a sufficient supply. The first, third, and fourth levels are being driven east, and the breasts are kept about 50 feet ahead of the stopers. In the breast of the first level, there are two veins of good ore; in the third is a foot of solid, and from six to twelve inches of scattered ore; and in the fourth there is a 6-inch vein of solid ore, carrying large quantities of gray copper. At the breast of A level, the crevice is somewhat broken up, a cross-vein having made its appearance, and the ore is scattered through the whole crevice. The stopes are looking well, especially those of the first and third levels. Two of the first level stopes show a 12-inch vein of ore, and the other shows a vein from eight to twelve inches thick, and two of the third level stopes show a vein averaging twelve inches.

**HERCULES & ROE.**—The Georgetown *Miner* says that since the superintendent returned from the East, affairs at the mine have assumed an unusually vigorous aspect. Large quantities of T-rail, which are hauling to the mine, and the fact that a new boarding-house is building at that point, indicate further development of the property and a prosperous winter.

**OLD DOMINION.**—The Old Dominion lode, which is the property of the Old Dominion Mining and Smelting Company, is located at Spanish Bar, a short distance above the Hukill. The *Miner* says: Work is progressing on a shaft which is 75 feet deep, a contract being let a week ago for fifty feet of sinking. The shaft shows a good body of iron and copper pyrites with some galena and zinc, the last assay giving 12 ounces of gold and 15 ounces of silver per ton, the assay value being \$264 per ton. Some of the concentrating ore treated at Golden a short time ago concentrated about three to one, the dressed ore yielding \$95 per ton.

**RED ELEPHANT.**—The *Courier* states that there are large bodies of pay-ore exposed in these mines, especially in the various workings of the White, below the seventh level of the Boulder Nest, and in the level which is driving on the Free America vein north from the Cleary adit.

#### GRAND COUNTY.

The properties of the Chicago & Middle Park Mining Company are described in the Georgetown *Miner* as follows: The Grand Lake mine is developed by a tunnel 42 feet long, striking the vein, which is 3 feet wide, containing sulphuret and silver glance. The Hurlburt mine has a shaft 23 feet deep. The vein is 9 feet wide and assays high in ruby silver and gray copper. The Morgan mine has a shaft 24 feet deep and a tunnel started and run in 18 feet. The Hurlburt mine has a tunnel 67 feet long. The company is running a cross-cut to open other veins discovered recently. This mine shows fine mineral from the top. The Hurlburt mine will be worked by contract this winter.

#### GUNNISON COUNTY.

The Mountain *Pilot* of the 21st ult., in speaking of the Ruby King and Forest Queen mines, says: At a recent visit to both of these mines, Col. Holt informed us that the mill returns for the past month show an average increase of 74 ounces per ton in the richness of the ore shipped between September 15th and October 15th. The first level on the Ruby King, which is running southward on the vein from the bottom of the shaft, is now in 61 feet beyond the hitherto extreme point of development in that direction. The ore-breast carries an average width of 3 feet 4 inches, the ore averaging about 420 ounces per ton. The cross-cut and tunnel, now in 100 feet, will cut the King vein 120 feet in depth, and the indications are that it has nearly reached the lead. Both mines will be worked steadily all winter. Yesterday, they struck, about 40 feet west of the original lead of the Queen, a parallel lead carrying ruby, brittle silver, and sulphurets.

A correspondent of the Denver *Tribune*, writing from Tin Cup under date of October 22d, says: A very rich and important strike was made last week on the Tin Cup claim, located on Gold Hill, and owned by parties in Kansas and Illinois. A vein, nearly five feet in width, of very high-grade ore, similar to that found in the famous Gold Cup mine, close to which the Tin Cup is situated, was uncovered.

The Wanderer's Last Chance, on American Mountain, together with two or three adjoining claims, has been recently sold to Michigan capitalists, and by them stocked for \$150,000. This mine was a true fissure-vein, and though its ore does not run very high in silver, it is very valuable for smelting purposes, as it assays above 70 per cent lead.

The Anna Mountain Mining and Smelting Company is the name of a company recently organized in Chicago, and its property is located on Anna Mountain, this district. The capital is \$3,000,000, with a working capital of \$50,000. It is the intention to develop the property during the winter, and the company will employ more than 40 hands.

The Leadville *Democrat* has the following: General Bearce, manager of the Gold Cup mines, is in the city, and in conversation stated that the mines were proving up magnificently, and that there were now many hundreds of tons of rich ore on the dumps. The shipping station has recently been changed to Buena Vista, to which place all the ores are hauled by team and then shipped to their destination by rail. The distance from the mines to Buena Vista, via the Cottonwood road, is 35 miles, and considerable difficulty has been experienced in securing teams for transporting the ores. Recently the severe snow-storm has also interfered to some extent. Mr. Bearce thinks the property will be capable of producing forty tons of ore per day with the present developments, if shipping facilities can be procured. At present, the ore is shipped to August R. Meyer & Co.'s sampling-works in this city, Mr. Meyer's terms being better than any offered by the valley smelters. The ore shipped up to date has averaged about \$270 to the ton.

#### LAKE COUNTY.

**ADLAIDE.**—This company has been constantly driving forward development on both the Adelaide and Terrible claims—the two locations that comprise the territory of the company. The ore of this company has been of rather low grade as an average, though some has been mined of fair quality. In the disputed ground between this company and the Argentine, there is known to exist a large amount of valuable ore.

**CHRYSOLITE.**—The Leadville *Herald* of the 30th ult. says: The gas has burst through the bulkheads, and it is about impossible to get into the main portion of the mine. The gas is spreading into the different drifts, and while it is believed no damage can occur to the main workings from fire, as the bulkheads will preclude that, the gas escaping through will keep the men from working, and consequently causes a vexatious delay. Every shaft on the Chrysolite was last night closed, except the Silver two and Colorado Chief two shafts. In Silver two connections, no gas yet exists, and a drift is driving to connect with the upcast shaft. At the Roberts shaft, the gas is bad, and two men were yesterday taken from it in an exhausted condition. The pump is running.

**DUNKIN.**—A fine vein of sand carbonates was lately struck in the Dunkin mine that gives assays of 450 ounces of silver to the ton and 50 lead. The manager states that nearly 300 tons of ore will be shipped from the mine this month, and it is of an average net value of \$100 per ton. The connection will soon be made of the drift running south, directly from the shaft toward the workings in the large ore-body discovered by the level that runs around. But a few feet remain to be driven, and ore has already been found in the face of the drift. He reports

the mine looking finely, and, in addition to the dividend to be paid on the first of the month, he has funds now for a second one, and a large surplus besides.

**EVENING STAR.**—The Leadville *Democrat* of the 27th ult. says: The mine has increased its shipments in keeping with the large amount of rich ore now exposed in its workings. Recent developments show an ore-body or vein passin; through the claim that seems to have a thickness of from 20 to 35 feet. The ore-body has been opened on the line of the Catalpa for a depth of 40 feet, and in several places on the line of the Morning Star, showing it to be about 30 feet thick. Several winzes sunk from the drifts in the Evening Star are down 24 feet, and still in mineral. During the past week, the shipments amounted to 360 tons, netting on an average \$52 per ton. Thirty-seven tons shipped in one lot averaged \$150 per ton. A fine ore-house and other surface improvements have also been made this month, which come out of the earnings of October.

**GLASS-PENDERY.**—Latest reports from this mine state that a great deal of new timbering has just been put in this mine, and the ore-shipments have consequently been somewhat lighter for some time past. The ore-house is now completely crowded with ore, and the shipments will be large for the next two weeks.

**HIGHLAND CHIEF.**—This mine, according to the Leadville *Democrat*, continues showing up well, and new ore-bodies are discovered as development work is carried deeper into the hill. The bodies of ores opened on the second and third levels are reported richer in silver and lead than those found above the tunnel level. While a great deal has been said about the low grade of the Highland Chief ore, it is evidently rich enough to pay handsome returns, and there is an immense body of it. The shipments for the present month will average 65 tons per day, the bulk of which goes to Grant & Co.'s works.

**MORNING STAR.**—Up to the 29th, for the month of October, the ore-shipments from this mine, as given by the Leadville *Herald*, had amounted to 1650 tons. The shipments for the past week have averaged 80 tons per day, and the manager says he will ship for October over 1800 tons of ore. The hoisting capacity is crowded to its utmost limit.

#### PARK COUNTY.

**LONDON.**—The Fairplay *Flume* states that many improvements have been made on this property since its purchase by the present company. Among the most notable is the erection of a large boarding-house, office, and ore-house, and a bunk-house with a capacity for accommodating 80 men. At the mouth of the lower tunnel, just started, ground has been graded for the erection of a commodious ore-house. This tunnel will cut the ore-vein at 400 feet from its mouth, at a depth of 900 feet, and is already exposing large quantities of good ore. The company employs 35 men at present, and so far this month has taken out 175 tons of ore, 24 of which have been shipped, and the remainder piled up at the mine awaiting treatment.

A correspondent of the Denver *Tribune*, writing from Park under date of October 25th, says: No specially large strikes have been made during the past week, but, notwithstanding the lateness of the season, sales are making. Among the most noteworthy is the transfer of the Corning mine to the North American Mining Company, or more familiarly known as the Fanny Barret Company. The Corning is a gold vein near Montgomery, and has recently shown some fine samples of gold quartz. A sale of a group of three mines in Mosquito Gulch is reported—the Juniata, Susquehanna, and Silver Giant. These claims all have mineral in such an accessible locality that the consolidation is a strong one.

#### SAN JUAN COUNTRY.

**MAID OF THE MIST.**—The Lake City *Silver World* says of this mine: The present development consists of a shaft 105 feet deep, sunk the entire distance in solid mineral. At a depth of 75 feet, the southwest drift is in 34 feet, with cross-cut, toward the hanging-wall, of 20 feet, showing mineral to be somewhat scattered. The northeast drift, on the same level, is in 20 feet, with cross-cut both ways 16 feet, showing 10 feet of solid mineral, and the vein to be at this point 18 feet between walls. A drift has been started from the surface, which, within 125 feet, will intersect the shaft 52 feet from the surface; the drift is now in over 100 feet.

**RED CLOUD.**—The same paper says that the superintendent of the Red Cloud reports that, at a depth of 115 feet in the shaft, a solid body of four feet of high-grade mineral—galena largely interspersed with gray copper and brittle silver—was struck. He estimates that it will mill-run 300 ounces of silver. It is the biggest strike yet made in this mine. With the mineral a heavy body of water was also struck, and the mine is making 150 gallons per hour. The storm prevented getting in sufficient pipe for the pumps, so that the water will have to be hoisted with the engine and buckets, which are adequate for the purpose. But the storm had a more serious result, in that but about half of the supplies are in, and, unless they can yet be delivered, there is only sufficient for twelve men about six or seven months.

#### DAKOTA.

The Black Hills Placer Company has completed its flume, and is hydraulicking about 12 hours out of 24, the water being too scarce to work two shifts.

**STANDBY.**—The Black Hills *Pioneer* is authority for the statement that all the property of the Standby Mining Company, of this city, has been attached, on account of a debt of \$5000, advanced by Elisha Riggs for the company, and the property being non-assessable, this was the only means in his power to secure the indebtedness. The property is tied up now till the April term of court, 1881, unless other and satisfactory arrangements are made in the interim. It seems to be a fight among the principal owners and managers of the corporation.

#### MONTANA.

The Butte *Miner* of the 28th ult. has the following notes of the mines in its vicinity:

**ACQUISITION.**—Although the water in the bottom of the two working-shafts prevents any further sinking with the present facilities, it is encouraging to note that the owners of the property are exerting themselves to give it the benefit of a thorough development at the earliest practicable moment. Yesterday, preparations were made to sink a new shaft about 100 feet south of the old workings. This shaft, for the sinking of which the first 100-foot contract has already been let, will contain two compartments, and will be sunk with a whim for the first 100 feet, after which, steam machinery will be put up for deeper development and another compartment added to the shaft. The ledge, it is expected, will be tapped at a depth of 250 feet. In the mean time, however, the other shafts will not remain idle. At a depth of 85 feet, or about 20 feet from the bottom, the two working-shafts, which are 70 feet apart, have been connected by a drift, which along its entire length shows a vein of ore varying in width from five to eight feet, and assaying from 65 to 100 ounces per ton. This quality and this width of ore are known to extend half-way from the level to the surface, and a force of men is now engaged in stoping and hoisting it to the surface. One hundred tons of ore have been shipped to the smelter during the past ten days, leaving 800 tons on the dump.

**ALICE.**—Until the elbow for the water column can be cast, thus permitting the extension of the 700-foot cross-cut, there will be nothing to make known in relation to the mine which has not already been published. On the 400 and 500-foot levels, operations are principally confined to the stopes, which are keeping the old mill supplied and increasing the surplus at the dump of the new mill, in the vicinity of which nearly 5000 tons are now piled. Considerable ore will soon be taken from the upper levels, it having been decided that, if the roasting apparatus of the new mill is not ready to start when the rest of the machinery is in working order, operations will begin on free ore, and continue until the roasters can be fired up.

ANSELMO.—On the 70-foot level, at a point in the west drift 100 feet from the main incline, a new shaft is raising to be used as a main shaft. It is now within six feet of the surface, and will probably admit the daylight before the end of the week. A whim, the timbers for which are already on the ground, will be at once erected and the shaft will be continued downward from the 70-foot level to as great a depth as can be attained without steam hoisting facilities.

BELL.—Sinking continues in the middle or whip-shaft, which yesterday attained a depth of 155 feet. About two weeks ago, when the shaft was but 140 feet deep, a cross-cut north was started from the bottom, striking the hanging-wall at a distance of 18 feet. Fourteen of this 18 feet across the ledge was found to be composed largely of copper pyrites, assaying about 35 per cent of copper and not less than \$30 in silver per ton. A two-foot streak about six feet from the shaft, however, was of a somewhat different character, carrying a much greater proportion of silver. It was at once determined to follow this streak, and the drift is now 25 feet long, and yields about five tons of ore per diem. In the east shaft, the appearance of the ledge is very satisfactory. The west drift from the bottom (160 feet deep) has been advanced to a length of 185 feet, and is expected to make connection with the whip-shaft within the next 30 feet. This will give abundant ventilation, and extensive stoping between the shafts, which are 210 feet apart, will at once begin. On the south vein, a small force is employed, but, owing to the softness of the ore, the output is considerable. About 300 tons of free ore, assaying on an average 35 ounces, are on the dump; and as soon as the Clipper mill starts up, regular shipments will be made and the working force increased.

MAGNA CHARTA.—At a depth of 206 feet in the main shaft, drifts north and south have been started, which have each attained a length of 25 feet. So far, no ore has been encountered. The north cross-cut is expected to tap the six-foot ledge which was passed through in sinking the shaft at a depth of about 65 feet, and the south cross-cut will tap the main ledge. It is possible that the two veins unite at a greater depth, and that the shaft is sinking in a horse between the two; but if this should not prove to be the case, they will be followed and separately developed.

NEVADA. COLUMBUS DISTRICT.

The True Fissure says of the two leading mines of the district as follows:

NORTHERN BELLE.—Only 12 feet were added to the length of the drift on the fourth level. Contrary to expectation, the ground continued hard until last Monday, when a different formation was struck which looks more favorable for ore. The usual amount of work is done in the other shaft levels, but there is no change worthy of note. In the levels above the adit, the stopes are looking well and the yield of ore is good. About 62 tons of ore are daily extracted and hauled to No. 2 mill at Belleville. This amount amply supplies that mill's capacity and adds a little to the surplus. The shipments of bullion for the week ending October 13th were \$14,729.61, and for the October account to same date, \$25,407.91.

MOUNT DIABLO.—Following is the report of the superintendent for the week ending this date: Work in and about the mine has progressed satisfactorily during the past week; drifts and stopes are producing the required amount of ore to run twenty stamps. Have now got good ventilation on the second level, and will be able to prospect to advantage.

COMSTOCK LODGE.

The Gold Hill News, in its week's summary of Comstock matters, contains the following: A great deal has been done along the Comstock since last report, yet the situation has not yet reached an exciting point. In other words, the required development has not yet been made. The situation is continually changing and advancements are making, and this report, which has been made with more than usual care, chronicles many important facts. In Sierra Nevada, the chief point of interest is a new departure on the 2500 level, to get at the ore-body found on the 2400 level, and cut in the winze below that level. Union has connected its shaft by its south drift, 2500 level, with the great thoroughfare from Ophir to Sierra Nevada. Winze No. 1 has really something better than heretofore, but the water bothers so that no one can yet tell positively what it is. Mexican, besides joining in important movements with her neighbors, starts off west on the 2500 level to see what is there. Ophir will now divide attention with Union. Ventilation will this week be secured for the 2000 level, and then it will be seen what the ore-vein there amounts to. That it will yield ore enough to run the mine is certain, and it may pay dividends by leading to the looked-for bonanza. Then the big winze way off east is about to commence letting light through three compartments into the interesting formation lying there, and which swings so heavily to the east and looks so like the mother of bonanzas, on the way north into Union. The big bonanza is yielding about 400 tons of ore per day. To be sure, the ore is not of high grade, but there are dividends in it if the present yield continues, as it bids fair to for some time. Chollar may be expected at almost any time to start up operations to the south and carry them into Potosi. Belcher is digging south on the 3000 level and drilling east again; and is preparing for more extended prospectings on the 2760 level, which has by no means been exhausted of its prospects. Alta has something on the 2050 level. The drill has demonstrated that fact, and the cross-cut must now tell what that something is. Assays of borings have run as high as \$40.

The Sutro Independent says that during the week ending October 22d, the header of the south lateral branch of the Sutro Tunnel was advanced 80 feet; total length of the branch up to that date, 2000 feet. The header has penetrated the Exchequer ground a distance of 320 feet, and has yet 44 86-100 feet to go, in order to reach the north line of the Alpha ground. The air there is excellent, and good headway is being made, there being an average daily progress of over 11 feet. The second section of sub-drain in the main tunnel has been completed, making a total length of 575 feet of completed drain, from the 16,550-foot point, where it will be remembered, the sub-drain was entirely completed to, some time ago. In the north lateral branch, a number of men are engaged in putting in staging, preparatory to extending drain-boxes to the Ophir drift and timbering.

WHITE PINE.

MARTIN WHITE.—The Ward Reflex of October 23d says: Cross-cutting was commenced in the Martin White main tunnel last week at a point 2600 feet from the mouth, on the south side of the tunnel. This cross-cut is headed for the old clay chamber, where a large body of ore was found in the upper workings.

UTAH.

The Silver Reef Miner of the 23d ult. says: The recent developments in the Leeds show a large body of fair-grade ore, and while the strike is not sufficiently determined to base estimates upon, we should not be surprised to hear of their mill soon again producing bullion.

The Salt Lake Tribune of the 27th ult. says: The new concentrating works at the Carbonate were started this week.

The Overland mine is situated about half a mile from the Stewart No. 2 mill, in Carr Fork. Little or no work so far has been done on this mine, except prospecting, and the result has been exceedingly gratifying. As far as exposed, the vein is well defined. The nature of the ore-bodies is a decomposed quartz, rendering it easy for milling, and is of a free character. The mine is 1500 feet in length by 200 feet in width, and the dip of the vein is northwest.

Muddy Gulch appears to be attracting attention. The Nast mine has recently been sold to some Eastern parties, who have a day and night shift at work. They have broken ground in the gulch for a new tunnel to tap the shaft. A distance of about 300 feet will have to be run, and they have already commenced sinking the shaft to meet it. When this work is ac-

complished, it will make this property valuable, as there is a fine vein of ore, but operations are impeded by water which this new tunnel will drain.

At a depth of 100 feet, a drift on the Rainbow mine is being run toward the Horn-Silver. The drift is in 30 feet, and the indications are favorable for striking ore soon. [They always are favorable.—Ed. E. & M. J.]

The ore-vein of the Nabob mine, at a depth of 50 feet, is a foot and a half thick. The ore that is taken out is exceedingly rich.

The Salt Lake Herald of the 28th ult. says: Among the most prominent and valuable mines discovered on the Bingham belt are the Jordan, Stewart Nos. 1 and 2, Essex, Mineral Point, Overland, Highland Boy, and Harriet. They all show vast bodies of gold ore. Capital and more enterprise are required to develop these mines [which have rarely if ever paid when worked].

The Bonham mine adjoining the Stewart No. 1, we learn, is to start up work soon. The ore is to be milled in the Stewart No. 2 mill. The mine has immense bodies of (? pay) ore in sight.

PROPOSALS AND SALES.

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

Table with 3 columns: Description of proposal, Name and address of party, and Date. Includes items like 'Two Hundred Tons of Anthracite Coal', 'Removal of Wreck from Bulkhead Shoal', 'Slatting required for the Roofs of the U. S. Post-Office', etc.

Excavation of a Tunnel, 3300 feet long, the Partial Timbering of the same; also, the Excavations of the Approaches near Gould's Station on the Line of the P. C. & St. L. RR.; M. J. Becker, Chief-Engineer's Office P. C. & St. Louis Railroad Company, Columbus, O. Construction of an Iron Superstructure across the Mississippi River at Plymouth; Andrew Rinker, City Engineer's Office, Room 4, City Hall, Minneapolis, Minn. " 24, "

Iron-Workers Competing.—WASHINGTON, D. C., Nov. 4.—Bids for the iron work on the roof of the north wing of the new State, War, and Navy Department Buildings were opened to-day by Col. Casey as follows: Dwight & Hoyt, Springfield, Mass., \$87,100; Phoenix Iron Company, Trenton, N. J., \$90,993; Bartlett, Haywood & Company, Baltimore, \$75,517; Passaic Rolling-Mill Company, Paterson, N. J., \$80,645; J. B. & J. M. Cornell, New York City, \$72,130; Phoenix Iron Company, Philadelphia Pa., \$81,334. The awards have not yet been made, but will, it is understood, be given to the lowest bidders.

ASSAY DEPARTMENT OF THE ENGINEERING AND MINING JOURNAL.

This department is opened for the benefit of miners, prospectors, and others interested in minerals. Replies will be made in these columns, and without charge, to questions asked regarding the nature and commercial value of minerals, and of samples sent. Assays determining the actual composition and value of ores will be made at the following rates. All assays are made with the utmost care by the most experienced and competent assayers:

Table with 3 columns: Assay for gold, Assay for copper, Assay for iron. Includes sub-rows for silver, lead (wet), zinc, nickel, and cobalt.

The amount should invariably accompany the order, and expressage or postage must always be prepaid.

Communications, samples, etc., to be addressed to ENGINEERING AND MINING JOURNAL, 27 Park Place, New York (P.O. Box 4404).

## FINANCIAL.

## Gold and Silver Stocks.

NEW YORK, Friday Evening, Nov. 5.

There has been but a small business done during the week under review, and prices have been weak. There is, however, very much more confidence in mining securities than there was, and when the public gets fairly down to business once more, a better condition of affairs may be looked for. There has been a set-back in the stocks of companies in which the public has actually invested, and now there are real bargains obtainable. In addition to this, a number of mines that were robbed to further speculative ends, are now being put into position for earning dividends once more so that the outlook favors improvement in the shares which are likely to be dealt in. There may be some failures to follow, but these will be exceptional for some time to come.

The Comstock shares have been very quiet and a little weak. California, with sales of 905 shares, ranged between \$2@1.90. Consolidated Virginia has been quiet and weak, the sales amounting to 2840 shares at \$2.75@2.60. Consolidated Imperial has been very quiet and steady, the sales aggregating 300 shares, at 19c. Leviathan has been quiet and steady, with sales of 500 shares at 19c. Mexican only records sales of 150 shares at \$8.50. Union Consolidated has been very quiet, but a little stronger, the sales amounting to 75 shares at \$10½@11½.

The Bodie stocks have also been very quiet, but are without particular feature. Bodie has been quiet and strong, with sales of 200 shares at \$3.90@4.10. Standard has been quiet but weak, the sales aggregating 1870 shares at \$26½@24. Bechtel only records sales of 100 shares at \$1.40. Bulwer has been quiet at irregular prices, the sales aggregating 350 shares at \$1.20@1.30@1.25. Goodshaw has had a fair business at stronger prices. The sales amount to 6675 shares at 54@70c. May Belle only records sales of 500 shares at 16c. North Standard records sales of 100 shares at 35c., and South Bulwer 1400 shares at 50c. South Bodie records sales of 400 shares at 8@9c.

The Tuscarora stocks have been quiet and steady. Belle Isle, with a fair business, has been strong. The sales amount to 1875 shares at 55@95c. Grand Prize has been quiet and steady, the sales aggregating 550 shares at \$1.95@2. Independence has been quiet and a little weak, the sales amounting to 800 shares at 50@45c. Navajo has had a fair business at irregular prices. The sales aggregate 5950 shares at 75@65@95c. Tuscarora has been liberally dealt in at weak prices. The sales amount to 6500 shares at 13@19c. North Belle Isle only records sales of 1300 shares at 35@40c.

The San Francisco stocks have been quiet and steady. Eureka records sales of 50 shares at \$17, and Caledonia, B. H., 400 shares at \$1.85.

The dealings in the stocks on our regular lists have been as follows: Amie has had a fair business at weak prices, the sales amounting to 117,850 shares at 59@39c. Chrysolite has been fairly dealt in at irregular prices. The sales amount to 11,925 shares at \$6.13@7@26.25. Copper Knob only records sales of 500 shares at 60c., and Findley 700 shares at 32@30c. Great Eastern has been liberally dealt in at irregular prices; the sales aggregate 18,700 shares at 54c@58c@56c. Green Mountain has been quiet and strong, the sales aggregating 2500 shares at \$4.40@4.80. Homestake has been quiet at stronger prices; the sales amount to 325 shares at \$30@31½. Horn-Silver only records sales of 200 shares at \$14¼@13¾. Hukill has been moderately active at weak prices, the sales aggregating 12,400 shares at \$1.85@1.70@1.75. La Plata records sales of 50 shares at \$5. Leadville has been fairly dealt in at stronger prices, the sales amounting to 2013 shares at 45@49c. Little Chief has been quiet and weak, the sales aggregating 1980 shares at 95c.@1.25@93c. Little Pittsburg has been quiet and weak, the sales amounting to 1084 shares at \$2.50@1.70. Moose has been active and irregular, though strong at the close. The sales amount to 11,050 shares at 54@57c@65c. Ontario has been very quiet and a little weak, the sales aggregating 200 shares at \$32¼@32. Plumas has been quiet and strong, the sales amounting to 830

shares at \$1.20@1.50. Rising Sun has had a fair business at stronger prices. The sales aggregate 3100 shares at \$1.75@2. Stormont, which has been dealt in on the market for the first time this week, has been quiet and strong, the sales aggregating 1200 shares at \$3.25@3.63. Alta-Montana has been quiet and steady, with sales of 550 shares at \$1.30@1.25. Alice records sales of 150 shares at \$6. Battle Creek has been quiet and weak, the sales aggregating 1200 shares at \$5.50@4.95. Bald Mountain records sales of 6000 shares at 17@16c. Bonanza Chief has had a fair business at steady prices. The sales amount to 2800 shares at 26@27c. Bull-Donningo has been quiet and steady with sales of 500 shares at \$5.25@5.50. Boston Consolidated has been moderately active at weak prices. The sales aggregate 2900 shares at \$1.40@1.25. Calaveras has been active and weak, the sales amounting to 66,600 shares at 30@21c. Central Arizona has been quiet and irregular, the sales aggregating 1700 shares at \$8¾@7¼@8. Columbia Consolidated has had a fair business at irregular prices. The sales amount to 3300 shares at \$1.20@1.35@1.30. Crowell only records sales of 100 shares at 10c. Durango has been active and weak, the sales aggregating 36,500 shares at 38@30c. Girard has been quiet and weak, the sales amounting to 600 shares at \$2.50@2.10. Iron Silver records sales of 500 shares at \$2.75. Malachite has had a fair business at weak prices. The sales amount to 1500 shares at \$1.60@1.45. Mayflower records sales of 200 shares at 45c. Miner Boy has been active and irregular, the sales amounting to 8500 shares at \$1.05@97c.@1. The Quicksilver stocks have been quiet and a little weak. Preferred records sales of 400 shares at \$52@50, and Common, 100 shares, at \$13. Rappahannock has been quite active and a little weak, the sales aggregating 1100 shares at 26@23c. Red Elephant only records sales of 500 shares at 35c. Silver Cliff has had a fair business at weak prices. The sales amount to 4125 shares at \$3@2.15. Silver Nugget has been very active, and, at one time, was strong, but lost it at the close. The sales aggregate 44,500 shares at 20@28@22c. South Hite has been quiet and irregular, the sales amounting to 5000 shares at 82@80@78c. Sutro Tunnel has been moderately active at weak prices, the sales aggregating 2050 shares at \$1.25@1.10. Unadilla has been active and steady, the sales amounting to 17,200 shares at 16@15c. Vandewater has been active and weak, the sales aggregating 8850 shares at \$1.15@1.30@1.10. American, which has been dealt in for the first time on this market, has been quiet and weak, with sales of 200 shares at 52@45c.

The dealings in the fancies have been as follows: American Flag, 400 shares at 33c.; Buckeye, 5400 shares at 20@19c.; Dhalonega, 5200 shares at 12@10c.; Granville, 1500 shares at 9@8c.; Lacrosse, 5600 shares at 31@29c.; Lucerne, 3100 shares at 16@15c.

## UNLISTED QUOTATIONS.

Messrs. Trask & Francis, under date of November 5th, 3 P.M., report the current quotations of unlisted stocks as follows:

	Bid.	Off'd.		Bid.	Off'd.
Breece.....	\$0.50	\$0.55	North Hite.....	.77	.78
Bald Mountain..	.18	.20	Telegraph Con..	4.00	5.00
Cherokee.....	1.70	1.80	Hortense.....	—	.40
Carbonate Hill..	.20	.25	May Flower.....	.40	.45
Empire, Utah..	3.00	3.40	New Phil.....	—	.50
Father de Smet..	6.75	7.75	O. K. & Winn....	—	.80
Freeland.....	2.00	2.50	Sir Rod'k Dhu..	—	.30
Highland Chief..	10.00	11.00	Standby.....	—	1.50
Patagonia.....	—	1.00	Stormont.....	3.60	3.75
Santa Cruz.....	—	1.00	Spring Valley..	4.75	5.00
Centennial.....	3.00	—	Silver Nugget..	.21	.22
Sacramento.....	—	3.00	Trinity.....	—	1.50
Belmont.....	1.50	2.25	VandeWater G..	1.00	1.05
Lowland Chief..	.25	.50			

A meeting of the board of directors of the Boston Mining and Stock Exchange was held at the rooms of the Exchange, 95 Milk street, Boston, on the 2d inst., to show their respect to the memory of the late Hon. John T. Clark, Vice-President of the Exchange. Edward H. Goff, President *pro tem.*, occupied the chair. Remarks were made by different members of the board eulogizing the character and personal worth of Mr. Clark, and the following resolutions were unanimously adopted:

*Resolved*, That in the death of the Hon. John T. Clark, late Vice-President of the Boston Mining and Stock Exchange, we have lost an efficient officer, an honorable business man, and a genial, social gentleman, one whose loss will be deeply felt by all connected with this board, and whose place it will be difficult to fill.

*Resolved*, That we express our sincere sympathy with

his afflicted family in this hour of their great bereavement.

*Resolved*, That these resolutions be entered upon the records of this board, and that our clerk be instructed to send a copy of the same to his family.

*Resolved*, That this board attend the funeral as a mark of respect to his memory.

The following Board of Directors was elected by the stockholders of the Chrysolite Silver Mining Co., at the annual meeting held in this city on the 3d inst.: Rossiter W. Raymond, Abram S. Hewitt, Walter S. Gurnee, Daniel S. Appleton, Thomas C. Platt, H. A. V. Post, James H. Banker, William Borden, Charles Francis Adams, Jr., S. V. White, and E. Z. Lawrence. This management is not only competent but honest, the latter qualification being as essential as the former. The mines of this company will hereafter be worked in the true interests of the stockholders, and not to enable a few operators to make a "turn." It is a question if the recent wild speculation in mining stocks and mines has not been of great benefit to legitimate mining. The public has learned to appreciate mines at something like their real value, and it has also learned the requisites for making a success of a really good mine when one is found. The change in the management of the Chrysolite mine is only the beginning of a movement which will have to be followed by a very large number of other companies already on this market. Had the Chrysolite group of mines been worked as any conservative management would have worked it, instead of for the purpose of advancing the price of the stock to a figure far beyond its real value, and then unloading it upon the public, there would have been steady dividends though not so large; the price of the stock would have advanced to a moderate figure, and remained there; dividends would still be declared regularly, and, with proper attention paid to "dead" work, the reserves would now be of a very encouraging nature.

Our limited space will only permit us to make extracts from the reports of the officers of the Chrysolite Silver Mining Company, which we received at a late hour. From the report of Dr. R. W. Raymond, President, we quote the following:

On the first of August, when the present Board investigated the condition of the company, it was, as nearly as could be ascertained, \$376,271, less the value of 288 tons of ore on hand, which subsequently proved to be about \$16,650. Nearly all of this large indebtedness was drawing interest, say \$175,000 at 10 per cent per annum, \$100,000 at 6 per cent, and about \$50,000 at 1¼ per cent monthly.

At the same time, the most unfavorable rumors were in circulation concerning the mine. It was freely asserted that the company could not pay its debt; and since almost the whole of the debt was payable on demand or consisted in over-due obligations, the attachment of the property by creditors was confidently prophesied.

Arrangements were made with the creditors to accept pro rata payments from the earnings of the mine; and every endeavor was made to pay off the debt. For this purpose, the prospecting work in the mine was restricted, though not wholly stopped, and a considerable number of men was discharged. About the first of October, the debt was practically all paid, and authority was at once granted to the manager, in accordance with his earnest request, to reduce the output of ore and devote a larger part of his force to the opening of new ground in the mine. Mr. Keyes, the General Manager, resigned his position August 3d, and, on the 12th of August, receiving news of dangerous illness in his family, turned the mine over to the charge of Mr. Marden, the Financial Agent, and left Leadville for San Francisco. On the 1st of September, Mr. Charles M. Rolker was appointed General Manager, and, arriving at Leadville on the 10th, took charge of the mine. Mr. A. Eilers was at the same time appointed Consulting Engineer.

As to the future prospects of the mine, little can be added to the general statement published by order of this Board, October 15th. When operations were interrupted by the fire, there were promising exposures of rich ore in several workings, and in directions previously asserted to be barren. But these bodies had not been sufficiently explored to be measured. The product since August 1st had been taken mainly from the neighborhood of the Roberts shaft, and the ground between that shaft and the Little Chief boundary line on the east. The latest developments indicate the extension of the ore, north, south, and northwest. Since in these instances ore has been found above or below the levels of the mine, the barrenness of which last summer led to the assumption, on the part of some, that the ore-body had come to an end, it is evident that the fact that a horizontal level in any part of the mine has entered barren ground is not proof that the ore-deposit may not continue above it or below it, and certainly every part of the large unexplored property of the company, and particularly the interior of the mine circumscribed by the present workings, should be thoroughly explored. Various estimates of the probable value of the latter area have been made heretofore on the hypothesis that the ore-deposit exposed in such richness and thickness on the four sides would be found to be more or less continuous through it. At the present time, this question remains unsettled. The indications last July were deemed by many unfavorable to a continuance of the ore. They are now favorable. This is all that can be said at present, as the conclusion to be drawn from the latest report of the General Manager.

As to the large area belonging to the company entirely outside of the present workings, it is impossible to speak with certainty. The only late development concerning it is the fact shown by the underground workings from the Roberts shaft that the ore is extending north and northwest.

It is the purpose of the present management, if re-



tained in control of the company's affairs, to keep exploration sufficiently in advance of extraction to prevent surprises; to maintain a sufficient surplus on hand for a working capital and for necessary dead-work or improvements, thus avoiding the borrowing of money; to conduct the business as a business, without reference to the interests of speculation in the stock; and to pay dividends from the earnings of the company when the money has been earned and can safely be divided. The stockholders in a mining enterprise must take the usual risks of mining. Expectations, however well grounded to all appearance, may be disappointed by the developments of a business which is necessarily in more than one sense carried on in the dark. But unnecessary risks should not be added. The Chrysolite Silver Mining Company possesses a magnificent property, which has already yielded from a small fraction of its total area a magnificent profit. It is believed that with greater care, economy, and prudence hereafter, the prosperity of the past may be restored on surer foundations.

Charles M. Rolker, General Manager, makes the following report under date of October 27th:

The amount of ore mined for account of Chrysolite Silver Mining Company, of New York, from October 10th, 1879, to October 6th, 1880, and sold to smelters, and money received up to that date, amounts to 33,993 1092-2000 tons, which netted at the smelters \$2,302,371.74, giving a value received from smelters of \$64.79 per ton of ore mined.

The total expenses incurred in mining this ore and transporting it to smelters are \$728,696.29, or a cost per ton of \$21.14.

The number of tons of ore sold to smelters from October 6th, 1880, to October 24th, 1880 amounts to 659 500-2000 tons, which netted at smelters \$46,072.10, or a net smelters' value of \$69.88 per ton of ore. Of these 659 500-2000 tons, the quantity of ore assorted from the waste dumps and sold to smelters amounts to 210 1295-2000 tons, which were sold to smelters for \$3212.13, showing a net price obtained from smelters of \$15.25 per ton.

The total amount of ore sold (apart from these dump sortings) from October 10th, 1879, to October 24th, 1880, is 34,442 387-2000 tons, which gave net smelters' price of \$2,245,231.71, giving a net value per ton of \$65.19. Including the dump-sortings, the total is 34,652 1682-2000, netting \$2,248,443.84 or \$64.69 per ton.

The amount of ore unsettled for, but in smelters' hands, October 24th, was 125 861-2000 tons, which is ore assorted from the waste dumps. This will be settled for before the end of the month.

The extent of the workings in the mine is as follows:

	Made by former owners,	Made by this company,	Total.
Linear feet of drifts...	3,280	7,370	10,650
Linear feet of winzes and raises...	3,553	428	5,084
Linear feet of shafts...		1,103	5,084
Total	6,833	8,901	15,734

Average per month made by this company, irrespective of the section of workings, since October 10th, 1879, in linear feet..... 741.7  
Area of ground stoped and producing..... 1.9 acres  
" " " " opened..... 2.84 " " within extreme limits of openings..... 8.2 "

The drifts included in the above statement are only those which are used or have been used for tramways.

The average number of men on the monthly pay-roll from October, 1879, to October, 1880, was 534 5-6, including those who worked part of the time. During September, 1880, our regular working force was toward the end of 250 men, instead of 350 men at the commencement of the month. Since the occurrence of the fire, I have inaugurated the ten-hour system in place of the eight-hour shift, which was in force when I came here. On this basis of ten-hour shifts, I expect 200 men per day will suffice for our ore extraction and a moderately vigorous system of prospecting.

On October 4th, a fire started in the old shaft-house of Vulture I., which was being used, and had been used ever since the strike, as a sleeping-house for men. It originated through the carelessness of a man, who left, according to his own statement, a candle burn, while he dropped off to sleep. The fire spread down Vulture I. and the adjoining cribbing, being sucked down by the Eaton shaft air-current. It has since spread, say covering Sections I., 25 and 29. Its farther extension into the mine proper is impossible, in my judgment, as we have guarded against it by bulk-heads, which are marked on the accompanying map. Access to any part of the burnt district is at present prevented by the smoke and gas generated from smoldering sticks. Portions of the ground, of course, have caved, in consequence of the supporting timbers being burnt out. The main damage caused by the fire is the incurred delay in ore extraction and the actual amount of wages paid in putting the fire under control, involving the closing and opening up of the mine and bulk-heading the same. These expenses have been covered by ore assorted from the dumps.

The mine proper looks better to-day than when I took charge on the 11th ultimo. I beg to call especial attention to the north prospect drift, 3 sets high, from lowest level, in B 32, east of shaft. Likewise the drift 4 sets high, in same section and direction. Both are cutting fine sand 18 inches thick—a new development. The second level, in the same direction and section, puts new pockets of sand and hard carbonates.

The drift in B 29, 4 sets high, east of shaft, going south, is cutting a body of very fine sand carbonates, which is dipping downward. We have followed it downward for two sets. It appears like a new body, making under the old stopes. The drift in D and E, 32, going south and north, reveals continuous and fine sand, 2 feet thick. The drift on C, 32, going west, shows a face of 8 feet of fine sand carbonates. The north prospect drift in C, 32, has appearance of striking ore soon. I look for continuous ore east of the Roberts shaft and south of it, up to our present workings, and to connect with workings southwest of shaft, which show the same character of ore. Ore shows about one foot thick in the late cut made in the middle of the second north drift, west of Roberts shaft, on the lowest level. Also in the corner of the same drift, at the point of intersection with the first drifts running parallel to the main west drift to the north. The mine, on the whole, as I have said before, shows more and better ore-faces than it did forty-five days ago.

Ground well worthy of exploring is the ground north of our north drifts, also the general northwest direction from Roberts shaft, where I expect to cut the ore-way again on a downward dip; furthermore, the ground south of Roberts shaft, and the Vulture and Muldoon properties. In the short time allotted me to prepare this report, being

pressed by our extra work at the mine, it has not been possible for me to render a fuller account, and you will pardon incomplete data. For the financial data, I am indebted to Mr. Marden, the financial agent; for the map and its data, to Mr. George H. Robinson, our surveyor.

CHRYSLITE SILVER MINING COMPANY—TREASURER'S STATEMENT.

Financial Statement, October 17th, 1879, to October 30th, 1880.

Cash received from smelters: T. For ores, smelted to date... 34,652		
Chrysolite Silver Mining Co. (subscriptions).....		500.00
General expense account, Leadville:		
Salaries..... \$21,416.61		
Stationery, rent, stamps, etc.....	7,831.12	
Exchange, \$1538.48; interest, \$6317.79.....	7,856.27	
Insurance, \$355; damages, \$350.....	705.00	
		\$37,809.00

Mining expense account:		
Labor.....	\$456,182.57	
Ore hauling.....	38,185.08	
Timber and lumber.....	57,754.93	
Iron, steel, hardware, powder, fuse, candles, etc.....	44,184.94	
Pumps, \$640; machinery, \$1938.....	2,878.00	
Legal expense.....	2,500.00	
Feed, freight, assays, etc.....	14,661.81	
		616,347.33

Permanent improvement account:		
Engine.....	\$6,200.35	
Hoister, boiler, pipe, and rope.....	4,034.80	
Shafting, lumber, piping, repairs, painting, etc.....	4,418.33	
Roberts shaft.....	30,208.30	
Office and assay fixtures.....	2,927.93	
Saw-mill, \$581.49; Boiler, \$1750.....	2,331.49	
Chrysolite shaft, IV.....	859.19	
		50,978.39

Extraordinary expense account:		
Contingencies.....	\$450.00	
Guard duty.....	8,352.50	
Meats, groceries, bread, etc.....	5,860.12	
Cook, stewards, waiters.....	1,067.65	
Superintendent, livery, etc.....	347.00	
Board for watchmen.....	66.10	
Guns, side-arms, ammunition, etc.....	1,262.00	
		\$17,405.37

Less board collected.....	\$2,275.44	
Realized from sale of guns.....	45.00	
		2,320.44

General expense account, New York:		
Rent, furniture, stationery, etc.....	\$4,058.50	
Central Trust Company.....	3,500.00	
Mining Trust Company.....	1,750.00	
Interest account.....	9,648.29	
Expert account.....	7,350.00	
Unsettled claims.....	20,853.94	
		47,160.73

Legal expense account:		
Examining titles, copying, etc.....	2,819.07	
Advertising account:		
Cards, etc.....	\$4,693.36	
Dividend.....	3,018.01	
		7,711.37

Purchased property acct		
Dividends paid, six months.....	1,100,000.00	
Due by Arthur Sewell.....	50.00	
Due by Sen. John P. Jones.....	50.00	
Unsettled claims.....	20,853.94	
Expense, incorporation Cash in New York.....	41.50	
Cash in Bank of Leadville.....	73,591.87	
		23,942.80
		\$2,269,797.78

Assets and Liabilities, October 30th, 1880.

ASSETS.	
Cash.....	\$97,534.66
Chrysolite Silver Mining Company "property".....	9,999,500.00
Leadville office.....	9,489.60
Purchased property account.....	294,209.99
Arthur Sewell.....	50.00
Sen. John P. Jones.....	50.00
American Exchange National Bank.....	833.33
	\$10,401,687.58

LIABILITIES.	
Capital stock.....	\$10,000,000.00
Suspense account.....	239.50
Unsettled claims.....	20,853.94
Profit and loss.....	380,574.14
	\$10,401,687.58

Unsettled claims:  
Drake De Kay, for services as Secretary.—\$5,853.94.  
H. C. Gardiner, bill for legal services.—\$15,000.00.

NOTE.—The above statements do not include several items of which telegraphic advices have been received; but the exact accounts by mail have not come to hand, namely, about \$2500 additional receipts from smelters; 143 tons of ore on hand unsettled for; and the disbursements of the Leadville office for October, estimated at \$17,500.

The "unsettled claims" in the above statements have not been recognized, and still await examination by the Board of Trustees.  
DUMONT CLARKE, Treasurer.

OFFICIAL LETTERS.

Bull-Domingo.—A telegram, dated November 2d, states that the winze from the cross-cut is in 14 feet of good ore and looks well.

Boulder Consolidated.—A telegram from the superintendent states, that a fine body of ore has been struck in both the east and west drifts.

Boston Consolidated.—The superintendent of this company reports, October 24th, that the last 12 feet of drift run in north 300 level has brought great change in appearance of both vein and wall rock, having changed from a reddish cast to a blue-black, and while formerly without moisture, now being quite wet, with a freer percolation of water, indicating the near approach to a large body of quartz. The west branch of the vein we are following gives average assays from \$28 to \$59 per ton.

Canada Consolidated.—The superintendent, writing under date of October 30th, says:

Both levels are progressing fast, and about the middle of next week the contract will be finished. The vein on the 140-foot levels—where we are working—is fully six feet wide, carrying fully 30 per cent of mineral, the richest that ever came out of the mines. I am confident it is more than double as rich as the ore of the 70-foot levels. The shows of free gold are the largest and most frequent I have ever seen coming out of the mine; and in order that you may judge for yourself when you come over, I am having all the ore coming out of the 20 foot piled separately, so that you can form a correct idea of the quantity as well as quality.

The dam is finished and is one of the best ever went up on the Moira. There is water enough in the Moira at present to run 150 stamps under a twenty-foot head.

Chrysolite.—A dispatch, dated Leadville, October 30th, says:

A cave near the upcast for upward drought shaft, called Colorado No. 2 shaft in this mine, has cut off the drought, and all the men were driven from the mine Thursday. All gas has again penetrated through the bulk-heads, and extends throughout the mine. The pump in the Roberts shaft is again working. The water is now twelve feet below the second level. An engine has been put up on Silver No. 2 shaft, and a drift is now being run directly to the up-cast shaft, so as to again start a current of air.

Cherokee.—A dispatch from this mine states that an eight-foot vein has been struck in the Garfield shaft, and that the mill is running in good style; also that the Green Mountain Company's is running well.

Dunderberg.—About 61 men are now employed at this mine. The concentrating mill has been overhauled and is now treating 25 tons of ore per day. The mine is said to be looking well throughout the various workings.

Dunkin.—The manager of this mine telegraphs: Shipments during October, 308 tons. Mine looking better than ever. Struck ore in south drift, 1st level.

Deer Isle.—This company's property is located in Maine. A recent dispatch from the superintendent reads as follows:

Continuing drift on 100-foot level and taking out good ore. Shall ship second cargo to England next week. We have now over \$200,000 worth of ore in sight at London net prices.

Day.—The ore now being extracted from this mine, it is stated, is to defray the expenses of prospecting purposes. The workings on the 460 level are said to disclose fine bodies of ore.

Eureka Consolidated.—The superintendent's weekly letter states that both furnaces are running smoothly with the usual ore-supply. There is no change worthy of note in their various workings. New shaft is down a depth of about 550 feet.

Freeland.—A recent letter states that the concentrating mill has been running only about half capacity, which is caused by the contemplated erection of reduction works, where ore may be treated instead of shipping or selling it to smelters. This, it is thought, will save at least \$10 per ton. The mine has large reserves, with sufficient ore developed to produce 100 tons daily. Parties controlling the property own over three quarters of the capital stock, and they are endeavoring to conduct the business for the best interest of all concerned.

Grand Prize.—Letter of the 22d says: East drift, 500 level, extended 17 feet; no change; east drift front ledge, 600 level, now in 49 feet. The ground getting softer, indications are, that we are near cross-course 500 level; it was 20 feet through or in thickness. The 500-level stopes are producing some good ore.

Harshaw.—A recent dispatch from the mine manager says that at present the ore running \$50 per ton would feed the mill for about two months, and that thereafter the mine would produce thirty-ounce ore. The dispatch closed with the remark that the hope of the mine was in new openings. Of course, thirty ounces chloride ore must be pretty closely worked to make it pay in Southern Arizona.

TUCSON, ARIZ., Nov. 4.—We learn that the hoisting-

GENERAL MINING STOCKS.

Dividend-Paying Mines.

Table with columns: NAME AND LOCATION OF COMPANY, Feet on Vein, Capital Stock, SHARES (No., Par Val), ASSESSMENTS (Total levied to date, Date and amount per share of last), DIVIDENDS (Total paid to date, Last Dividend), HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE (Oct. 30, Nov. 1, Nov. 2, Nov. 3, Nov. 4, Nov. 5), SALES.

Non-Dividend-Paying Mines.

Table with columns: NAME AND LOCATION OF COMPANY, Feet on Vein, Capital Stock, SHARES (No., Par Val), ASSESSMENTS (Total levied to date, Date and amount per share of last), DIVIDENDS (Total paid to date, Last Dividend), HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE (Oct. 30, Nov. 1, Nov. 2, Nov. 3, Nov. 4, Nov. 5), SALES.

g. Gold. Silver. s. L. Lead. c. Copper. \*Non-Assessed. †Assessment paid. ‡Dividend. Total shares sold during the week, 485 682.



COAL STOCKS.

Table of Coal Stocks with columns for Name of Company, Capital Stock, Shares, Par Val, Last Dividend, Rate per Ann., and Quotations for Oct 30, Nov 1, Nov 2, Nov 3, Nov 4, Nov 5. Includes companies like Am. Coal Co., Buck Mt. Coal, Col. C. & I. pr., etc.

Of the sales of this stock, 67,806 shares were sold at the Philadelphia Stock Exchange, and 84,725 at the New York Stock Exchange. Total Sales..... 517,473.

BOSTON MINING STOCKS.

Table of Boston Mining Stocks with columns for Name of Company, Shares, Par, and Quotations for Oct 29, Oct 30, Nov 1, Nov 2, Nov 3, Nov 4. Includes companies like Allouez, c., Atlantic, c., Aztec, Blue Hill, c., Brunswick, etc.

the Boston Mining and Stock Exchange this week, and prices of the leading stocks continue to advance. Boston Gold and Silver touched \$3.30 to-day, and North Castine \$2.95. Several new stocks have been added to the list, which bid fair to be active, the lots offered being taken at advanced prices.

Coal Stocks. NEW YORK, Friday Evening, Nov. 5. A very active market is recorded for these stocks during the past week, and, although there has been a break caused by election-day, the sales aggregate 517,473 shares, as against 589,672 shares for the previous week. The prices, as a rule, have been very irregular, but buoyant. Delaware & Hudson, on sales of 18,375 shares, has fluctuated between \$86 1/4 @ \$88 3/4.

appointed by the managers of this company to confer with the English interest is as follows: Messrs. J. B. Lippincott, J. V. Williamson, Eckley B. Cox, J. H. Pratt McKean, Moses Taylor, or a representative he may name, Charles H. Rodgers, Isaac Hinckley, Frederick Fraley, and Thomas Cochran.

Delaware, Lackawanna & Western touched par this week, selling on Wednesday at \$100 1/2, but falling off, sold as low as \$96 3/4 yesterday. The sales have amounted to 153,400 shares. New Jersey Central sells at its lowest price, \$75 to-day, as against \$78 Wednesday. The sales amount to 77,635 shares.

The transactions in the minor stocks have been but few, and are pretty evenly distributed.

Miscellaneous Stocks and Quotations. Sales and quotations of the stocks and bonds dealt in at New York, Philadelphia, and Baltimore, for the week ending the 5th inst., are given in the following tables. The Philadelphia quotations will have a \* affixed. The Baltimore quotations are indicated thus †

Table of Stocks with columns: STOCKS, Par Value, High'st, Lowest, Closing, Sales: Shares. Includes St. L. & M. & S. R. Co., Cambria Iron Co., Penn. Salt Mfg. Co., etc.

Table of Bonds with columns: BONDS, Price, When Due, Int. est. When Due, High'st, Lowest, Amount. Includes D. L. & W., 7s, conv, 1907 M. & S., M. & E., 1st con., 7s, 1915 J. & D., etc.

BULLION MARKET.

Table of Bullion Market with columns: DATE, London, N. Y., DATE, London, N. Y. Includes rows for Oct 30, Nov 1, Nov 2 and corresponding prices in Pence and Cents.

all the past week, at the figures given in the annexed table, and without any indications as to the immediate future of the market.

BULLION SHIPMENTS.

We give below a statement showing the latest published bullion shipments, in addition to those announced in our issue of October 30th :

Table of bullion shipments from various locations including Northern Belle, Paradise Valley, Gold Hill, Salisbury Mine, Manhattan, Tombstone, Northern Belle (1 week), Eureka, Independence, Eureka passing, Richmond, Wagontown Mill, Star, Nevada City, Mount Diablo, Boston & Colorado Works, Bodie, Christy, Butte, Ontario (one week), Morgan, Ontario (a), Mammoth (a), Richmond, Christy (a), Barbee & Walker, Morgan, Ontario (a), Horn-Silver (a), Stormont, Eureka, Germania, Ontario (a), Horn-Silver (a), Crismon-Mammoth, Hillside, Lion, Central City, Tintic, Richmond, Ontario (a), Horn-Silver (a), Stormont, Barbee & Walker, Eureka Con., Standard, Bodie, Noonday, Contention, Perry, Stormont (a), Tintic, Ontario, Horn-Silver (a), Marsac, Crismon-Mammoth (a), Stormont (b), Stormont, Rappahannock, Stormont.

(a) Received at Salt Lake City. (b) Received in this city.

ARIZONA.

At Bisbee, Southern Arizona, the Queen Smelter is reported to be turning out daily about 10 tons of bullion, worth \$12. This is from copper and silver ore. The 20-stamp mill of the Harshaw mine, Southern Arizona, is crushing 63 tons of ore daily, yielding an average of \$3000. The ore is a soft chloride.

The Silver King set its roaster and lixiviation works in operation on the 16th inst. Of the stamps, 20 are devoted to supplying the new works.

Forty-five thousand pounds of concentrations were shipped to San Francisco October 21st.

The Contention mine shipped \$130,000 worth of bullion in October.

Six car-loads of native copper were shipped East last week from mines near Yuma, Arizona.

At the San Xavier, near Tucson, the mines are reported as "looking remarkably well." The smelters are working satisfactorily. A new matte furnace has started up, and makes 3 tons per day.

CALIFORNIA.

The Daily Evening Bulletin (San Francisco) has collected the following statistics of the September bullion product of thirty-two mines :

Table showing gold and silver mine production statistics for California in September 1879, including 13 gold mines and 15 silver mines.

Total \$1,892,100. 33 mines, September, 1879. 1,833,400

Since January 1st, 1880, an average of 28 mines has produced \$14,160,000, of which \$6,172,700 was in gold, \$7,987,300 in silver, and \$257,300 in lead.

SAN FRANCISCO, Nov. 3.—Bullion valued at \$67,540.09 was received in this city yesterday from the mines.

Sierra County.—Sears's Union Water Company season's clean-up, 100 lbs. of gold bullion, estimated \$24,000; ditto Morgan & Donahue, clean-up for current year, \$115,000.

SAN FRANCISCO, Oct. 21.—The returns furnished to the press by the bullion department of Wells, Fargo & Co.'s Express during the quarter ending September 30th, were over \$11,000,000.

The largest bar of gold ever sent through Wells, Fargo & Co.'s office was a \$30,000 bar of gold shipped from Nevada City, by the North Bloomfield Hydraulic Mining Company. The New York Hill mine, Grass Valley, is reported to have yielded in October \$30,000 in gold.

New discoveries of gold-bearing quartz are daily made in Magalia and Yankee Hill mining districts.

The superintendent of the Standard mine reports for the week ending October 30th, that 1585 tons of ore were extracted. The pulp-assays \$24.78. Twenty-three hundred and ninety-eight ounces of crude bullion, worth \$22,016, were shipped.

The New York Hill mine, at Grass Valley, Cal., had a surplus for October of \$46,100.

COLORADO.

Leadville.—The Leadville Circular of October 30th gives the following table of the approximate daily output of the leading mines of the camp at that time :

Table of mine outputs in Colorado, listing mines like Little Pittsburgh, Chrysolite, Iron Mine, Silver Cord, Catalpa, Fryer Hill, Amie, Oro La Plata, Penderly & Glass, Robinson, Morning Star, Little Ella, Argentine, Virginus, Evening Star with tons and mines.

The Leadville Herald says: The month of October has nearly passed, and there is considerable interest expressed to know what will be the bullion product. In September, it amounted to over a million and a half, and during the present month there have been more furnaces running than in the previous month. Still, however, it is generally believed the bullion shipments will be a trifle less. In September there was considerable bullion shipping by Billings & Eilers that was not produced during the month, but was an accumulation from months before.

Several smelters state the grade of bullion will not average as high in silver, and still further, the price of both lead and silver has ranged somewhat lower. Cummings & Finn have made a larger and more successful run, and the large new furnace of Billings & Eilers has been run for the first time this month.

The La Plata and California both report a greater output. There are 24 furnaces now running, and this has been about the average for the month, so there is certainly a successful outlook.

Breckenridge.—Gulch mining has been closed down for the winter. Three smelters are about ready to run on ores from the various mines being developed.

No stamp-mills are employed at Breckenridge, it being claimed that there is no free-milling ore produced in any of the mines.

The Boston & Breckenridge Smelting Company proposes the consolidation of the works now at Breckenridge, Colorado, increasing its capacity to 50 tons daily.

Dunkin.—The Dunkin shipped 300 tons of ore during October. It averaged net \$100 per ton.

The Evening Star expects to ship 100 tons daily after January 1st. The Morning Star now ships 60 tons.

The Roberts concentrating mill is running steadily on Hukill, Mayflower, and Tropic ores, concentrating about thirty tons per day. The crushing machinery consists of a Blake crusher, three pairs of Cornish rolls, and twelve stamps, and the concentrating machinery of eight Colom jigs.

The mill will run a month longer, before closing down for the winter.

The number of lessees now working different parts of the Colorado Central mine at Georgetown is sixty. The number of miners employed is 100. Some of the lessees are paying a royalty of 50 per cent.

DAKOTA.

The Queen Bee mill, at Central Hills, Dakota, is running steadily on \$30 rock. A Chicago company is negotiating the purchase of locations in Tigerville and Queen Bee districts. A 60-stamp mill is to be erected on the Blaine mine, near Queen Bee town.

IDAHO.

The Custer mill, at Bonanza, has been finished. It has a capacity for forty stamps; it will start up with twenty-five in the early part of November.

MONTANA.

The Colorado smelter, near Butte, is reducing about 12 tons of ore per diem.

The Butte Mountain Mine, in its issue of October 24th, says: The bullion shipments from Butte, per U. P. Express Company, for the week ending October 23d, aggregate \$41,220.19.

Everything is running smoothly at the new smelting works of the Montana Copper Company. The matting furnace is an entire success, and turns out daily between five and six tons of matte, assaying from 50 to 60 per cent copper. The capacity of the furnace being too small for the roasters, arrangements are making for the erection of another furnace.

Silver Creek District.—One of the Bald Butte mines—the Albion lode, in Silver Creek District, is at present attracting much attention. Sixty tons of ore were crushed in a 5-stamp mill, yielding about \$5,000 in gold. There is a large body of rich ore in sight.

The Alder Gulch, and other mines in that vicinity, yielded for the past season about \$500,000 in gold. The quartz yield is estimated to be about \$100,000.

NEVADA.

The Exchange mill and mine, at Cherry Creek, have been started up with a force of twenty-five men. The first bar of bullion was shipped October 21st.

The Ophir mine is producing 124 tons of ore per week, from the 2000-foot level. The assays of this ore are not mentioned in the official report.

Manhattan.—Letter of the 15th ult. says: During the past week, mill has reduced 144 tons 1574 lbs. of ore of the assay value of \$38,938.81; \$12,584.22 from custom ores, \$6689.66 from tribute ores, and \$16,664.93 from Curtis shaft.

Letter of the 22d ult. says: During the past week, mill has reduced 130 tons of ore; assay value, \$50,307.20; \$17,085.10 from custom ores, \$16,052.02 from tribute ores, and \$17,170.08 from Curtis shaft.

From September 17th to October 21st, inclusive, the bullion shipments from the Mount Diablo mine aggregated \$100,015.23.

The Consolidated Virginia is taking out 1224 tons of ore per week, assaying \$21.65. The California, 1422 tons, assaying \$20.95.

Two of the Huntington quartz batteries now at work for the Antelope mill, in Long Valley, are said to be equal in crushing capacity to ten ordinary stamps.

UTAH.

Ontario.—The bullion product of the mill for the week ending October 21st, was \$49,404.29 from 316 net tons, making \$156,324.35 for 21 days. Ore extracted during the week, 408 tons, namely, 117 from fourth, 150 from fifth, and 171 from sixth level. The output of the mine for the month of October will exceed the shipments of any previous month by a little over \$20,000.

Park City Smelter.—The base bullion shipment from the Park City smelter, for the week ending October 16th, was 200 bars. Week ending October 23d, 220 bars; total shipments, 420 bars—100 pounds each—42,000 pounds.

The Horn-Silver made a sale yesterday of 100 tons of ore to the Morgan and Germania Smelter, which is a good sale considering it is the first made in this market.

Stormont.—The total bullion production for the month of October was over \$52,600.

Silver Reef.—The bullion shipments from Silver Reef, through Wells, Fargo & Co., from the 14th to the 20th inclusive, aggregate the sum of \$19,387.12. Total for the month, to date, \$76,354.04.

Salt Lake.—For the week ending October 29th, Salt Lake City bullion receipts were in value \$127,959.70.

By the Great Basin mine, ore sales for the week ending October 23d, \$14,369.96. Our regular correspondent, writing under date of November 1st, says:

The following bullion shipments were received on the 29th and 30th ults:

Table of bullion receipts for Ontario, Tintic, Stormont, Mammoth, Horn-Silver, Germania, and Ferry.

Ontario, 10 bars... \$10,439.53. Barbee, 1 bar... 2,093.09. Tintic, 4 bars... 3,107.00. Stormont, 4 bars... 7,647.13. Mammoth, 2 bars... 1,109.91. Horn-Silver, 6 cars... 14,384.35. Germania, 3 cars... Not named, 1 car... 8,800.00. Ferry, 1 car... MISCELLANEOUS.

Bullion Receipts from the Mines to New York.—The bullion received from the mines at the various offices in this city during the week ending with yesterday, as compiled from various sources, amounts to \$242,646.10, as against \$393,064.09, reported in our last.

The Gold Flood.—LONDON, Nov. 4.—Part of the bullion withdrawn from the Bank of England to-day is for shipment to America.

LONDON, Nov. 5.—The bullion withdrawn from the Bank of England to-day (£341,000) was for shipment to America.

The Evening Post of to-day says: The receipts of foreign specie have so fallen off of late that it is encouraging to know that a part of the gold withdrawn from the Bank of England yesterday is for shipment here. Comparatively little of the foreign gold received here since August has come out of the London market; and it is to be kept in mind that gold can not be drawn from there as easily as from the French and German markets, the power to check the outflow being greater, as is also the disposition to do so. To keep our own money market easy during the remainder of the year, the receipts of foreign gold should rise a good deal above the average weekly receipts since August.

The Wall street Gazette says: The shipments of gold from France have become so large as to occasion some apprehension in Europe. While 80,710,000 francs were withdrawn from the Bank of France in gold, and 2,874,000 in silver, during the week ending last Thursday, it was noticed that 15,000,000 francs more in gold were withdrawn the next day, and that a considerable part of the demand was for Austria and Egypt. 10,000,000 francs having been sent to each. According to these telegraphic reports, the stock of gold in the Bank of France must now be reduced to 588,669,000 francs, or about \$177,700,000, which is far below the amount held by the United States. On the other hand, an error in the statement printed last week as to the bullion in the Bank of England was doubtless noticed; the stock October 6th should have been about £27,361,410, or about \$136,807,050—a little more than the United States Treasury held October 1st in gold alone. But the Treasury here has been considerably increasing its store within the past week. The movement from France seems to be due to the more successful efforts of Germany and Great Britain to prevent an outflow; as the gold must go out from somewhere, it goes from the country which uses most silver.

Exports of Gold and Silver from New York. Week ending Oct. 30th... \$210,450.00. Corresponding week last year... 124,165.00. Since Jan. 1st... 6,872,121.00. Corresponding period last year... 12,969,034.00.

Gold Interest Paid Out by the Treasury. Week ending Oct. 30th... \$160,749.63. Corresponding week last year... 349,577.68. Since Jan. 1st this year... 48,435,485.48. Corresponding period last year... 50,408,568.16.

Distributing Silver Dollars.—WASHINGTON, Nov. 4.—During the month of October, more than 3,500,000 standard silver dollars were shipped from the different branch mints and put into circulation; \$666,000 of this amount went into the State of Texas. Of the \$3,500,000, the sum of \$2,067,500 was sent from the New Orleans Mint, and \$1,343,500 was forwarded from the Mint at Philadelphia.

The Treasury Department purchased 250,000 ounces of fine silver to-day, for delivery at the Philadelphia, San Francisco, and New Orleans mints.

The Assay Office Monthly Statement.—The following is a statement of the business at the United States Assay Office at New York, for the month ending October 30th, 1880:

Deposits of gold: Foreign coin... \$12,650,000. Foreign bullion... 580,000. United States bullion... 1,400,000. United States bullion (redeposits)... 20,000. Jeweler's bars... 70,000. \$14,720,000.

Deposits of silver: Miscellaneous... 78,100. United States bullion, California... 2,000. United States bullion, Colorado... 78,400. United States bullion, Idaho... 1,400. United States bullion, Lake Superior... 3,000. United States bullion, Montana... 66,000. United States bullion, Nevada... 11,400. United States bullion, New Mexico... 26,000. United States bullion, Utah... 154,600. United States bullion, Arizona... 8,000. Refined silver... 60,800. 489,700.

Total deposits... \$15,209,700. Gold bars stamped... \$1,075,986. Silver bars stamped... 475,328. \$1,551,315.

Philadelphia Mint Coinage.—The following is a state-

ment of the coinage executed at the United States Mint in Philadelphia during the month of October, 1880:

Denomination.	Pieces.	Value.
Eagles.....	33,900	\$339,000
Half-eagles.....	117,280	586,400
Total gold.....	151,180	\$925,400
Silver dollars.....	1,200,000	1,200,000
Cents.....	1,220,000	12,200
Total coinage.....	2,571,180	\$2,137,600

**September Bullion Report.**—The report of bullion product from the various gold mines during the month of September were reported as follows: Belvidere, \$13,900; Black Bear Quartz, \$8000; Bodie Consolidated, \$28,600; Deadwood, \$37,900; Fresno Enterprise, \$11,600; Homestake (Dakota), \$137,500; Idaho (Nevada County), \$45,000; Milton Gravel, \$30,300; North Bloomfield, \$15,600; Noonday, \$27,900; North Noonday, \$18,300; Oneida, \$5200; Standard Consolidated (\$10,900 silver), \$181,100. Total thirteen gold mines \$561,100.

The silver mines have reported for the month of September as follows: Alexander, \$40,000; Argenta, \$18,000; Christy (Utah), 27,400; Grand Prize, \$60,900; Harshaw (Arizona), \$75,000; Indian Queen, \$16,000; Mt. Diablo, \$11,000; Manhattan, \$106,800; Northern Belle, 119,600; Ontario (Utah), \$186,300; Paradise Valley, \$10,400; Richmond Consolidated, \$150,000; Silver King (Arizona), \$40,000; Star, \$26,000; Tip Top (Arizona), \$44,000. Total, 15 silver mines, \$932,400.

The Harshaw report is from partial returns. The Silver King is only an estimate, as the secretary declines to make a report.

The yield of four gold and silver mines for September was as follows:

	Gold.	Silver.	Total.
California.....	\$59,200	\$32,900	\$92,100
Consolidated Virginia.....	52,900	26,300	79,200
Eureka Consolidated.....	36,300	*80,700	117,000
Western.....	21,590	85,800	107,390
Totals.....	\$169,900	\$225,700	\$395,600

\* Including a value of \$26,300 for lead.

**METALS.**

NEW YORK, Friday Evening, Nov. 5.

A renewal of activity was looked for upon the settlement of the presidential question; but as yet no business of note has transpired. There is a better and more settled feeling in the market, and somewhat higher prices are looked for, although not a wild advance.

**Copper.**—The business of the past week has been small at 18 1/4 @ 18 3/4 c. for Lake.

On the 25th, there was a steady business and sales of about 800 tons of g. o. bs. were reported at £61 @ £61 1/2 cash; £61 1/2 @ £62 forward prompts. Our advices of the 26th say:

Chili Bars were decidedly quiet, the only transactions reported being a small quantity each of g. o. bs. and best mark at £61 1/4 @ £61 3/4 respectively, both on usual cash terms. We left off with sellers at said figures, and a moderate inquiry for each sort at 5s. per ton reduction. Wallaroo is quoted £71 1/2 @ £72; Burra Cake at £69 @ £69 1/2; English steady; Tough Cake, £64 @ £65; Select Ingot, £66 @ £67; India Sheets, £69 1/2 @ £70 1/2; Y. Metal Sheets, 6 @ 6 1/4 d. p. d.

Our London advices are inclusive of October 22d: There was a firm and active market on the 20th. The sales were about 800 tons of Chili slabs, mostly to arrive, or with extended prompts at £61 1/2 @ £61 3/4, and cash lots £60 1/4 @ £60 3/4. On the 21st, sales of about 900 tons at £60 3/4 cash, £60 1/4 fourteen days, and futures £61 1/4 @ £61 3/4.

On the 22d of October, there was a stronger market, and sales of about 400 tons were at £61 cash, and sundry lots for forward delivery at £61 1/4 @ £62, according to time of delivery.

**Tin Plates.**—There has been large buying in Liverpool. Cokes are up to 16s., and charcoals are up 1s. to 1s. 6d., with strong upward tendency. The market here is quiet but very strong. We quote per box as follows: Charcoal tins, Melyn grade, 1/2 cross, at \$6 @ \$6 1/2, and Allaway grade, \$6 @ \$6 1/2. Charcoal ternes, Dean grade, 14 x 20, \$5 1/2 @ \$5 1/2, and 20 x 28, \$11 1/2 @ \$11 1/2; Allaway grade, 14 x 20, \$5 1/2 @ \$5 1/2, and 20 x 28, \$10 @ \$11. Coke tins, B. V. grade, IC, \$5 @ \$5 1/2, and I.C.W., \$4 1/2 @ \$4 1/2. Coke ternes, 14 x 20, \$5 @ \$5 1/2, and 20 x 28, \$10 1/4 @ \$10 1/4.

Messrs. Robert Crooks & Co., of Liverpool, under date of October 21st, say of Tin and Terne Plates:

There is but little change to note since date of our last issue, business continuing very slack, and the market presenting no new feature. The Birmingham meeting, though well attended, was very inactive, buyers fighting shy and purchasing to cover present wants only. Charcoal Tins are easier, though nominally unaltered, but Cokes show a decline of about 3d. on the week.

**Tin.**—Straits in London is quoted at £90, and at Singapore at \$27 1/2. The business in this market has been small, the sales reported amounting to but 50 tons. We quote Straits at 20 1/4 @ 20 1/2 c., strong; Australian and Billiton at 20 1/2 c., and L. & F. at 20c. The shipments from the Straits to the United States during October amounted to 900 tons, and to England 350 tons. The shipments from Australia to England were 900 tons. The deliveries in England and

Holland during October were 2400 tons, an increase of 700 tons over September. We are furnished with the following statistics of the situation of tin in this country on the 1st inst.:

	Tons.
October 1st—Stock at New York and Boston.....	1,400
Arrivals in October.....	1,100
Total.....	2,500
Estimated consumption.....	1,000
November 1st—Stock.....	1,500

**STRAITS TIN AFLOAT.**

Sailed July 21st, Nereid, for Norfolk, due November 21st, 1880.....	2,100
Sailed September 11th, Star of the West, for Boston, due January 11th, 1881.....	505
Sailed October 11th, N. Bulletin, for New York, due February 11th, 1881.....	2,040
Total.....	4,645

September shipments per steamers, November, 1880.....	420
October 15th, shipments per steamers, December 1880.....	420
October 16-31st, shipments per steamers, January, 1881.....	375
Billiton tin, November, 1880.....	30

Visible supply.....	3,020
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On the 25th, the market was a little weak. Sales of about 150 tons of Straits and Australian were reported since the 22d at 87 1/2 @ 87 3/4 s. For delivery four and six weeks and three months forward, 88 @ 88 1/4 s. was paid. Our advices of the 26th say:

The market seems to have broken away through pressure of cash sales, principally for immediate payment. On these terms, about 100 tons were disposed of; from 87 1/2 s. down to 86 3/4 s. usual 14 days; 87s. to 87 1/2 s. sharp cash. In forward deliveries, we note about 20 tons, one month, at 87s., and 25 tons, three months, at same price. We closed with buyers 86 1/2 s., sharp; 86 3/4 s. ordinary cash terms, sellers asking 86 3/4 s. and 86 1/2 s.

Our London advices include October 22d. On the 20th, there were sales of about 150 tons 88 1/2 @ 88 3/4 s. for immediate delivery, and 88 1/4 @ 88 3/4 s. for usual 14 days. One month forward delivery brought 88 1/2 @ 88 3/4 s., and two and three months 88 3/4 s. In Banca, 600 slabs sold at 88 1/4 @ 89s., and 400 slabs of Billiton at 88 1/4 s. cash. On the 21st, there were sales of about 100 tons of Straits and Australian at 88 1/2 @ 88 3/4 s. sharp cash, 88 1/2 usual 14 days, 88 3/4 s. October and November shipments, and 88 1/2 s. one month fixed.

On the 22d, the tone of the market was easier. Sales of about 50 tons sharp cash and 50 tons forward deliveries were reported at 83 @ 88 3/4 s. Also 800 slabs Dutch warrants at 88 1/4 s.

**Lead.**—This article has been very quiet, the business having been entirely of a retail nature. At the close, 4-80c. and 4-85c. is asked, but buyers do not consider these rates as attractive.

**Spelter and Zinc.**—There is but very little doing in either of these articles. We quote Spelter at 4-90c. and 5c., and sheet zinc at 7 1/2 c.

**Antimony.**—We quote Cookson's at 14 and 14 1/2 c.; Hallitt's 13 1/2 c. and 14c.; and Johnson's, 13 1/2 c. and 13 1/4 c.

**Quicksilver.**—The San Francisco Commercial Herald of October 30th says:

Since the sailing of the last steamer for the Orient, the market has relaxed into its usual dullness. The price quite nominal, say 38 1/2 @ 39c.

The exports for the week, by sea, were as follows: To Auckland, per City of Sidney, hence 23d inst.:

	Flasks.	Value.
Wilkes & Co.....	20	\$600
Hugh Craig.....	20	589
Totals.....	40	1,189
Previously since January 1st, 1880.....	27,313	811,694
Total since January 1st, 1880.....	27,353	\$813,083
Total same period 1879.....	46,905	1,357,475

Decrease in 1880..... 19,552 \$544,392  
Receipts since October 1st, 1880, 4643 flasks.  
Overland shipments from January 1st to October 1st, 1880, 8754 flasks.

**IRON MARKET REVIEW.**

NEW YORK, Friday Evening, Nov. 5.

"Thank Providence, it is all over!" is a remark that has been heard a great many times since Tuesday. Of course, reference in each case was made to the elections, and now it is supposed that business will resume its regular course once more. There is quite an improvement to the tone of the market already, but it is not reasonable to look for an instantaneous rush. There undoubtedly have been enterprises held in abeyance that will now be revived, and foundries, machine-shops, etc., that have been consuming large quantities of iron and which have permitted their stocks to be reduced very much, will probably soon begin to make generous purchases. The consumption of iron was never greater in this

country than it is at present, and with the large railroad mileage under construction and contemplated, and the rolling stock requirements of the established roads, there is every indication that all of our available works will be occupied in supplying the demands of the next fifteen months, besides calling on Great Britain and the continent for large additional supplies.

**American Pig.**—The only business of importance to note is about 2500 tons of Thomas No. 2 Foundry at \$21. A great drawback to an advance of prices at present is the existence of certain low-priced lots of foreign iron seeking a market. We learn of a sale of 400 tons of Middlesbrough No. 3 iron at \$19, during the past week. We quote No. 1 Foundry at \$25 @ \$26; No. 2 Foundry \$22; and Forge \$20 @ \$21. These prices are an improvement on those quoted a week ago. We learn that \$25 has been refused for No. 1 Foundry.

**Scotch Pig.**—The foreign market is firmer, and, since the elections, our own market has gained some strength. The sales here during the past week only aggregate a few hundred tons. We quote Gartsherrie at \$23 1/2 @ \$24; Coltness, \$24; Summerlee, \$23 1/2 @ \$24; Eglinton, \$21 1/2 @ \$22; and Glengarnock, \$23 @ \$23 1/2.

Messrs. John E. Swan & Co., of Glasgow, under date of October 22d, report 116 furnaces, against 94 at the same time last year. The quantity of iron in Connal & Co.'s stores was 474,787 tons, a decrease for the week of 30 tons. The shipments show an increase of 112,624 tons since Christmas, as compared with the shipments to the same date last year. The imports of Middlesbrough pig-iron for the same period show a decrease of 11,265 tons. The following are the quotations of the leading brands of No. 1 Pig-iron: Gartsherrie, 62s.; Coltness, 63s.; Langloan, 62s.; Summerlee, 58s.; Carnbroe, 56s.; Glengarnock, 56s.; Eglinton 53s.; Middlesbrough pig-iron was quoted as follows, f. o. b.: No. 1 Foundry, 44s. 6d.; No. 2, 42s.; No. 3, 40s.; No. 4, 39s. 6d.; No. 4 Forge, 39s.

Messrs. J. Berger Spence & Co., of Manchester, England, under date of October 23d, say:

The position of the Northern pig-iron markets continues to be to some extent one of improvement, though buyers approach the subject of purchases with no little doubt and apprehension. There is, however, a considerable increase of inquiry, and more business is being done for prompt, and to the end of the first quarter of next year. For this delivery, No. 3 Middlesbrough is steady at 39s. 6d., with quantities freely changing hands. Shipments of iron from Middlesbrough are also heavy, and it is computed some 87,000 tons will have been cleared during the month. Scotch Warrants have also increased in value, and may be to-day reported at 37s. 6d., or an increase of say 1s. 2d. per ton on the closing prices of last week. Hematites still rule weak, and the inquiry has decreased. Rates for 1, 2, or 3 Bessemer remain nominally at 60s. at works. Derbyshire prices have been reduced, and some makers are selling forward at the reduced rates for current, and this has created some extra trade.

**Rails.**—There is said to be a large inquiry for steel rails, and a disinclination on the part of most if not all of the mills to take orders at current rates. The business of the week is said to aggregate over 10,000 tons. A portion of these are reported to have sold at \$57, while we are satisfied they did not bring over \$58 at a Pennsylvania mill for immediate delivery. At the close, \$60 @ \$65 is asked, according to delivery. In iron rails, we learn of no business, although there are some important negotiations pending for deliveries next spring. We quote at \$45 @ \$49.

**Old Rails.**—In this market we learn of no business. There is said to have been some in Philadelphia. Prices are higher. We quote Ts. at \$26 @ \$26 1/2, and D. Hs. \$27 1/2 @ \$28.

**Wrought Scrap.**—This article is difficult to quote. We shall say nominally that No. 1 from yard is worth \$26 1/2 @ \$28, and from warehouse \$25 @ \$28, according to quality.

Mr. A. E. Godeffroy issues the following circular under date of October 20th:

As it is generally conceded that the past year has been one of the most remarkable ever seen in the iron trade, embracing as it did the two extremes of profound depression and wild speculative inflation, it becomes a matter of interest to ascertain how much of the immense importations of 1879-80 have been genuine business, and to separate that, if possible, from what was purely speculative.

To this end, I have been at some pains to get at the consumption of foreign iron and steel of certain descriptions for the 12 months ending July 1st, 1880, taking as my basis the official returns of the U. S. Bureau of Statistics, recently issued. It has been impossible to gauge the consumption with absolute accuracy, because the official figures of stocks on hand are necessarily limited to the bonded stores, and as the great pressure of imports in many instances made it difficult to obtain bonded storage-

room, a larger proportion than would otherwise have been the case was entered and stored duty paid.

I have endeavored, however, to be as careful as possible in estimating the latter stock, and although, after all, one can only get an approximation, yet I think I can claim for the results substantial correctness.

With regard to new iron and steel rails, I would remark that, without doubt, the subjoined figures represent the actual consumption, the high duty precluding the idea of any stock of these articles in free stores.

Table with columns: Item, Tons, Value. Includes Old Rails and Scrap-Iron, Pig-Iron, Steel Railroad Bars, Consumption of foreign.

We publish the following letters from our regular correspondents:

BALTIMORE, Nov. 1. The iron market shows no material change from last report. The demand continues fair, and prices about as follows:

CINCINNATI, Nov. 3. There is a healthy demand for pig-iron for consumption at previous prices, and we continue to quote:

Table listing iron products like Hanging Rock Charcoal, Hanging Rock Coke, Jackson Co. Stone Coal, etc.

MILWAUKEE, Nov. 1. The iron market is quiet but firm in prices, and waiting the result of the coming presidential election.

Table listing charcoal products like Lake Superior per gross ton, No. 1 Am. S., etc.

RICHMOND, Nov. 2. Market continues firm at quotations last made. The lateness of the season and political distractions restrict orders to immediate wants.

Table listing various iron and steel products like Scotch Pig-Iron, Amer. Scotch Pig-Iron, Best Charcoal Wheel Iron, etc.

ST. LOUIS, Sept. 30. Trade has been better this week than for some time past. Since it has become apparent to all observers that no agitation looking toward a change in the existing tariff will ensue after the election, confidence in the stability of the market has gradually been taking possession of buyers.

Table listing Hot Blast Charcoal products like Missouri, Southern, Hanging Rock.

Table titled COKE AND COAL, MILL IRONS, CAR-WHEEL AND MALLEABLE IRONS, IRON ORE.

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

LONDON, E. C., Oct. 21. STEEL RAILS.—\$5 17s. 6d. @ \$6 per ton, according to weight per yard, section and specification. Market steady, and a strong demand anticipated later on.

COAL TRADE REVIEW. Anthracite.

NEW YORK, Friday Evening, Nov. 5.

Owing to the political contest, out-of-town buyers have not been in the market, and business in general has been pretty much at a stand still. There is, however, a very liberal amount of coal moving, and prices are well maintained.

The production of anthracite coal last week was 651,592 tons, as compared with 647,715 tons the previous week, and 577,417 tons the corresponding week of 1879.

Bituminous.

The bituminous shippers still complain of a great scarcity of cars, and also state that orders are quite abundant with them, although they are unable to advance prices.

We publish the following letters from our regular correspondents:

BALTIMORE, Nov. 1. Trade for October has been quite active and steady for all the varieties of anthracite. The demand will probably be unusually good for November, as a less number of consumers bought early in the season than is usual.

Wholesale Prices per ton of 2240 lbs. In cars at Depot N. C. RR.

Table listing coal products like Hard White Ash, Lump and Steamboat, Broken, Egg, Stove, Chestnut.

Table titled LYKENS VALLEY RED ASH, listing Broken, Egg, Stove, Chestnut.

By cargo afloat, 15 cents less than in cars. From yard or wharf to trade, 50 cents additional.

Anthracite prices remain firm and unchanged, with a moderate demand. Shippers find great difficulty in getting line cars to fill Western orders.

Table titled ANTHRACITE, listing Lackawanna and Shamokin, To dealers, Retail, On cars, F. O. B., Delivered.

Connellsville coke, gas, steam, and Cannel coals are offered, for the present, at the following prices per ton of 2000 lbs., on cars:

Table listing coal products like Connellsville coke, Brookfield Coal, Brier Hill, etc.

Terms, equal to cash in New York City funds.

LEE & LOOMIS. CHICAGO, Nov. 2.

The demand for all kinds of coal during the month of October has been good. This is true both as to trade in the city and in the country.

Per net ton on cars.

Table listing coal products like Grate, Egg, Stove, Nut, Slack.

At retail to consumers.

Table listing coal products like Grate, Egg, Stove, Nut, Slack.

Bituminous coal.

Table listing coal products like Brier Hill, Erie, Cannel, Indiana Block.

RENO & LITTLE. HAMILTON, ONT., Nov. 1.

There is no change in prices from last quotations. A good trade is being done, and every dealer is taxed to his utmost capacity to fill orders hurried in by the cold weather.

There is no trouble comparatively, selling coal for manufacturing purposes. Under the present tariff, our manufacturing industries seem to have been so stimulated that with a return to prosperity the desire to economize and save the last cent has vanished.

Retail prices delivered per ton of 2000 lbs.

Table listing coal products like Grate, Egg, Stove, Chestnut, Pea.

H. BARNARD. MILWAUKEE, Nov. 1.

Demand equal to supply, and prices firm.

Table listing coal products like Lackawanna stove size per net ton, Brier Hill, etc.

F. o. b. cars, terms cash.

R. P. ELMORE & Co. MONTREAL, Nov. 2.

These prices given below are nominal, as our season of open water is about over and very few new charters are reported.

Table listing coal products like Anthracite at wholesale, Bituminous at wholesale, Scotch steam, Pictou, Cape Breton steam.

ROBERT C. ADAMS & Co. NEW ORLEANS, Nov. 2.

As predicted in our last advices to you, there has been a sharp advance on all kinds of coal during October, with an improvement in the demand, and prospects for a good fall and winter trade.

ished by more arrivals from Pittsburg during the current month, there will be another advance on all prices. We quote: Coal on hand in this city November: Pittsburg coal, 73 boats. Consumption during October: Pittsburg coal, 29 boats. Arrivals during October, 5 boats of Pittsburg coal from Bayou Sara.

Table with columns for coal types (Fittsburg, Alabama, Anthracite, Virginia Cannel, St. Bernard) and prices per ton or per hundred.

C. A. MILTENBERGER & Co. RICHMOND, NOV. 2. Trade is quite brisk just now, in consequence of the cool weather and sharp frosts. There is nothing special to note, other than a decided stiffening in prices for all kinds of coal.

As soon as the Chesapeake & Ohio road is finished to Newport and James River, the steam coals from West Virginia will be formidable competitors to the Clearfield and Cumberland trade.

Table showing prices for Hard Coal (Lackawanna) and Soft Coal (Shawnee, Hocking Valley, Cumberland) in various grades.

Table titled 'BITUMINOUS-WHOLESALE ON CARS' showing prices for various coal types like Massillon, Shawnee, Hocking Valley, and Cumberland.

Table titled 'SOFT COAL-F. O. B. PRICES' showing prices for Shawnee, Straitsville, and Hocking Valley coals.

GOSLINE & BARBOUR. SAN FRANCISCO, Oct. 30.

Arrivals from all sources from October 1st to 24th, inclusive, aggregate 52,000 tons. Our local consumers have got so much in the habit of using for household purposes Seattle, Coos Bay, and Wellington or other coals from British Columbia that whenever the fleet gets wind-bound or a collier or two is lost, a temporary famine of coal is experienced by the dealers, whose trade is run upon this description in preference to Wallsend or West Hartley.

New York.

Wholesale Prices of Anthracite Coal Delivery f. o. b. at Tide-Water Shipping Ports, per ton of 2240 lbs.

Large table listing prices for various coal types (Wyoming, Lehigh, Schuylkill) in different grades (Lump, Steamer, Grate, Egg, Stove, Chestnut) and locations (Pittston, Scranton, Lackawanna, etc.).

\* Fifty cents per ton additional for delivery at New York.

Wholesale Prices of Bituminous Coal.

Table showing Domestic Gas-Coals and Bituminous Coal prices per ton of 2240 lbs. from Westmoreland and Pennsylvania.

Table showing Retail Prices for Pittston and Lack coal delivered below 59th St.

STATISTICS OF COAL PRODUCTION.

Comparative statement for the week ending Oct. 30th, and years from January 1st:

Large table comparing coal production in 1880 and 1879, broken down by region (Wyoming, Lehigh, Schuylkill, Sullivan) and month.

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

The increase in shipments of Cumberland Coal over the Cumberland Branch and Cumberland & Pennsylvania Railroad amounts to 519,165 tons, as compared with the corresponding period in 1879.

The Production of Bituminous Coal for the week ending Oct. 30th was as follows:

Table showing production of bituminous coal by region (Cumberland, Barclay, Broad Top, Clearfield, Alleghany, Pennsylvania) for the week ending Oct. 30th.

The Production of Coke for the week ending Oct. 14th:

Table showing production of coke by region (Penn. RR., West Penn. RR., Southwest Penn. RR., Penn. & Westmoreland Region, Pittsburg) for the week ending Oct. 14th.

OFFICE OF THE ONTARIO SILVER MINING COMPANY.

18 WALL STREET, NEW YORK, NOV. 5, 1880. DIVIDEND NO. 61. The regular monthly dividend of fifty cents per share has been declared for October.

BOOKS ON GEOLOGY, THE SCIENTIFIC PUBLISHING COMPANY.

P.O. Box 4404, 27 Park Place, N. Y.

MAPS.

Any of the following-named Maps can be had by remitting the price by Post-Office Money-Order, or Bank Draft on New York, to the

Scientific Publishing Company,

P.O. Box 4404, 27 Park Place, New York.

ARIZONA AND NEW MEXICO.—This Map shows all the Township Surveys, Private Land Claims, Post-Offices, and Settlements. It also exhibits the Explorations of other Government and Private Expeditions, including the facts developed by the Surveys for the Routes of Projected Railroads, etc. 1880. Scale, one inch to three miles. Colored, 27x18 inches. Pocket form, \$1.

COLORADO.—Topographical and Township Map of the State. Compiled from U. S. Government Surveys and other authentic sources, by Louis Nell, Civil Engineer. By means of symbols, the following mass of facts is graphically shown: Railroads in operation; Railroads chartered or in progress; Wagon-roads; Wagon-roads proposed; Trails; Drainage dry during the greater part of the season; County-seats; Post-offices (July 1st, 1880); Villages; Townships subdivided; Townships surveyed in outlines; Contour-lines, with vertical intervals of 1000 feet; Altitudes in feet above sea-level, by barometer observations, and by spirit-levels; Private grants; Military reservations; Indian reservations ceded to the U. S. Government; Arable land, with irrigation. Scale, 1 inch: 10.5 miles. Size, 31 x 40 inches. Pocket form, \$1.50, on thick paper, varnished, on rollers, \$1.75.

COLORADO.—Topographical and Township Map of Part of the State, exhibiting the San Juan, Gunnison, and California Mining Regions. By Louis Nell. Substantially same as above, 1880. Scale, 1 inch: 9 miles. 1-570,240. Pocket form, \$1. Plain sheets for wall, 90 cents.

COLORADO.—Thayer's New Map of the State. Compiled from Official Surveys and Explorations, 1880. Scale, 14 inches to one mile. 25 x 32 inches. Pocket form, \$1.

LEADVILLE MINES.—Thayer's Map of the Leadville Mines. Compiled from the United States Surveys and County Records, 1880. Scale, 800 feet to one inch. 27 x 18 inches. Pocket form, \$1.50; mounted on muslin, with rollers, \$2.50.

WHITE RIVER INDIAN RESERVATION, COLORADO.—Published as a Supplement to Nell's Map of Central and Southwestern Colorado, to represent the whole area of the Ute Indian Reservations. Sheet, 25 cents.

COLORADO, UTAH, AND WYOMING.—This entirely new Map is based upon the most recent Government and Private Surveys, and shows the Townships and a great amount of Topographical Details unusual on such Maps. The beautifully clear style of engraving renders every thing perfectly distinct. 1880. Scale, one inch to thirty-three miles. Colored, 27x18 inches. Pocket form, \$1.

MAP OF MINING CLAIMS ADJOINING LEADVILLE, California, Mining District, Lake County, Colo. By Edward Rollandet. 1879. Mounted on muslin, \$2.50. In cloth-bound covers, \$2.

NEW SECTIONAL MAP OF COLORADO; scale, one inch to 13 miles; size, 24x36 inches, colored by cosmetics. Pocket form, 1880, 75 cents.

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MINING MAP OF UTAH.—Showing the location of the Mining Districts, over an extent of territory 150 miles from North to South. Compiled from U. S. Government Surveys and other authentic sources. Scale, one inch to four miles. Colored, 1879. Pocket form, \$1.50.

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