

ENGINEERING and MINING JOURNAL.

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THE annual meeting of the Alumni Association of the Rensselaer Polytechnic Institute was held at Troy during the past week. The meeting was a great success both in numbers and the interest which the old graduates still take in their *Alma Mater*. It is to be hoped that some practical results in the form of endowments may result from the deliberations of the trustees and graduates of the Institute; for it has long been the reproach of Troy that it has allowed what is everywhere recognized as the very first school of engineering in this country to struggle along without any substantial assistance from the wealthy citizens of that town, which the Institute has assisted so greatly in building up.

MR. JED. HOTCHKISS, Special Agent U. S. Census and editor of *The Virginias*, Staunton, Va., in the June number of his paper announces to owners or lessees of mines of every description in Virginia and West Virginia that he desires full information, embodying address and kind and location of mines, in order that he may know where to go and whom to seek when making his tour of inspection and verification. The same number contains a double-page Geological Map of Virginia and West Virginia, worked in ten colors, "the Geology by Prof. WILLIAM B. ROGERS, chiefly from the Virginia State Survey, 1835-41, with later observations in some parts." On the back of the map are Geological Sections by Profs. WILLIAM B. and H. D. ROGERS (1842), the horizontal scale being 2.5 miles to 1 inch; and a map showing the proposed routes of the Richmond & Southwestern Railroad. Prof. J. L. CAMPBELL, of Washington and Lee University, has a paper on the geology of the Blue Ridge, etc., at James River Gap, Va.; and the editor treats at large on the resources of the Virginias on and near the proposed route of the Richmond & Southwestern Railroad.

DEPHOSPHORIZATION.

Since our last article on the Thomas-Snelus-Riley process, we have received additional information of the progress made abroad. We quote the following from *La Métallurgie* of April 14th:

"Up to the present time, it would seem as if France had remained unconcerned in the progress, practically considered, of the dephosphorization question, and had been distanced by her neighbors on the other side of the Rhine and the Channel. This is not quite the fact. One of the largest French works [Creuzot] began to study the Thomas-Gilchrist process as soon as it was brought out, and commenced with a practical application of it last November. After experimenting with it for some time, this establishment resolved to anticipate the result of its experimentation, and to put up at once plant for dephosphorizing on a large scale. This establishment has been bolder than the Hörde, or Ruhrort, or Angleur works; for it has applied the process to the first melting, and besides adapting it to the Bessemer converter, has fitted up a couple of Siemens-Martin furnaces, each of 15 tons' capacity, for the treatment of phosphoretic material by

the scrap process. In spite of the assertions of certain persons who, at the London meeting of May, 1879, let their wit outrun their judgment, dephosphorization is effected as readily in the Martin furnace as in the converter, without needing to resort to other means of oxidation than those of the scrap process. At the time of writing, the works in question have two 8-ton converters in operation, in which some 2000 tons of Thomas steel have been made of unexceptionable quality. About 20 blows are got with the same [bottom] lining. The first Siemens-Martin furnace, fired about three months ago, has given about 120 tappings, of 15 tons each, without needing repairs, excepting in the sole of the furnace, exactly as happens with the common lining. Treating baths containing as much as 15 per cent phosphorus, steel has been got containing no more than five ten-thousandths."

The dephosphorization process is of growing interest to iron-stone miners in the department of Aveyron (Chef-lieu Rhodéz), in the south of France. Hopes are entertained of being able to utilize the poor ores found in that region.

At Creuzot, they have made some 3000 tons of Martin steel, using unburnt lime bricks for the hearth, and they are also using all the metal direct from one blast-furnace for their lime-lined Bessemer vessels. The vessel bottoms average fifteen casts.

Steel is also made successfully from *cinder-pig* containing 0.25 to 0.5 per cent silicon, 2.5 per cent phosphorus, 15 sulphur, and 1 per cent manganese. With the success in the open hearth, the whole ground is now covered by the Thomas process.

NEW PUBLICATIONS.

THE ROASTING OF IRON ORES (*Das Rösten der Eisenerze*). By RICHARD AKERMAN. Translated from the Swedish, by B. TURLEY. With two Lithographic Plates. Leipzig: A. Felix. 1880. Pamphlet, 8vo, 104 pp.

Prof. AKERMAN'S excellent little treatise, *Om Jernmalms Röstning*, which appeared in Stockholm last year, as an extract in advance from *Jernkontorets Annaler* for 1880, has made some progress toward the acquaintance of American iron-masters. That is to say, a large number of them will be able to read it in German who could scarcely have read it in Swedish. Mr. TURLEY'S title-page describes his work as something more free than a mere translation; but we have ventured, nevertheless, to render his phrase, *Nach dem schwedischen bearbeitet*, with "Translated from the Swedish;" for we can not find, on comparing the two versions, that there is any essential difference between them. The German version is exceedingly well done, and shows none of the stiffness or obscurity which sometimes betrays the foreign origin of such work.

We can not do better than give a summary of the contents of this little book, in order to show how useful it is calculated to be. The first part is devoted to the Object of Roasting, and treats under this head of the disintegration of iron ore and the expulsion of its volatile ingredients; the higher oxidation of massive protoxide ores; the higher oxidation and consequent decomposition of silicates; and the removal of sulphur. An important discussion follows, concerning the effect of roasting upon the reducibility of iron ore in the blast-furnace. The external appearance of roasted ore is next considered; and finally, the execution of the roasting process itself, according to various plans, is described. The different methods are treated in two classes, according as they involve contact with the solid fuel or not. Last of all, the well-known Westman kiln and its operation are considered. This is the only representative brought forward of roasting with gaseous fuel.

The roasting of iron ores has assumed considerable importance of late in this country. Many ores in New Jersey and Pennsylvania contain little phosphorus, but too much sulphur for the production of soft, gray iron in the blast-furnace; and in roasting these, it has been proved that they become more easily reducible, and that the quantity as well as the quality of the product of the blast-furnace is thus enhanced. Many iron-masters still roast in heaps. Others not a few have erected kilns after something like the Swedish pattern. The question of expense is the main consideration. We may say roughly that 50 cents per ton for roasting is more than most furnaces (not making Bessemer iron) can afford at this time. At least, it is about the maximum. A smaller cost than that may be fairly incurred in the expectation of smoother running, larger and better product. Well-roasted magnetites can replace with advantage the leaner brown hematites.

We heartily recommend to those who are studying this matter the brief but clear and useful treatise before us.

BOOKS RECEIVED.

Water Analysis for Sanitary Purposes. With Hints for the Interpretation of Results. By E. Frankland, Ph.D., D.C.L., F.R.S., etc. etc. Philadelphia: Presley Blakiston. 1880. 12mo, 149 pages. (Index.)
Report upon United States Geographical Surveys West of the One Hundredth Meridian, in Charge of First Lieut. George M. Wheeler, Corps of Engineers, U. S. Army, under the Direction of Brig.-Gen. A. A. Humphreys, Chief of Engineers, U. S. Army. . . . Vol. II.—Astronomy and Barometric Hypsometry. Washington: Government Printing-Office. 1877. 4to, 571 pages and 22 Plates. (Index.)
Report upon United States Geographical Surveys West of the One Hundredth Meridian, in Charge of First Lieut. George M. Wheeler, Corps of Engineers, U. S. Army, under the Direction of Brig.-Gen. A. A. Humphreys, Chief of Engineers, U. S. Army. . . . Vol. VI.—Botany. Washington: Government Printing-Office. 1878. 4to, 404 pages, 30 Plates, and Colored Lithographic Frontispiece—A Cactus Grove, Arizona. (Index.)
Annual Statements of the Chief of the Bureau of Statistics on the Commerce

and Navigation of the United States for the Fiscal Year ended June 30, 1879. Foreign Commerce. Washington: Government Printing-Office. 1880. 8vo, 995 pages and Colored Chart, exhibiting the Value of the Commerce of the United States with each Foreign Country and Dependency during the Fiscal Year ended June 30, 1879. (No Index.)

An *Elementary Guide to Determinative Mineralogy*, for the Use of the Practical Mineralogist and Prospector, and for Instruction in Schools and Academies, based upon the Method of Weisbach's "Tabellen zur Bestimmung der Mineralien," applied chiefly to American Species. By C. Gilbert Wheeler, Professor in the University of Chicago. Chicago: S. J. Wheeler. 1880. 12mo, 75 pages. (Index.)

WILD-CAT PROCESSES.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: When primeval man discovered that iron and copper could be utilized in the place of stone implements, and when Tubal Cain built his first forge, prospecting and mining must already have been practiced for several ages. The date of these first efforts the writer has forgotten, but it was a long time ago. However, since then, millions of men have made it a life-long study and business; and as they gradually increased in the knowledge of the extraction and reduction of ores, the civilization of the human race grew also, while barbarism declined. Perfection has not been attained in this or any other department of science; and the most experienced miners and metallurgists will modestly confess that they can learn much, and that many improvements in their specialties are possible. Still, it appears rather singular that nine tenths of the marvelous inventions intended to revolutionize the old processes, and which are now offered as promising investments to a credulous public, are the creations of men who know nothing of practical operations in mining and smelting. A sudden inspiration seizes our inventor, a happy thought overwhelms him, and his gigantic intellect has solved the problem, and two ounces of gold or silver will be produced where one was before. Capitalists of high standing receive him with open arms; for here is an opportunity for a new stock company, with accommodations for the said capitalists down-cellar; his friends and the inventor on the ground-floor; and the public in the upper stories, as high up as they can be induced to climb. The illustrious Edison has been tolerably well advertised; the Robertson Electric Ore Milling Company has received hardly enough attention at your hands; the Monte Christo Company will know all about concentration in a few months. Now won't you generously advertise the last brilliant process which has come under the writer's observation, the Roberts Dry Placer and Ore Concentrating Company, of Colorado and Chicago, capital one million dollars? From its prospectus, which casually mentions that a few shares are yet for sale, we find that the company's *raison d'être* is the fact that a plan has been found by which the immense extent of gold-bearing ground in California, Colorado, New Mexico, etc., lying far above the reach of sluices, or in arid regions, may be handled at the minimum of expense and the maximum of profit, and also that the large low-grade silver mines of Colorado, carrying 10 to 30 ounces to the ton, could be treated profitably; the figured results from one mine of this grade (which the company intends to purchase) showing a clean profit of \$1400 per day. Here's richness, sure enough. Prof. R. W. RAYMOND's official reports are largely quoted, as showing the amount of ground which, by present methods, is inaccessible, and the cost of working by the hydraulic system. Evidently the opportunity, the way we long have sought, is before us; now the method, the transmuted, the key to wealth, is offered. It is a machine designed by Mr. Roberts, somewhat like the old-fashioned fanning-mill; the principle is the same; namely, a current of air meeting particles of the same size will elevate the lightest to a higher point than the heaviest. The proud inventor refers to Krom, who has built several mills after this idea, only employing an alternating percussive motion instead of a continuous blast of air. "A machine of three horse-power will concentrate 20 tons per day, at a cost of less than 25 cents per ton." If Eli Perkins can make a statement that will compare with the above, the writer will give him another stage-ride from Georgetown to Idaho. The power which is to run this extraordinary machine is not mentioned, so it is to be supposed an engine is needed. With the facts and figures of the prospectus in sight, the writer calls up a familiar scene in Arizona, embellished by the presence of this machine. A parched, desolate region of mesa and valley, cactus and mesquit making a scanty showing, the sun glaring down on a yellow desert, and a forlorn camp near an old river-bed that undoubtedly contains much gold—and water only nine miles away. No; it is impossible. I can not really imagine that machine in that place; it requires a heavier draught than my imagination will honor. To run an engine, water is necessary; workmen occasionally drink that precious fluid; to shovel over screens and properly size the auriferous gravel, that may contain one tenth of a cent to the pan, requires more men and more labor than Mr. Roberts ever dreamed of. The process is so absurd that ridicule seems wasted until one thinks of the many innocents who need warning.

As to the merits of this "light, cheap, portable, and ingenious machine" in concentrating silver and gold ores, it may be truthfully said that it has no merits, and that the representations made in its prospectus are fraudulent and calculated to deceive. Krom's dry process has been in active operation here for four years, and was tried thoroughly in 1870. Those anxious to know its results may consult Mr. Krom in New York. This weak, pitiful adaptation of the dry process, even if elaborated and sustained in a \$75,000 mill, would only make a miserable failure on Colorado ores. Western men are blamed if they do not devote all their energies to exposing the palpable frauds which they daily observe being perpetrated on Eastern investors. The above may be a Quixotic tilt against one windmill; but there are many more sailing around vigorously in your stock-boards; and if business common sense and experience are lost, and men can not see the eyes of the wild-cats at every window, the quicker you go through the mill the better.

FUEL-RATIOS—VOLATILIZED SULPHUR IN COKING.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: In your issue of May 15th, Professor Frazer says, "Either the sulphur in a coal should or should not be treated as part of the fuel;" to which self-evident proposition permit me to add that sometimes he does and sometimes he does not treat it as part of the fuel, and it is this fact which has, in the main, led to this controversy.

In a classification of coals based on the relationship between the volatile hydrocarbons and fixed carbon, the sulphur should find no place, and I have endeavored to eliminate this element from the problem. But Professor Frazer objects to my method of doing so, and characterizes it as entirely erroneous. I had hoped that the explanation I gave in my last communication would have been sufficient to prove to Professor Frazer that my method was not only sound in principle, but was the only one by which we could arrive at a tolerably accurate determination of the relationship between the volatile hydrocarbons and fixed carbon in a coal. But from his treatment of the subject in his reply, I am sorry to find that he still refuses to be convinced. Permit me, therefore, to explain it to him by a different method. A proximate analysis of a coal divides it into two portions, namely, volatile matters and non-volatile matters or coke. The example selected gives us: Volatile matters, 49.33; coke, 50.67=100. Now let us separate the different ingredients in each, as follows: Volatile matters contain: water, 1.190; sulphur, 1.130; hydrocarbons, 47.010=49.330. Coke contains: sulphur, .821; carbon, 45.214; ash, 4.635=50.670; total, 100. The fixed carbon divided by the volatile hydrocarbons gives us a ratio of .96. It will be seen, therefore, that the above method gives the same results as that first suggested by me, namely, to deduct the volatilized sulphur from the "volatile matter" and add it to the fixed carbon. Professor Frazer's first attempt at correcting my fuel-ratio gave him .996; his second attempt gives .937; and I am now in hopes that, having shot at both sides of the mark, he will arrive at the correct ratio next time, namely, .96. In his last treatment of my determinations, he seems to admit the necessity of deducting the volatilized sulphur from the volatile matters to get at the percentage of volatile hydrocarbons, but yet refrains from adding it to the fixed carbon. Now, the fixed carbon is not a direct determination, like the water, sulphur, or ash, and all the errors of an analysis, including counting the same element twice, affect its percentage, seeing that it is simply determined "by difference" to make the sum 100.

In the figures which Professor Frazer gives in his last communication, he seems to entirely ignore the fact that he considers part of the sulphur *twice*. He includes the *total* sulphur along with the water and ash, to get his figures 7.776, and then he again includes part of the sulphur (namely, 1.13 volatilized sulphur) in the volatile matters, to get the figures 48.14; and all this at the expense of the fixed carbon. Now, if he would not be so hard on the coal, and would be satisfied to consider the sulphur *once* in his treatment of the determinations, he would arrive at precisely the same results as I get, and would then be about right.

The percentage of the sulphur which is volatilized by coking varies considerably, depending on (1) the character of the coal, and (2) on the condition of the sulphur in the coal. But even where all the sulphur exists in the form of iron pyrites, it does not, as a general rule, "associate itself with the volatile hydrocarbons more than with any other constituent." The amount of volatile hydrocarbons present in a coal influences in a marked degree the percentage of the sulphur which is volatilized during the process of coking; and the two seem to bear a close relationship to each other. In a series of carefully-conducted experiments made to determine this point, I found that, other things being equal, the more hydrocarbons present in the coal, the greater will be the percentage of sulphur which will be volatilized by coking. With coals varying in hydrocarbons from 16 to 47 per cent, I found the sulphur volatilized varied from 15 to 58 per cent—extremes; and that the average of 25 experiments was 38.50 per cent. While it would not be safe to give any definite ratio between the percentage of hydrocarbons and the percentage of sulphur volatilized which would be applicable in every case, the results of the experiments alluded to above show that, as an average, for every percentage of hydrocarbons present, 1.30 per cent of the sulphur is volatilized by coking.

It only remains for me to add that, as comparatively little of the sulphur remains in the ash practically, all that which is left in the coke must burn off with the carbon. Yours respectfully,

HARRISBURG, May 17.

ANDREW S. MCCREATH.

PARLEY'S PARK, BINGHAM, AMERICAN FORK, AND LITTLE COTTONWOOD, UTAH.

Special Correspondence of the Engineering and Mining Journal.

The bad weather here still continues, and considerably retards mining operations, though small shipments of ore are selling in this market.

PARLEY'S PARK.

Every thing is flourishing at the Ontario. The main shaft is down twenty-five feet below the 600 station, and is pushed continuously. The 300-foot level in the Empire is driving east and west of the shaft on the vein, and its entire length is now 125 feet. The cross-cut from the 400-foot station is in fifty feet. The rock is very hard, the miners being able to make only about a foot per day. Superintendent McKay informs your correspondent that the assays made from ore taken from the 300 level run between 128 and 150 ounces of silver to the ton. He appears to feel very much pleased with the present appearance of the mine. In the Parley's Park mine, developments are pushed. The main shaft is down over 300 feet. Yesterday, the water poured in upon the miners in the bottom of the shaft, filling it to a depth of ten feet in a few minutes. The capacity of the pumps was increased, so that work was resumed to-day. A force of twenty-five miners is employed, and some very good ore has been struck on the 280-foot level. The main shaft of the Jones Bonanza has been driven down about five feet the past week. The pumps are doing good work.

BINGHAM.

A force of miners will be put on the Essex on Monday morning, and will drive a tunnel in on the vein 200 feet. This mine is on the opposite

THE employes of the B. & O. RR., Pittsburg division, are very much exercised over the Employes' Relief Association established by the company. They complain that they are compelled to contribute to the support of those injured in the discharge of their duties, and do not like the tax upon their wages this entails.

side of the gulch from the Stewart No. 2, and the owners think they have one of the best mines in Bingham, as the vein is twenty feet thick and carries free gold. The property was located and worked for silver ore; but not until recently was it discovered that by far the greater portion of the vein carried free gold. Mr. Boyd Park, one of the owners, was at the mine yesterday, and, from one pan of dirt taken from an old dump, he panned out a very pretty showing (I inclose you the result). Developments in the Jordan, Live Pine, Lucky Boy, Victor, Tiewaukee, and other properties continue, and small ore-shipments are made from a number of the silver-lead ore producers.

AMERICAN FORK.

Ore-shipments were commenced from the Pittsburg, Silver Bell, and Wild Dutchman this week, but were suspended in two days, owing to a severe snow-storm, which blockaded the roads and trails. The lateness of the season is seriously damaging Utah's mining interests.

LITTLE COTTONWOOD.

In the deep mines of this camp, the surface-water is seriously interfering with developments. The Emma, City Rocks, and Joab Lawrence are experiencing water trouble, but, with the exception of the first named, they are producing ore. The deep mines on the Big Cottonwood side are also affected. The Antelope & Prince of Wales is shipping about 100 tons of high-grade ore monthly. The Jupiter was started up this week.

SALT LAKE CITY, UTAH, June 11.

YOSEMITE.

LAKE CITY (COLO.) MINES.

Special Correspondence of the Engineering and Mining Journal.

Upon leaving Leadville for the San Juan country, with my *compagnon de voyage*, Mr. F. J. Raymond, late Superintendent of the Bolivar mine, Nueva Providencia, Venezuela, S. A., it was at first my intention to go via Saguache and the regular U. S. mail route. Upon getting farther down the Arkansas Valley, however, I heard so many people speak favorably of the Marshall Pass toll-road, and the saving in distance effected, that I determined to go that way. The toll-road was in fair condition between Poncha Pass and Gunnison City, with the exception of one place on the very top of Marshall Pass, which spot was simply frightful at the time I passed. For about a hundred yards, the road was so boggy that our pack-animals, two burros, just did manage to scramble through, and that was all. The rest of the road was better than the average, although I think the grade too steep on this side of the pass for heavily-loaded teams to go up.

On striking this side of the Saguache Range, the increased moisture of the atmosphere was very marked, the rawness and dampness of the air comparing very unfavorably with Leadville. This cold, blustering wind only left us upon getting away from the Gunnison Valley. The vegetation, of course, was more luxuriant than at Leadville, but not as much so as I had been led to expect.

Gunnison City seemed to be a bustling little city, from what little I could gather during my short stay of half a day. I visited the *News* office and was very courteously received by the editor, who kindly volunteered all the information he could give me about the place. The citizens seem to be more interested in Ruby Camp and vicinity than any other mining district. Mr. J. H. Haverly, of Chicago, seems to have bought up pretty much every thing in this neighborhood, including the *News*, and is infusing new life into every thing, as is his wont. About a half mile or so from Gunnison City proper, lies West Gunnison, a new aspirant for the trade of the country. I was unable to visit it. The *Gunnison Review* is published there, and is no mean rival to the *Gunnison News*. Both are weekly publications.

Lake City lies very cosily nestled in the heart of the mountains, in a valley at the confluence of Henson Creek with Lake Fork proper, called the Gunnison here. To one coming from the north, the first appearance of the town was very attractive, and a nearer acquaintance with it has only confirmed my first impression. One characteristic trait struck me at once. It was the unnatural stillness that prevailed everywhere. In my first stroll through the town, I did not meet over two dozen people on the streets. This is partly due, I suppose, to the fact, that the mines are several miles away from the city; but to a resident of Leadville it seems uncanny at first. The citizens of the place with whom I became acquainted, than whom a more hospitable set does not exist, assured me in regard to this, that it was inhabited chiefly by solid business men, who did a steady business right straight along; still, I think a little more life in the streets would not hurt the town. Two weeklies are published here—the *Silver World*, an old-established paper, and the *Lake City Mining Register*, a new paper just started up, edited by Mr. James F. Downey. Upon visiting the office of the *World*, I was agreeably surprised to find its editor, Mr. Olney, in possession of one of the finest collections of minerals I have yet seen in the State.

The mines being situated, for the most part, so far up the gulch, I was unable to see more than two or three. The Ulé, about the best of those in the immediate vicinity of Lake City, is now energetically worked by Captain Cruse, a Lake Superior miner, with a force of about fifty men. The vein in this mine is from two to four feet in width, the best mineral being found in the lowest workings, in the bottom of the shaft. The ore in the vein is chiefly galena, with copper pyrites and tetrahedrite, some zinc-blende also being present. The gangue is quartz and heavy-spar. The average weight of the pay-streak is about thirty inches. The country-rock is a trachyte or porphyry, I was not able to decide which—the feldspar being so much decomposed that I could not tell whether it was sandstone or orthoclase. About a mile or so below town, I saw some rock which showed distinct and unmistakable crystals of sanidine in the paste, so that I am inclined to take it to be trachyte and not porphyry. The vein of this mine, as well as other mines (the Highland Mary, for instance), shows some peculiarities. The hanging and foot-walls are never well defined; in places the veins seem to merge gradually into the country-rock, the latter being very siliceous and full of free silica in the immediate vicinity of the vein. All this induces me to believe that the country-rock is not the real mother-rock (*Muttergestein*) of the vein formation, and that the latter will prove to be below this surface-rock. The deepest shafts in this section of the country are not over 200 feet deep, which, in fissure-mining, is but a mere scratching of the earth.

For a mining district that has been worked for over five years, there is less development to show than one would be willing to believe on mere hearsay. But it is simply because capital has not come into the country to any degree as yet. The San Juan country will undoubtedly show up well when men of energy and capital come in, who are willing to develop their property somewhat before wishing to realize. The Ulé mine now ships about 10 tons of ore a day, which will average, perhaps, 50 ounces Ag per ton. A new inclined shaft, following the dip of the vein, has been started, measuring 11 feet by 6 feet in the clear. An engine of 30 horsepower has also been ordered to do the hoisting and run the pump, which latter has become necessary on account of the amount of water met with in the vein. They intend using a bucket for hoisting, and later on, if the quantity of mineral should warrant it, a skip. It is my opinion that this is false management, since a vertical shaft would answer the purpose far better, be free from water, and enable the mine to be worked in a systematic manner.

The country-rock is interlaid with strata of volcanic breccia and tufa, the whole being so much knocked about, however, that I was unable to make order out of the apparent chaos.

The mines up Henson Creek will be more energetically worked this summer than ever before. In the neighborhood of Engineer Mountain, diorite is the country-rock, and there are several fine mines in that district. The Palmetto Consolidated M. and M. Co. is going to work a big force there this summer, as soon as the mines are in the right shape. The ore from all the mines of this district is shipped as a rule to Crooke's Smelting and Refining Works, which are about half a mile out of town, up Gunnison Creek.

Lake City is not only the center of a large silver mining industry, but promises also to become a good gold camp in the near future. Near Animas Forks, up Picayune Gulch, some fine gold leads have been discovered, one of them, the Golden Fleece, having had mill-runs of over 10 ounces Au and 50 ounces Ag. With proper development, Lake City ought to be able to hold the San Juan under her sway for some time to come.

FRED. M. AMELUNG.

LAKE CITY, HINSDALE CO., COLO., June.

THE ORIGIN AND CLASSIFICATION OF ORE-DEPOSITS.*

By Prof. J. S. Newberry.

The mineral matters which have proved useful to man form three categories: first, the earthy, as gypsum, clay, marble; second, carbonaceous, as coal, lignite, petroleum; third, metallic, as iron, gold, silver.

The metals occur rarely native, oftener as ores, that is, combined with sulphur, silica, carbonic acid, etc. These form a series of deposits, of which the physical and chemical characters and history differ widely. They may be grouped into three classes, as follows:

1. *Superficial Deposits.*
2. *Stratified Deposits.*
3. *Unstratified Deposits.*

SUPERFICIAL DEPOSITS.

These include the accumulations of gold, stream-tin, platinum, gems, etc., which are obtained from the surface material, gravel, sand, and clay, derived from the mechanical decomposition of rock masses through which metals or ores were sparsely distributed. Thus, gold usually occurs in small quantity in the quartz-veins of metamorphic rocks. By the erosion of these rocks, having been freed from its matrix, and that more or less perfectly removed, this gold is concentrated by a natural washing process similar to that employed by man, but on a grander scale. In the same manner, the oxide of tin, which is hard, heavy, and very resistant to chemical agents, is distributed sparsely through granitic rocks or vein-stones; and where these have been eroded, the cassiterite remains in the alluvial deposits of streams, where it can be cheaply and easily collected.

Superficial deposits have probably furnished nine tenths of all the gold that has been obtained by man, the greater part of the tin, all the platinum and its associated metals (iridium, osmium, etc.), and all the gems except the emerald, which in South America is obtained by mining. Thus, it will be seen that the surface deposits are scarcely less important, economically, than the others. The superficial deposits of gold are for the most part confined to the foot-hills of mountain ranges, and are the products of the erosion effected by ages of frost, sun, rain, and ice, which are continually wearing down all the more elevated portions of the earth's surface. Shore-waves also, in some instances, have worn away the rocks against which they have beaten, and have produced accumulations of *débris* that contain gold, platinum, gems, etc., in sufficient quantity to be economically worked. When a beach deposit of this kind has been raised above the sea-level, it sometimes becomes convenient and profitable mining ground. On the coast of Oregon, at and above Port Orford, the beaches now yield gold, iridium, and osmium in sufficient quantity to afford profitable employment to quite a mining population; and in the Black Hills, the old Potsdam sandstone beach, formed by the beating of the Silurian sea upon cliffs of Laurentian and Huronian rocks traversed by auriferous quartz-veins, now constitutes what is there known as the "cement deposits," from which a considerable portion of the gold of this region is obtained. As has been mentioned, however, the chief supply of gold in all ages has come from the *débris* that have accumulated at the foot of mountain slopes. All mountain *chains* are composed of metamorphic rocks, and nearly all the mountain ranges of the globe are traversed by quartz-veins, in which are concentrated much of the gold that was originally finely disseminated through the sedimentary strata—conglomerates, sandstones, shales, etc.—now granites, schists, and slates.

By the lateral pressure that has metamorphosed the sedimentary rocks, and produced the segregation of the quartz-veins, great folds and ridges were formed, which, rising high above the general surface, act as condensers of moisture, and receive the most copious precipitation from the clouds. Hence on these mountain sides an enormous system of water-power is developed, which is spent in grinding up the rocks and transporting the *débris* to the bottom of the slope. Here it is further washed, sorted, and the gold locally concentrated to form the rich "placer" diggings. As no great skill or expensive mining machinery is required to

* From the *School of Mines Quarterly* for March, 1880.

work placer deposits, every man with good health, a pick, shovel, pan, and stock of provisions may go into the business. Gold washing is the simplest, as it was probably the earliest, of all mining enterprises, and has at different times employed nearly the entire population of a district or country. It is not surprising, therefore, that it has resulted in the production of an enormous quantity of gold. It is evident, however, that most of the placers of the world have been already exhausted, and while the little-known continent of Africa promises to furnish a large amount of the precious metal from its "golden sands," we can hardly expect that the production of California, Australia, and New Zealand will even be repeated in the world's history.

STRATIFIED DEPOSITS.

These may be subdivided into several groups, such as :

1. *Ore forming entire strata*; for example, beds of iron ore.
2. *Ore disseminated through strata*; as copper in the schists of Mansfeldt and in the sandstones of Lake Superior.
3. *Segregated masses in strata*; as sheets of copper in the Lake Superior sandstones; balls, kidneys, and sheets of clay ironstone in the shales of the Coal measures, etc.

UNSTRATIFIED DEPOSITS.

These have been divided into :

1. *Eruptive masses.*
2. *Disseminated through eruptive rocks.*
3. *Contact deposits.*
4. *Stockworks.*
5. *Fahlbands.*
6. *Impregnations.*
7. *Chambers.*
8. *Mineral veins.*

Of *eruptive masses* of metalliferous matter I must confess myself incredulous. Examples of these are cited in the crystalline iron ores of the island of Elba, those of Nijni, Tagilsk in Russia, and in Sweden, and even the iron ore-beds of Lake Superior and Missouri. As late as 1854, this was the view taken of our crystalline iron ores by Whitney in his *Metallic Wealth*; but great advances have since been made in our knowledge of these deposits, and it is now generally conceded that all our crystalline iron ores are simply metamorphosed sedimentary beds. The evidence is accumulating that those of the old world have the same character. Professor Otto Torell, the Director of the Geological Survey of Sweden, recently told me that he had visited all but one of the iron districts of Sweden, had found that in all these the iron ores were metamorphic, and he had no doubt that those yet unexamined were of similar nature. Where metamorphic action has been peculiarly violent, the beds of iron ore have been more or less dismembered, and perhaps in some instances have been actually fused; but that any bed of iron ore is the result of an eruption from the interior of the earth, is scarcely to be credited.

The examples of the occurrence of metalliferous matter *disseminated through eruptive rocks* are by no means uncommon, and the amygdaloid traps of Lake Superior, in which the cavities formed by gases have been more or less perfectly filled with copper, suggest themselves at once. Pyrites, magnetic iron, and platinum are found sparsely diffused through trap-rocks, and are sometimes concentrated in such a way as to form valuable deposits when the trap decomposes.

Contact deposits are usually understood to be accumulations of metal or ore along the planes of contact between two strata; and the sheets and strings of copper which are concentrated at the junction of the trap and sandstone in some parts of the south shore of Lake Superior constitute illustrative examples of this class of mineral deposits. There is, however, considerable diversity in character among the deposits grouped under this head; the chief distinction being that in some cases the ore or metal has been segregated from one or the other of the strata at the time of their deposition, and in others it has come from a foreign source, and has been deposited in a more or less continuous sheet in cavities formed between the surfaces of the adjacent rock-beds. To the second of these classes would seem to belong the argentiferous ores of Leadville, Colorado. These are deposited along the plane of junction between an underlying limestone and overlying porphyry, and undoubtedly accumulated in vacant spaces formed by the solution of the limestone. These ore-bodies have apparently much in common with the pockets and chambers excavated in certain limestone beds, and subsequently filled with ore, to be described farther on. The true structure of these Leadville ore-bodies can, however, only be accurately learned when they shall be penetrated below the zone of unchanged sulphurets into which they will undoubtedly merge in depth.

The term *Stockwork* is applied in the old world to a mass of rock or vein-stone penetrated in all directions by small intersecting sheets or veins in such a way that the whole mass is mined out. Some examples of this kind of deposit may be found in most of our mining districts; but the most important which have come under my observation are in the Oquirrh Mountains, in Utah, and at Silver Cliff, Colorado. In the first of these localities, beds of quartzite—in the second, of porphyry, have been shattered, and the crevices between the fragments have been filled with ore deposited from solution.

The name *Fahlband*, or rotten layer, originated in the silver mines of Kongsberg, in Norway, where there are parallel beds of rock impregnated with the sulphides of iron, copper, zinc, etc., which, by their decomposition, have rendered these beds so soft as easily to be removed. We occasionally meet with pyritous rock in this country, which decomposes in the same way, but none yet known to me has any considerable importance as a metalliferous deposit.

Impregnations may be defined to be saturations of porous rock with a mineral solution or vapor from which ore has been deposited. The cinnabar which is sometimes found impregnating unchanged or metamorphosed sandstone is generally cited as affording typical examples of impregnations. In such cases, which occur in California and South America, the deposit of ore has been ascribed by some writers to vapors, by others to solution, and it would seem that the latter is the more credible theory, although the vaporization of mercury is easily effected, and, like other metals, it may be transported by steam, as we have proof at the geysers in California. More familiar and satisfactory exhibitions of impregnation are, however, afforded by the copper-bearing sandstones of

Lake Superior, New Jersey, and New Mexico, and the silver-bearing sandstones of Silver Reef, in Southern Utah. In all these cases, it is evident that a porous rock was once saturated with a metalliferous solution, from which, in the Lake Superior region, metallic copper was precipitated; in New Jersey and New Mexico, sulphides of copper and iron; at Silver Reef, sulphide of silver. As such repositories of the metals are easily penetrated by surface water and air, we usually find the sulphides decomposed to a considerable depth; the copper ores converted into carbonate and silicate, the sulphide of silver into the chloride.

Chambers or pockets in limestone form the receptacles of ore in many countries; but nowhere else are such striking examples of this class of deposit as found in our Western mining districts. From a study of these, I have been led to add them to the catalogue of forms of ore-deposit as a distinct and important addition to those given by other writers. The distinctive characters of these accumulations of ore in chambers and galleries has not been heretofore generally recognized, and a want of information in regard to their true nature has led to much litigation and heavy losses in mining. The best examples of chamber-mines are the Eureka Consolidated, Richmond, etc., of Eureka, Nevada; the Emma, Flagstaff, Kessler, etc., in Little Cottonwood District; and the Cave Mine, near Frisco, Utah. All these mines are alike in this, that the ore is found more or less completely filling irregular chambers in limestone. Some of these ore-bodies are of great size, and the aggregate product of these chamber-mines is so great as to make it necessary to record this as one of the most important forms of metalliferous deposit. From the Potts chamber in the Eureka Consolidated mine, it is said that ore of the value of a million dollars was taken, while a still larger amount was produced from the great chamber of the Emma. The origin of these chamber-deposits is, in my judgment, simply this: A stratum of limestone, more than usually soluble in atmospheric water, carrying carbonic acid—which dissolves all limestones—has at some time been honey-combed by chambers and galleries such as those which traverse the limestone plateau of Central Kentucky, of which the Mammoth Cave is an example. Subsequently this rock has been broken through and upheaved by the subterranean forces which have disturbed all our important mining districts; and through the fissures then formed mineral solutions ascended, flowing into any receptacle opened to them. Where these fissures cut an insoluble rock, they became, when filled, simply fissure-veins; but where a cavernous limestone was broken into, such caverns and galleries as were opened were more or less filled with ore. It has been suggested that the caves now holding ore were excavated by the metalliferous solution; but we find some of them entirely empty, with their sides incrustated with spar, and having all the characters of ordinary limestone caves, and even where the ore occurs, the walls of the cavity have the same character, are hard and unimpregnated with ore. Hence we must conclude that the chambers were formed, like modern caves, by surface water; and when the country was upheaved and the rock shattered, only part of them were opened, and that these received the solution and ore, while the unopened ones remained empty. The character of the ore contained in the chambers varies much, as it does in the fissure-veins of our mining districts; and the solutions from which they were filled must have been different in the different localities where they occur. Argentiferous galena was evidently the most abundant ore deposited in the chambers, as it is elsewhere; but in some cases, this is associated with a large amount of iron sulphide, in others very little; while the ratio of gold to silver is inconstant, and the aggregate of both varies from nothing to several hundred dollars to the ton. The ores of Eureka run high in lead, contain much iron, and about seventy dollars in the precious metals, half gold, half silver. The ores of the Emma mine carried less iron, more lead, much more silver, less gold, and a little copper; while those of the Cave mine, at Frisco, contain no lead, much iron, a little copper, and are sometimes exceedingly rich in both silver and gold. In all the chamber-mines yet worked in this country, the ore taken out is thoroughly oxidized; but in the deeper workings of some neighboring fissure-veins, the soft, ochery ores of the chambers are found changed below into compact masses of galena and iron pyrites; the galena carrying the silver—the pyrites, the gold. Hence we may conclude that the ore originally deposited in the caves consisted of sulphides, and that, whenever these mines shall be worked below the water-level, ore of this character will be found. It should be said, however, that if the theory I have suggested of the formation of the limestone galleries and chambers is true, they will not be found to extend to so great a depth as the ore-bodies of fissure-veins, since the excavation of the limestone, if produced by atmospheric water, must be confined to the zone traversed by surface drainage. In a very dry and broken country, the line of permanent water-level may be very deep, as at Eureka, where the ore-bodies extend and are oxidized to a depth of at least 1400 feet. Such a condition of things could only exist in a very dry climate; but we have evidence that there have been great climatic changes in our Western mining districts; according to King and Gilbert, two wet periods having been succeeded by two dry ones, the last prevailing now. We may therefore find chambers wrought in the limestone in a dry period below the present or normal water-level. The enormous production of gold and silver from the chamber-mines already worked proves the great importance and value of this class of deposits; and while we may predict that they will be found to be more superficial than true fissure-veins, no limit can be fixed to the future yield of mines of this character, even though they should not be profitably worked below 1500 feet from the surface.

(TO BE CONTINUED.)

THE DUNCAN ROCK-DRILL.

A few peculiarities are noticeable in the construction of this rock-drill. The steam or air used to make the up-stroke is exhausted into the chamber above the piston-head, thus making the down-stroke economically. The self-feed permits the drill-point to approach the rock by jumps of an inch or two at a time, until it touches the work and goes at it with quick, hard blows. The pull-back is an exhaust at the top of the machine by which the engine is pulled back into the case, bringing the piston with it, and also the drill, thus cleaning out the hole and the

sludge from the bit, whether working in hard rock with water or soft rock dry. The whole machine is very light, but, being powerful, should be firmly set up to hold it when at work.

THE NEW PATTERN BLAKE CRUSHER.

In almost all work requiring the use of a crusher, a degree of uniformity in the product, in respect to fineness or coarseness, is desirable; and it is desirable, also, that the uniformity shall be maintained without frequent manipulation of the machine. The manufacturers of the above crusher claim that in the old machines the wear of the toggle-ends and their bearings is so rapid that a frequent drawing up of the "wedge" or the insertion of longer toggles is necessary in order to maintain in any good degree a uniform distance between the jaws, and a consequent uniformity of product. In the improvement to which reference is made, there being no wear of toggles or their bearings, there is but little change in the distance between the jaw-plates. It will be understood, however, that, when a change is desired in the fineness or coarseness of the product, it can be effected by substituting in the usual way longer or shorter toggles. In the 15 x 9 New Pattern crusher, the pitman (single casting) weighs nearly 1000 pounds. This immense mass of iron has, of course, to be actually lifted at every revolution of the fly-wheels. The proper number of revolutions for this machine is officially given as 250. It is easy to see that a large amount of power must be consumed in throwing this weight of nearly half a ton of iron upward and around, at the rate of 250 times a minute. For the improved machine, the wrought-iron pitman weighs less than 200 pounds.

Another improvement consists in the use of friction-rollers under the journals of the main shaft—a device which very largely reduces the amount of power required to drive the machine. Patents for several of the improvements are pending; while in others, patents have already been allowed.

COPPER MINING IN NEWFOUNDLAND.

It may not be generally known to the readers of the *ENGINEERING AND MINING JOURNAL* what large quantities of copper ore have been shipped from Newfoundland, especially during the last four or five years. We condense the following from a letter from the special correspondent of the *Montreal Gazette*, dated St. John's, Newfoundland, May 19th:

Bett's Cove copper mine was opened in 1874, under the management of Mr. Ellershausen; it yielded, in the first four years, 102,400 tons of ore, the value of which was £512,000. The price of copper ore fell to a very low figure toward the close of the year 1878, and a new mine was opened by the Bett's Cove Company at Little Bay, where ore could be extracted at a very moderate expense. Mining operations at Bett's Cove have been since carried on upon a comparatively moderate scale. A staff of 150 or 200 miners was still kept at work, and with remunerative results. Some of the pillars of ore left for the support of the roof along the various galleries were latterly removed, as their contents were of great value. When nearly the whole of these pillars were removed, in one particular portion of the workings, on Wednesday, May 5th, just before dusk, those on the surface noticed some alarming symptoms: the ground began to shake, stones rolled down from the cliff and plunged into the lake below. In a few seconds, with an awful crash, the whole top of Bett's Cove Hill fell in, leaving a yawning chasm more than 100 feet deep, where before was solid rock. As the catastrophe had been foreseen, no one was in the workings beneath, all the miners then under ground being in a safe portion of the mine. The machinery which had formerly stood on the portion of the surface which sank had all been removed. Great masses of valuable ore were exposed and rendered accessible, which could only have been reached by great expenditure of time and money. Operations will now be resumed on a larger scale, and a very considerable shipment of ore from Bett's Cove, during the summer, is anticipated.

LITTLE BAY MINE.

This mine was opened in August, 1878, and the anticipations regarding its productiveness have been more than realized. Since the shipping season closed, in December, 1879, about 650 men have been employed, and these have brought to the surface, during the winter, close on to 12,000 tons of good ore, which is now ready for shipment. The first cargo of 200 tons was dispatched three days ago. A considerable increase of the working force has been made; and now that the fine weather has opened, operations will be greatly facilitated. It would be safe to predict that ere the shipping season closes, 15,000 or more, probably 20,000 tons of ore additional, will be extracted, making a total for the year of over 30,000 tons. As the workings deepen, the ore improves in quality, and the extent of the deposit seems even greater than was at first supposed. The Robert's Arm Mine, worked by Mr. Ellershausen on his own account, is also very promising, and extensive works have been erected there. The new mine at Seal Bay, owned by Messrs. Browning & Son and others of St. John's, and leased by them to a wealthy English company on a royalty, promises to equal any of its predecessors. The preliminary operations carried on during the winter are now completed. Various other mining locations are awaiting their turn for examination. Since the first discovery of copper here in 1864, sixteen mines have been opened. Of these, two have been abandoned, five have suspended working from a variety of causes, one is but partially worked, and eight are now in full operation. Mr. Howley, assistant geologist, estimates the total area of the serpentine formation in the island at 5000 square miles. In his Geological Report for 1875, after a survey of the mining region, Mr. Murray says: "I feel bound to state that the experience of the late investigation convinces me, more than ever, that many of the northern parts of this island, and the great bay of Notre Dame in particular, are destined to develop into great mining centers, should capital and skilled labor be brought to bear in this direction." It must also be borne in mind that copper is not the only mineral found in this island. Lead has been discovered at various places, especially along the west coast; the equivalents of the auriferous rocks of Nova Scotia are found here, although gold has not yet been discovered; while in the carboniferous region of Bay St. George and Grand Lake, coal-beds of greater or less extent are known to exist. Borings were made last summer in the neighborhood of Grand Lake, and with

such encouraging results that the government has ordered them to be resumed this year. Thus the prospects of an extensive mining industry in Newfoundland are of a very encouraging character. The progress of copper-mining around Notre Dame Bay is steady. Tilt Cove mine, the workings of which have been suspended from year to year, owing to a misunderstanding between the owners, Messrs. Bennett & McKay, is to be sold next month, by order of the Court of Equity. There are immense deposits of ore there, and should it be purchased by an enterprising individual or company, it is likely we shall hear of extensive operations, requiring a large number of workmen.

NEW MAP OF NEWFOUNDLAND.

Our Provincial Geologist, Alexander Murray, C.M.G., F.G.S., has just brought out a splendid map of Newfoundland, on a large scale, published by Edward Stanford, London. The results of the latest explorations have been embodied in this map; the routes of the electric telegraph lines, of the projected line of railway from St. John's to St. George's Bay, of "Harvey's Road" from Bay of Islands to the Southwest Arm of Notre Dame Bay, which was recently surveyed, are all accurately laid down. The whole of the Labrador coast from the most recent Admiralty surveys is also depicted. Mr. Murray's name is a sufficient guarantee of its accuracy. The price is four dollars.

TUBE-WELLS FOR LARGE SUPPLIES OF WATER.

For the last eight or nine years, the leading breweries at Burton-on-Trent have obtained the bulk of their water-supplies from a number of tube-wells connected with one pump. Messrs. Allsopp & Co. pump 600,000 gallons daily from 30 3-inch wells, and Messrs. Bass & Co. 500,000 gallons from 25 tubes. Thus, in one town, two breweries are obtaining sufficient water for a town of 40,000 inhabitants. Although some of these Burton wells are within a stone's throw from the Trent, the quality, level, and temperature of the water differ from those of the river-water. The town of Carmarthen, in Wales, is supplied by 10 2-inch tube-wells. In sandy soils, strainers or filters are used, which prevent sand coming into the tubes. A tube-well was sunk in a very fine sand at Chiselhurst, by pumping up six barrow-loads of sand and replacing it with gravel. One advantage of the gravel filter is its imperishability, and if made sufficiently large, the velocity of the water is not sufficient to bring the grains of sand within the area acted upon by the pump. In rocks and other hard strata, the method of sinking tube-wells is similar to that employed in making artesian borings; but the mode of pumping and development of supply are entirely different from the tube-well system. Bored tube-wells can be made through any stratum and to any depth that an ordinary artesian boring can reach. The Lower Grounds, Birmingham, with their ornamental waters, fountains, and extensive gardens, derive their entire water-supply from a single 5-inch well sunk about two hundred feet deep. By means of this well, an annual saving of £300 for water-rate is effected. Two tube-wells at West Thurrock yield a daily supply of 220,000 gallons from the chalk.

THE HOLLWAY PROCESS IN NEW SOUTH WALES.

The *Sydney Morning Herald* of April 22d says: The article relating to a new discovery of a method for smelting without fuel, which we published on Tuesday, should commend itself to the attention of all persons interested in mining. Briefly stated, the principle brought into play is the evolution of heat by rapid oxidization of certain mineral substances, and notably of pyrites. In treating the pyritic ores of copper, which have been in this colony and in Queensland the principal sources of the metal, all that is requisite is to start the charge fairly in an appropriate furnace till it becomes molten. Thenceforward fuel, in the ordinary acceptance of the word, becomes unnecessary. All that is required is to feed the molten bath with more ore, which is itself fuel, provided a current or blast of air be continually forced through the fluid metal. Oxidization at a rapid rate is so maintained and enormous heat evolved, while waste products, such as sulphur, may be condensed and collected if they be found worth saving, a point only to be determined by the cost of carriage to a market. No one who has any knowledge of the history of copper mining in these colonies can doubt the influence which such a discovery should have upon the future of that branch of enterprise, if the promises made are fulfilled. At the first opening of a mine, it ordinarily happens that timber abounds close at hand. But the enormous consumption of furnaces rapidly denudes even the most densely wooded country, and it has followed in actual experience that by the time a mine has been so long worked that the attainment of considerable depths has enhanced the expenses of extracting ore, and increased economy becomes desirable in other departments, the supply of fuel has become inaccessible in the same proportion as the ore. It is an ascertained fact, for example, that a chief obstacle to renewal of operations at the Peak Downs mine is the dearth of fuel, consequent upon the distance it has now to be carted. Even at Mount Perry, where operations had been comparatively of brief continuance, the same growth of expense had begun to make itself felt. The profitableness of extensive operations, in many instances, depends upon a small margin, and in the case of mines turning out their thousands of tons of ore weekly or monthly, a few shillings one way or another in the cost per load of fuel may decide the balance of profit or loss. But the foregoing is only one, and it may be for Australia a minor, application of the discovery. The process is said to be suitable for the treatment of auriferous pyrites. If a practical application to this use be indeed attainable, the future of many gold-fields in these colonies will be entirely changed. There are rich mines in scores lying abandoned because the "mundic has come in," and although the pyrites is proved by assay to be rich in gold, no profitable method of separating the precious metal from its base association has hitherto been devised which is available for application on the spot.

The electric light on the City of Berlin has given such general satisfaction that it has been permanently adopted for lighting the saloon, steerage and engine-room, and will soon be supplied to the other vessels of that line.

PROGRESS IN SCIENCE AND THE ARTS.

Technology.

The Electrical Reproduction of Light.—The world of science has lately been made interested in the announcement from several sources that the capabilities of the electrical current were about to be developed in a new and altogether surprising direction; in short, that inventors were busily engaged, and with every prospect of success, in solving the astonishing problem of transmitting visual phenomena, and reproducing them at a distant point, precisely as we can transmit audible sounds by the telephone, or reproduce autographically, at a distance, written signs and letters.

In connection with this subject, the names of Messrs. Connolly and McTighe, of Pittsburg, Dr. Hicks, of Bethlehem, Pa., Mr. George R. Cary, of Boston, and Prof. A. Graham Bell, of telephone fame, are prominently identified. These inventions, so far as they have been made known, depend upon the peculiar sensitiveness of selenium to light, but none of them have been, as yet, sufficiently simplified to become practically useful. From what has been achieved in the brief period that the subject has been taken up, we are warranted in the belief that "seeing by telegraph" will shortly be as little a matter of surprise as hearing by telegraph.

Telegraphic Notes.—The *Edison Telephone Company* is now in full operation in Paris, with over 350 subscribers.—An *ancient telegraphic cable* was resurrected near High Bridge, on the Harlem River, by some laborers, who were digging a pit for a locomotive turn-table. It had been down so long that its existence had been completely forgotten. It turned out to have been manufactured by Mr. S. T. Armstrong, in 1849, and laid down by Mr. W. W. Marks, at present Superintendent of the Bishop Gutta-Percha Works, this city, for the New York and Boston line. As permission was refused to cross the bridge, the insulated cable, of which the resurrected section was a part, was laid across the river. It would have been interesting had the qualities of this long-buried cable been tested by telegraphic experts, though nothing of the kind has been reported.

"I am the Monarch of the Sea."—The complete monopoly that England enjoys of the steam-service of the North Atlantic, with reference to this country, is shown by reference to the statistics of navigation as reported in the blue book for 1879.

From these statistics it appears that since the year 1870 the British steam tonnage has increased from 1,111,375 to 2,508,102 tons, while the sailing tonnage has decreased, during the same time, from 4,503,318 to 4,013,187 tons. These figures, it may be incidentally remarked, indicate that a gradual revolution is taking place in the ocean carrying-trade, in which steam is steadily displacing sails. The statistics further show that, while the amount of foreign commerce clearing at British ports since 1874 has barely held its own, that of Great Britain has increased about 84 per cent. As regards the United States, the clearances of steam shipping from England to the U. S. rose from 1,445,000 tons in 1875, to 2,448,000 in 1879. The total arrivals and clearances of steam vessels from the port of New York, during the month of April just passed, show the state of affairs perhaps more pointedly.

The arrivals from all foreign ports were 110 British steamers to 21 American; and clearances were 102 British to 18 American. Here it is to be noticed, that of the American steamers all were engaged in the West Indian, Mexican, and South American trade, and not a single one was bound for a European port. Save and except the four steamers of the "American line" running from Philadelphia to Liverpool, the British have the steam monopoly of the North Atlantic, and are masters of our carrying-trade.

Color-Changing Compounds.—The double iodides of silver and mercury and of copper and mercury are, perhaps, the most remarkable known to chemists in respect to their color sensitiveness when exposed to moderate changes of temperature. They were first described and their peculiar properties pointed out by Meusel, a German chemist. The first is prepared by adding a solution of nitrate of silver to one of iodide of mercury, dissolved in iodide of potassium. The resulting precipitate has a lemon-yellow color, which becomes at once a deep orange when gently warmed, returning again to a bright yellow on cooling.

The copper-mercury iodide, which is still more remarkable, is prepared by adding to a warm solution of iodide of mercury in iodide of potassium some sulphate of copper, and then sulphurous acid. The precipitate is a brilliant carmine-red salt which turns brown, and finally an intense black on being gently heated—returning again to carmine on cooling. These changes occur within the limits of 60° and 212° Fahr., and may be easily and strikingly exhibited as a lecture experiment, by mixing the precipitates with a little water (to which some mucilage may be added), and attaching a thin coating of each to a piece of card-board. A number of instructive experiments may be performed with them. A piece of slightly-heated metal, held for an instant in contact with the card, or close to it, will at once bring out an image of itself—a veritable heat-photograph. Many other striking experiments will suggest themselves to our chemical readers.

Messrs. Mayer and Barker have prepared the carmine salt as an application to pillow-blocks and other parts of machinery liable to injurious heating, where it will exhibit its characteristic color changes to the eye should any excessive heating take place.

Engineering.

Trouble at St. Gothard.—The newspapers of the day record the fact that continued difficulty is experienced at the tunnel from the soft stone which gave such trouble when first met with, as we recorded at the time. The vaulting is reported to have given way several times, and it has required the greatest care and constant staying with timber to prevent the passage-way from closing entirely. It was thought that a wall of granite, six feet thick, would support the superincumbent mass, and this has been lately finished; but the last reports assert that even this is giving way, and that the engineers are sorely puzzled to meet the difficulty, which now seriously threatens to retard the completion of the tunnel. The geologist of the work has expressed the opinion that the trouble may be obviated by making a wide curve, to get around the soft rock instead of going through it. This would necessitate considerable timbering and

an entire reconstruction of that part of the tunnel, which would entail much delay. Still later accounts report briefly, that the difficulty has been overcome—without, however, stating how.

British Railroad Accidents.—The *Railroad Gazette* is authority for the statement that in the year 1879 there were no less than 1032 persons killed and 3513 injured on the railroads of Great Britain. In this country, on the other hand, in spite of our reputation for recklessness, our railroads are responsible in the same time for only 180 deaths and 644 injuries to persons. This showing our contemporary holds to be highly creditable to American railway management.

It must be admitted, in making such a comparison, that the condition of things in the two countries is very different, since on the railways of Great Britain there is naturally a much greater concentration of traffic both of passengers and goods; but, on the other hand, the immense extent of the railway lines operated in this country interposes a corresponding greater difficulty in keeping the road-way in good condition, so that the comparison is not an unfair one.

CONSPIRACY CASE.—A half-dozen workmen in the Vulcan Steel-Works, St. Louis, were arrested about two months ago, charged with conspiracy, they having struck for higher wages and quit work at a time when two heats of iron were partially melted and the cupola-ladle filled with molten metal. The Vulcan superintendents succeeded in getting other men to take their places in time to prevent actual loss; but the strike having taken place at a critical time, and with the evident purpose of compelling the employers either to grant their terms or suffer great loss, the men were arrested for conspiracy. The case is likely to be very sharply contested. The attorney for the men moved to quash the proceedings, on the ground that no offense had been committed; but the Court of Criminal Correction has decided that, if the circumstances as alleged can be proved, an offense will be clearly made out, and the motion to quash was therefore overruled. The men will now be put upon trial, the case being of a kind to excite a good deal of interest among both employers and work-ing-men everywhere.

GENERAL MINING NEWS.

ARIZONA.

ORION.—A correspondent of the *Citizen*, writing from Oro Blanco, says of the properties of this Philadelphia corporation: The Warsaw mine is opening up in regular bonanza style. I saw recently samples of ore brought from the main shaft that by actual scorifying assay, at the Arivaca mill, went over \$2000 per ton. Recent developments on the Montana exhibit large lodges of high-grade ore. The company is sinking a shaft and running a tunnel along the course of the vein, in fine ore the entire length of the tunnel.

GLOBE DISTRICT.

The *Silver Belt* of the 29th has the following: **MCCORMICK.**—The main shaft is down over 315 feet, and it is the intention to sink 200 more; cross-cuts driving at various levels to tap the ledge which dips to the northeast. Drifts each way, at 250 feet, were run 100 feet each, the one to the north cutting an ore-body 18 feet or more in width, that will average \$45 per ton; but the ground is so broken here that the company has decided to sink to a solid formation.

TOMBSTONE DISTRICT.

TOMBSTONE M. AND M. CO.—The *Citizen* of the 5th inst. says that the most important news from these mines is the development of the new discovery in the Tough Nut. The vein was encountered in drifting from the winze in the 113-foot level, after passing through 8 feet of porphyry. The ore-body is 20 feet wide, between regular vertical walls, and is all high-grade ore. It is an entirely separate body from any thing yet found, and is the farthest point of development toward the upper end of the claim. For convenience in handling the ore, they have drifted to the body from the 113-foot level, erected a windlass, and are sinking a winze which is now down 25 feet in solid ore, and development is rapidly going on. The Good Enough east drift is in rich ore at 100 feet from the shaft, and furnishes from 12 to 15 tons of very high-grade ore per day.

The *Epitaph* of the 29th has the following notes on the mines of that vicinity: **HEAD CENTER.**—The main working-shaft is down 265 feet, and is sinking at the rate of about two feet per day. North from the main shaft 248 feet, an air-shaft has been sunk 236 feet. From this shaft two levels connect with the main shaft, one at a depth of 132 feet and the other 210 feet. Connection with the main shaft in the latter level has been made. On the 132-foot level, a cross-cut has been run 50 feet, all in vein-matter. On this same level, a drift has been run 57 feet south. On the 210-foot level, the south drift is in 100 feet.

EMPIRE.—Developments are going forward on this mine, and both reels on the steam hoister are running day and night. The new shaft is down 240 feet. It is sunk on the west side of the vein, and cuts the dip of the ledge at 190 feet. The shaft is all in ledge-matter, mixed with some ore, and any shift is liable to cut into the ore-body. The characteristics of the ledge are the same as in the old shaft 300 feet distant, and from which large quantities of good ore have been taken. This old shaft is down 203 feet, from the bottom of which a drift was in 250 feet on Wednesday, when the workmen were taken out and put at work in the new shaft, at the 209-foot station, from which point the remaining 50 feet of the drift will be driven.

GRAND CENTRAL.—The main shaft is down 240 feet, where a station will be made for the fourth level. The shaft may be driven to a depth of 285 feet before another cross-cut is run through the vein. On the south end of the claim, 1200 feet from the main shaft, is the new prospect shaft, which, at the time of our last report, was down 40 feet, with a 40-foot drift following the vein north toward the main shaft. This drift is now in 147 feet, following a vein of very handsome ore the entire distance, which averages two feet in width. About 100 tons of this high-grade ore are on the dump.

CALIFORNIA.

The antimony mines of Kern County, known as San Emico, have been sold to Philadelphia parties. The mine is said to be very rich, the rock assaying as high as 68 per cent of the mineral. The new purchasers have abundance of means, and intend to begin work in July, when they will probably have 150 miners at the mines.

BODIE DISTRICT.

Official reports for the week ending May 29th say: **BELVIDERE.**—On the 500-foot level, the main south drift is in 113 feet; progress during the week, 30 feet. The ledge is fully four feet wide between the walls, one half of which is good ore. The west cross-cut, north drift, 500-foot level, is in 34 feet.

A later report, dated June 3d, from this mine says: A ledge has been struck in the south drift running from the winze on the 500 level of this mine that is rich in wire-silver. The width of the ledge has not yet been ascertained, but a specimen of the rock shows very rich in silver, and indications lead to the supposition that an extensive body of ore will be shortly developed.

BULWER CON.—The south drift on the Stonewall ledge, 280-foot level, has been extended during the past week 12 feet; total length, 90 feet. The ledge is 2½ feet wide and is looking well. The south drift on the Ralston has been run 14 feet; total length, 210 feet. The ledge is 3 feet wide, of milling-ore.

DEFIANCE.—The *Standard* of the 5th says: Operations were this morning resumed on the mine, which has been idle since last fall. The Defiance is situated south of the Dudley, on the eastern slope of Bodie Ridge, has steam hoisting-works and the finest building on the belt. An incline shaft, following the ledge most of the way down, has been sunk to a depth of 500 feet, where a considerable flow of water was encountered. At a depth of 475 feet, a station was opened, and the other 25 feet of the shaft is used as a sump. From this station, cross-cuts were to-day started both east and west.

DUDLEY.—Since last report, the west cross-cut, 500-foot level, has been advanced 25 feet, making the total distance west from shaft 435 feet; progress during the week, 35 feet.

JUPITER.—The report of superintendent for week ending May 29th is as follows: Total distance from surface to 600-foot level station floor, 617 feet 1½ inches. Main shaft, below 600-foot level, 6 feet; progress during the week, 3 feet. Six hundred foot level, station 20 feet (complete); progress, 12 feet; west cross-cut in 13 feet. Five hundred foot level, south drift No. 3, in 110 feet; progress, 25 feet. On the 600-foot level, the west cross-cut is in most favorable ground, in which we shall make good progress during the coming week. On the 500-foot level, in south drift No. 3, we continue to follow the ledge, still pitching to the east and north, the drift having a course, as at date of last report, nearly due east. The ledge maintains a width of from 12 to 18 inches, all good ore. Average assays of ore extracted during the past week, \$60 per ton.

MCCLENTON.—The three-compartment shaft is 150 feet below the 300-foot level, and well timbered. The ground is porphyry, interspersed with iron pyrites and bunches of quartz.

SUMMIT.—The north drift, 530-foot level, has been advanced 12 feet; total length, 318 feet. The ledge is 3 feet wide. The south drift is in 349 feet; progress for the week, 11 feet, showing a vein in the face 12 feet wide. The east cross-cut from the south drift, 530-foot level, has been run 12 feet, and is at present in hard rock.

STANDARD CONSOLIDATED.—The north drift from the east cross-cut, 700-foot level, is in 105 feet, having been extended during the week 15 feet. The north drift, 500-foot level, is in 12 feet. The south drift has been run 14 feet. The work of timbering the drift on the 385-foot level is completed. The north drift on the main ledge, 550-foot level, has been advanced 13 feet; total length, 186 feet. The upraise on the West Standard has reached a height of 70 feet; have sunk a winze from the 450-foot level (incline) 30 feet. The west cross-cut, 300-foot level (incline), has been extended 42 feet. The upraise from the east cross-cut, 550-foot level is up 30 feet.

TIOGA CONS.—Superintendent's report says that since last report the west cross-cut, 800-foot level, has been advanced 34 feet. The face still continues to show clay and quartz mixed. The vein is pitching from us, and our belief is that we have not yet reached the foot-wall of it; but from the character of the ground passed through, and its being so thoroughly and uniformly mineralized, I think it can not be far distant. There is nothing new to report in the upraise on the vein from north lateral drift No. 1. We made 13 feet in this working since last report, and the vein looks about as it did then.

THE NOONDAYS.—Superintendent's report, of June 5th, records no change in the south stopes, 200-foot level. The north stopes, No. 2 vein, 300 level, are increasing in magnitude as we stope south, and although considerable ore is milled from this quarter, but little impression is made on the ore-body. These stopes measure from 15 to 20 feet in width, and are almost free from any waste. The No. 1 south stopes are looking well, and we are milling some ore from this source. During the week, we have cut a vein in the east cross-cut from the main south drift, 312 level. This vein is 2 feet 6 inches wide, of very fine ore, free from any waste. This vein was cut 100 feet north of where last struck, and drifted upon some 300 feet north. It has improved very much in quality and size within the above distance. We are now preparing to mill this ore.

COLORADO.

CLEAR CREEK COUNTY.

We extract the following notes from the *Georgetown Courier* of the 10th inst.: **COLORADO CENTRAL CONSOLIDATED.**—Work is progressing satisfactorily. The back-stope of the 140-foot level, west of discovery shaft, is in a good body of ore. The 180-foot level, east of the main winze, is in about 150 feet. The ore-vein is looking better, having changed from the south to the north side of the drift, and with the change in position also came a change in quality. On the 235-foot level, east of the main winze, a cross-cut that has been run to the north about 35 feet has intersected a vein of good ore. The south ore-vein on this level is about the same as last reported. The 290-foot level has reached 140 feet, and is in good ore. In the back-stope over this level, the ore has improved materially, the last lot of ore milled running 600 ounces. The 330-level is now in about 175 feet. It is driven on one of the middle ore-veins for the winze raised from the Marshall tunnel, and so far has produced but little ore.

FRED ROGERS.—The lessees have completed the cross-cut from the 280-foot level to the north ore-vein, and are now drifting west on it, with a fair showing of ore. Stopping on the 230-foot level is also progressing, the back of the stope showing the usual amount of rich ore.

BROWN MOUNTAIN.—A rich strike is reported to have been made in Brown Gulch, about a quarter of a mile above the Hercules & Seven-Thirty mine. A miner found the float-ore at the surface, and ran an open cut 10 or 15 feet into the hill, when he struck the ore-vein of the lode, which at the point of intersection shows 18 inches of ore, with quartz mixed with it, that assays 245 ounces. The lode is a large one.

FAIRMOUNT.—The *Idaho Iris* says of this property, located in Hukill Gulch, that sinking is progressing on the shaft, which is about 170 feet and showing a fine body of high-grade mineral. The tunnel is pushed ahead to intersect the lode near the junction of the Fairmount and Shaffin surveys, both locations being on the same vein. Some 200 feet of the tunnel have been driven through slide, and an average of about three feet per day has been made. When the tunnel has intersected the lode and the shaft reached the depth of the tunnel level, drifting will be commenced simultaneously to make connection between the two.

The same paper has the following notes from mines in its vicinity:

VIRGINIA.—This lode is owned by the Newark Mining Company, of Newark, N. J. The development will be begun by sinking the shaft, which is down to a depth of 70 feet. As there is a great deal of water in the shaft, the width of mineral streak is unknown. The mineral is a combination of iron and copper pyrites, zinc-blende, and galena, running well in both gold and silver. The vein is a strong one, and, judging from the massive character of the mineral upon the dump, of which there are several tons, there must be quite a body of it in the shaft.

GREAT AMERICAN.—This lode has been sunk upon, and the shaft has reached a depth of 60 feet, the last ten feet in mineral containing quantities of black oxide of copper.

CUSTER COUNTY.

SILVER CLIFF.—The mill is working from 46 to 50 tons of ore per day. It will soon be stopped for a clean-up, and then the drying capacity will be increased by new flues and the main stack be moved to where the drying-stack now stands, thereby utilizing all the heat from the boilers. An additional boiler-room is also building, to increase the speed and capacity of the mill. Preparations are making to put up concentration works to concentrate the tailings; this will enable them to save 95 per cent of the silver instead of 75 per cent, which is all that is now saved.

The *Silver Cliff Miner* of the 6th says that a magnificent strike has been made on the Bijou property, including, as it is claimed, the Bijou, Red Rock, Pine Tree, and Ashland discoveries. The strike was made at 36 feet deep on Pine Tree, three and a half foot vein and both walls.

The Eclipse lode, which joins the King of the Carbonates, has reached a depth of 140 feet, and shows iron, galena, and gray copper. The King of the Carbonates is down 75 feet, and show two streaks of gangue which runs 60 ounces of silver and 60 per cent in lead.

GILPIN COUNTY.

The *Register-Call* says:

CALIFORNIA.—The work of sinking the main shaft is going on rapidly, the depth attained being 1070 feet. Yesterday (the 7th), large quantities of smelting-iron were raised from the bottom of the mine. The east and west 1000-foot levels are driven through continuous bodies of milling and smelting iron.

MONMOUTH-KANSAS.—The main shaft, the deepest in the State, 1105 feet, is to be sunk to a farther depth of 60 feet. The foreman of the mine has begun sinking a water-sump in the east 1000-foot level, and putting in plats to expedite sinking. A pentice will be thrown across the shaft at this point, to protect the miners engaged in sinking. It is expected that connection by winze will be made between the 1100 and 975 foot levels in a few days, which will afford them plenty of air. The lower levels are in about 90 feet each way from the shaft, and back-stopes are being run. Some thirty miners are employed in the back-stopes above the 600-foot levels.

LUCERNE.—From the foreman, the reporter learns that since his last visit to the new shaft sinking on the vein, at that time down 35 feet, the quartz then mentioned as forming the main crevice-matter is gradually superseded by live rock containing considerable mineral. The shaft is sinking night and day, the indications for a body of pay being more favorable than at any time heretofore.

RALLS COUNTY MINE.—This mine, on Quartz Hill, and transferred some time since to the Ralls Mining Company, has been put in the best of shape for deeper development. The main shaft is down 300 feet, the exploitations of the vein to a greater depth being still continued. To facilitate this, a pentice has been thrown across the shaft below the 280-foot levels. Fully two feet of the foot-wall have been taken up, to carry out the established incline of the shaft, the crevice diverging in its general course to the south, at an angle of about 30 degrees. The east level has been driven about 60 feet, the face of which gives strong indications of a larger body of ore immediately below, which will be reached through a lower level to be inaugurated hereafter. A good body of ore remains untouched overhead, extending fully 100 feet. The opposite level appears to be in pinched ground. A level west, 220 feet from the surface, is being run, and the ground above removed by back-stopes.

LAKE COUNTY.

The *Leadville Herald* of the 11th inst. says that the Chrysolite, Chief, and Iron mines are all at work with a limited force and at a heavy expense. The Amie and Climax have started up also with the same disadvantages. The Glass-Fendery is working a small force, and beyond these, the mining center of Leadville is almost completely shut down. Some prospect-holes or unproductive mines are working a small force, but actual mining is at a stand-still.

A dispatch, dated June 15th, received at the office of the Chrysolite Company June 16th, from W. S. Keyes, General Manager, says: "Strike is unquestionably over. Committee of strikers made proposition to-day to accept our terms. Shipped 117 tons to the smelters."

BLACK PRINCE.—The *Leadville Herald* of the 10th says that notwithstanding some of the workmen of the Black Prince were fired upon a few nights ago, a full force is kept at work. The north shaft is now in a fine-looking quartzite similar to that found in the Colorado Prince. On the No. 2 shaft, more to the south, a new twenty horse-power engine is going up, and will be ready to start up in a few days. This shaft, in addition to the northern one, will then also be started up.

CATALPA.—This mine has never ceased work since the strike was inaugurated.

CLIMAX.—The *Leadville Herald* of the 9th says that Manager Breck, of the Climax Mining Company, gave information that he had started up work on the mine yesterday, with a force of thirty men.

COLORADO PRINCE.—This mine is worked to its fullest extent.

GLASS-FENDERY.—The Glass-Fendery was started up on the 8th, and there is no trouble in procuring men.

HIGHLAND CHIEF.—The *Leadville Herald* of the 11th says that extensive hoisting-works and machinery are to be at once put up on this mine. It is proposed to resume operations on the mine in a very few days. In the ore-house is a large amount of ore, although several hundred tons have recently been shipped, and no work has been done on the mine since the inauguration of the strike.

IRON MINE.—The *Leadville Herald* of the 10th says that the superintendent of this mine reports every thing progressing well at the mine. He is working 90 men in the mine, and says they are a first-class set of miners. The development-drifts are all kept running, and all the difference it makes to the company is, that not the usual amount of ore is produced. The framework for the large new ore-house is raising, and a great many carpenters are employed upon this and other surface building.

The *Democrat* says of the Bulls'-Eye mine, the property of this company, that an incline 75 feet deep, with drifts running north and south, each upward of 50 feet in length, show as fine a body of mineral as one could wish to see anywhere. A few men were at work here, but no ore was being taken out.

LITTLE CHIEF.—The ore-shipment from the Little Chief on the 9th amounted to 147 tons and 1847 pounds. On the 10th, the amount was about the same.

LOWLAND CHIEF.—The *Leadville Herald* says that on the No. 2 shaft, a large new shaft-house is nearly completed. The new twenty horse-power engine, which arrived about ten days ago, has been put up in position, and is running in good shape. The shaft has been allowed to partly fill with water during the delay in getting up the machinery, and this is being hoisted out. A force of miners will be put at work as soon as the mine is dry.

MORNING STAR.—This mine having so much surface work to complete, and having finished the necessary timbering in the drifts, all work has been closed down in the mine.

ROBERT E. LEE.—The *Democrat* of the 8th says that the Robert E. Lee set ten timbering-men to work Monday morning, but, before much had been accomplished, they were requested by the Miners' Union to cease. After a few moments' deliberation, they decided to comply with the request, and quit work.

VIRGINIUS.—The *Democrat* of the 8th says: A new hoisting-apparatus has been erected over shaft No. 3, through which all the mineral will be hoisted in the future. The shaft strikes the working level of the mine at a depth of 150 feet from the surface, where there is a fine ten-foot vein of carbonates. The mine will begin taking out ore this morning, if not disappointed in its miners.

PARK COUNTY.

SACRAMENTO MINING COMPANY.—From a long description of the property of this company, in the *Fairplay Flume* of the 10th inst., we make a few extracts: The property consists of seven and a half claims, embracing seventy acres, located on the eastern slope of the Mosquito Range, at the head of Little Sacramento Gulch, within about seven miles of Fairplay. Proceeding along the tunnel (the dimensions of which are 8 by 6 feet) for 244 feet, we came to the Lark winze, leading to the workings under the Lark tunnel, and which is 12 feet in depth. In the workings below the Lark tunnel, has been encountered what appears to be a separate and distinct vein from the one found in the tunnel above, as its formation is of an entirely different nature, but none the less rich. From the main vein in the Lark tunnel has been extracted nearly

all the ore taken from the property up to the present time, except what has been broken in the development of the mine. The Lark tunnel taps all the lower workings. In the October tunnel, another of the main arteries in the property, they have followed the main vein in the west drift to its apex through uniform ore, and in the workings west of the October tunnel a large block of high-grade mineral remains untouched. A block of ground lying between the north side of west October drift and Sacramento tunnel No. 2 is not sufficiently developed to give any measurement, but, judging from present development, it contains a large body of uniform grade-ore. The average grade of the ore from the mine runs as follows: First-class screenings, from 250 to 300 ounces; first-class pickings, from 300 to 325; second-class screenings, 100 to 150; and second-class pickings the same. The ore at the smelting-works clears \$226 per ton, net.

DOLLY VARDEN.—A force of sixteen men is sorting ore and at work in the main tunnel. This mine is in excellent condition to put out an enormous quantity of ore, but no effort will be made to test the capacity of a big force until a tunnel intended to intersect the workings is finished. Work on this was commenced some weeks ago, but had to be dropped on account of the scarcity of miners and the necessity of employing the force engaged on the tunnel in other parts of the mine. The Dolly Varden is looking well, and sent down a big shipment of 900-ounce ore day before yesterday.

SUMMIT COUNTY.

The following items are from the *Kokomo Times* of the 5th inst: In the Iron Hill tunnel, in the Swan River Mining District, the Mount Nebo Company lately struck a two-foot crevice of lime-porphry, which, being assayed, yielded 48 ounces of silver. The crevice is well defined, having walls of almost jet-black limestone. About 300 feet above the mouth of the tunnel, carbonates were found at the surface. One hundred feet farther up, a shaft is sinking to tap the mineral at a distance of 30 feet from the outcropping. At the Washington lode of the Fuller Company's mines, are at least 700 tons of lead and iron carbonates. The Atlantic lode adjoining it has about 300 tons. It is estimated that the whole body of mineral on the dump will run from twenty to thirty ounces. The Frisco Bell mine, on Chief Mountain, shows a large four-foot fissure of mineral. In the crevice are fully two feet of a solid fine-grained galena, which runs from 30 to 40 ounces. One thousand tons of mineral are now on the dump of the White Quail mine. It will run from 35 to 45 ounces.

DAKOTA.

STANDBY.—From a full description of this mine and mill, appearing in the *Rapid City Journal* of the 5th inst., we glean the following: The discovery-shaft of the mine goes down from near the summit of a lofty mountain on the south side of the Little Rapid, and about half a mile below the town of Rockford, the trend of the mine being northeasterly and southwesterly. The discovery-shaft is entered by a tunnel, the initial point of which is 100 feet south of the discovery. This tunnel starts in good millable ore, and is run through good millable ore, throughout its extent of 100 feet, and no wall has yet been reached by it. Through this tunnel the ore is run out for delivery at the mill. From this tunnel, where it enters the discovery-shaft, a drift was started which circles around to the southerly wall, and it runs 120 feet through continuous bodies of good millable ore. The mine is tapped by another tunnel, the initial point of which is 400 feet northwest of discovery-shaft, and 130 feet below the croppings of the mine. Rich ore-bodies were encountered 100 feet in, and the tunnel has continued 120 feet through rich ore, and is still in rich ore—the west wall not having been reached. Still another tunnel is being excavated to intersect the vein 200 feet below the surface, or 114 feet below the present lowest development. It is now in 200 feet, and it is believed the vein will be reached in about 130 feet farther tunneling. Night and day forces are engaged in this tunnel; but they are now working in a very obstinate, close-grained rock, and slow progress is being made. Running a lighted candle along the walls of this tunnel showed that the "mother-rock" is talcose and micaceous slate, with dikes of quartzite intervening. The Standby ores run from four to ten dollars to the ton; in other words, they yield a net profit of from three to nine dollars per ton. It is now in contemplation to put 60 additional stamps in operation, which would double this rate. The water-power owned and controlled by the company is equal to running 200 stamps.

IDAHO.

We condense from the *Avalanche* of June 5th: The force of workmen at the Potosi mine will shortly be increased. The water will all be taken out by Tuesday next, after which the second level will be opened up. There is a fine body of rich ore in sight, and every practical man acquainted with the mine considers that it has a most promising future.

The Tremont mine continues to look well, and the new mill is making favorable progress.

There is a considerable quantity of rock at the Owyhee and Clearbrook mines awaiting shipment to the mills.

The Scales arrastra is still working on tailings, principally from the Owyhee dump. There are over 500 tons to be worked.

There are five men ground-sluicing about the Whisky Gulch mine. This mine shows fine prospects, about seventy tons of good rock having been taken out during the past few months. A tunnel has been pushed 450 feet into the side-hill, and several valuable chimneys opened up. The rock will be worked at the Leonard mill.

The Black Jack mine will start up to-day. For the present, the ore will be taken care of at the mine, and shipments to the mill will not commence until the roads are in better condition. The snow is rapidly disappearing in all directions, and teams will soon be busy hauling ores from various mines in this vicinity.

MONTANA.

ALTA-MONTANA.—From a letter from the president of this company, printed in the *Butte Miner*, we learn that the whole face of the Williams tunnel is in ore; both of the Custer tunnels are in ore, the lower one showing a three-foot vein of galena assaying 104 ounces. The smelter is in very successful operation, turning out 8000 pounds of bullion daily. The shipment East last week of bullion was 55 tons, the assay value of which per ton was 330 ounces in silver and \$73.38 in gold. Two car-loads of machinery are now in transit to Wickes, including part of a pump and hoisting-works for the Comet mine. A 35-ton smelter has also been contracted for, and will soon be shipped from Chicago by Fraser & Chalmers to the Alta-Montana Company.

The *Miner* has the following notes of the mines in its locality:
GAGNON.—The main shaft has attained a depth of 250 feet, at which point sinking was suspended for the present. The east lower level is in ore, of which a breast of considerable width is being extracted. Some of the ore carries a heavy percentage of iron, but assays high in silver and copper. The daily output is in the neighborhood of 50 tons, of which 30 are shipped to the Colorado smelter for reduction.

BELL.—The middle shaft, in which a strike was recently reported, is down 130 feet, and work is still vigorously prosecuted. The lower level, running east from a point 100 feet from the surface, is about 50 feet in length and is yielding some magnificent silver ore, carrying also from 30 to 50 per cent copper.

MOUNTAIN.—This is a copper mine owned by the Montana Copper Company. It is developed by an incline and perpendicular shaft 172 feet deep, from the bottom of which the main level has been extended east 245 feet, and west 107 feet. In the east drift, at a distance of about 150 feet from the shaft, a cross-cut has been run something over 20 feet south, exposing in the face the hanging-wall, which at this point is almost 30 feet from the foot-wall.

COLUSA.—This is another copper mine belonging to the same company, and

located a few hundred feet west of the new smelter at Meaderville. From the bottom of the shaft, which is 160 feet deep, the east level has been extended to a length of 243 feet. The face is in copper ore of an improved quality, assaying on an average 40 per cent after sorting. The west level is in 165 feet, but is not pushed ahead at present. The product of the Colusa is chiefly concentrating ore, of which probably not less than 4000 tons are on the dump. There are also ready for shipment 1050 sacks of first-class copper ore, which will be sent East for reduction.

NEVADA.

THE COMSTOCK LODE.

The *Gold Hill News* summarizes the situation on the Comstock for the week ending June 9th as follows: A very encouraging new feature consists in the fact that the Savage mine is yielding a considerable amount of ore daily from the old upper workings of the mine, reopened through the old Potosi tunnel, which proves to be of better quality than anticipated, and of unknown extent. It pays well for milling, although not of high grade.

The old bonanza of the Consolidated Virginia and California is not worked out yet by any means, but continues its goodly yield of remunerative ore, paying all expenses and carrying over a continued surplus which might accumulate and ripen into a dividend or so before long.

At the Union shaft, the station is being cut out for the 2500 level, and a drift will soon be started for connection with the Sierra Nevada, which, when completed, will give full opportunity for ore-extraction and development on that interesting level. This is the most important point at the north end of the Comstock.

The C. & C. shaft is about to be sunk deeper for further explorations. At the south end of the lode, there is nothing exciting in sight, but good prospects. The good prospect found on the 2760 level of the Belcher is now exhausted, but gives hope yet. Work is resumed both north and south on the 3000 level, but work is impeded by the great heat and the heavy flow of very hot water.

SUTRO TUNNEL.—During the month of May, the header of the north lateral branch was advanced 321 feet. Total number of feet in branch June 1st, 3149. At noon of May 6th, work in the header of the south branch was resumed. From that date until June 1st, the header was advanced 315 feet. Total number of feet in branch on the 1st instant, 1161.

EUREKA DISTRICT.

The following notes are taken from the *Ruby Hill Mining News* of June 5th:
EUREKA CONSOLIDATED.—Work on the new three-compartment shaft is pushed vigorously. Three eight-hour shifts of picked men have been put on the work by the superintendent, who has given orders to push it as fast as possible. The shaft is down 63 feet. Twelve sets of timbers have been put in place. This has all been done by hand-work. A good engine is also in place for hoisting, and, in a few days, two powerful Ingersoll steam-drills will be used to drill the holes required for blasting the hard rock.

RICHMOND CONSOLIDATED.—Early in the week, a cave was struck in the drift running from the 200-foot level of the Richmond. It is 80 feet long, 40 feet high, and 40 feet wide, with ore under and above, but of what grade we have been unable to learn. Another cave 196 feet long, 30 feet wide, and 20 feet high, was discovered in the mine on Friday, in a drift going from No. 14 chamber. There is ore in it, and some splendid specimens of crystallized lime. Eleven contracts were let in this mine on the 1st.

SILVER CONNOR.—This mine is down 68 feet, and from the first level the main winze is sunk 155 feet through a solid body of ore. A number of drifts have been run at right angles upward of 130 feet, and several cross-cuts from 30 to 40 feet through the ore-body without meeting any signs of either foot or hanging-wall. The bottom of the winze is in ore, as well as the face of the various drifts and cross-cuts.

PROPOSALS.

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:

For Gas Fixtures and Iron Bedsteads; William A. Mundell, Phoenix Building, No. 16 Court street, Brooklyn	June 19, 1880.
For the Masonry, Carpentry, and Plastering for a Theater; F. H. Fossett, 63 Exchange street, Portland, Maine	" 19, "
For Military Supplies; Depot Quartermaster's Office, No. 1139 Girard street, Philadelphia, Pa.	" 20, "
For Steam Communication around the Island of Jamaica; British Consulate, No. 17 Broadway, New York City	" 21, "
For Swing and Stationary Bridges; F. Braun, Secretary, Department of Railways and Canals, Ottawa, Canada	" 21, "
For Fuel; Pierre J. O. Chauveau, Sheriff's Office, Montreal, Canada	" 21, "
For Coal Supplies; Pierre J. O. Chauveau, Sheriff's Office, Montreal, Canada	" 21, "
For Carpenter, Joiner, and Cabinet Work; James W. Eaton, Superintendent New Capitol, Albany, N. Y.	" 21, "
For the Improvement of the Harbor at Charleston, S. C.; U. S. Engineer Office, Army Building, New York City	" 21, "
For a Passenger and Traffic Bridge, with Swing; G. F. Baldwin, Secretary-Treasurer of the Corporation of Emerson, Province of Manitoba.	" 21, "
For 1100 tons of Furnace Coal; Committee on Fuel and Street Lights, City Hall, West Newton, Mass.	" 21, "
For the Construction of Ten Pile Jetties; U. S. Engineer's Office, Cleveland, O.	" 22, "
For Graduation and Masonry; Chief-Engineer's Office, No. 1104 Main street, Richmond, Va.	" 24, "
For Supplies for U. S. Naval Asylum; R. L. Law, Navy Department, Washington, D. C.	" 24, "
For Improving "The Narrows" of Sabine River, Texas; U. S. Engineer Office, Hendley Building, Galveston, Texas.	" 25, "
For White Oak and Yellow Pine Logs; C. J. Emery, Navy Pay Office, 45 Milk street, Boston, Mass.	" 26, "
For Constructing a Main Trunk Sewer; John Graham, City Engineer, Columbus, O.	" 28, "
For 1600 to 2000 tons Lehigh Broken Coal; S. E. Chamberlain, Warden's Office, Concord, Mass.	" 28, "
For Improving St. Augustine's Creek, Georgia; U. S. Engineer's Office, Army Building, New York City	" 30, "
For Printers' Supplies; O. H. Irish, Chief of Bureau of Engraving and Printing, Washington, D. C.	" 30, "
For Material for Use of the Government Printing-Office; John D. Defrees, Public Printer, Washington, D. C.	" 30, "
For Stores for Grand Trunk Railroad Company; Joseph Hickson, General Manager, Montreal, Canada	July 1, "
For Rolling Stock; F. Brant, Secretary, Department of Railways and Canals, Ottawa, Canada	" 1, "
For Medicines and Medical Attendance to the Territorial Prison; H. N. Alexander, Secretary Board of Prison Commissioners, Yuma, Ariz.	" 1, "
For Furnishing Provisions for the Territorial Prison; H. N. Alexander, Secretary Board of Prison Commissioners, Yuma, Ariz.	" 1, "
For 300,000 Cross-Ties, 2,500,000 feet Broad Measure; A. A. Robinson, Chief-Engineer, Office Atlantic & Pacific Railroad, Pueblo, Colo.	" 5, "
For the Construction of a Superintendent's Lodge, of Brick; Office of the National Military Cemeteries, Washington, D. C.	" 10, "
For Lighting the City of Guayaquil; R. & C. Degener, No. 50 Wallstreet, New York City	" 31, "
For Competitive Designs for the Provincial Parliament and Departmental Buildings; Department of Public Works, Toronto, Ontario	August 1, "

FINANCIAL.

Gold and Silver Stocks.

NEW YORK, Friday Evening, June 18.

Taking the business of the new Board with the others, the total makes a very respectable showing, although the fluctuations have, as a rule, been unimportant, and generally the market is pronounced quiet. A notable feature is the increased business in the San Francisco stocks, especially in the new Exchange which seems to have created a sympathy for the same class of stocks in the old Mining Exchange. Shares that have received but little attention before are showing a larger business than at any time in the past. There is but little hope of any particular movement in mining stocks during the summer months. A number of mines are making a very good showing, and it is the belief that the management will rather husband their resources to make a show in the fall, when a "boom" is expected by all. The Leadville strike is practically over, and there is already a stronger feeling in the stocks of the mines of this camp.

The Comstock shares show a very liberal business, without, however, any other particular feature. California records sales of 2950 shares at \$2.05@2.25. Consolidated Virginia has had an inclination to strength, with sales of 7875 shares at \$3.15@3.45. Sierra Nevada has received much more attention than ever heretofore in this market, the sales amounting to 650 shares at \$14@13. Yellow Jacket, which has been almost entirely neglected for months past, records sales of 360 shares at \$5.50@5.75. Consolidated Imperial has been very quiet, the sales amounting to but 100 shares at 37c. Leviathan records sales of 200 shares at 18c. Union Consolidated, although having been dealt in to but a small extent, shows a larger business than usual, the sales amounting to 195 shares at \$20@19. Original Keystone appears in the transactions for the first time for a very long while, the sales amounting to 100 shares at 25c. Best & Belcher records sales of 100 shares at \$8.50.

The Bodie stocks show a very active business, with considerable fluctuations in some. Bodie has been very quiet, the sales amounting to but 130 shares at \$7.33@6.75. Standard has had a moderate business, although a little weak, the sales amounting to 2700 shares at \$26.50@25. Bulwer, with a moderate business, has been weak, the sales aggregating 1520 shares at \$5@4. Consolidated Pacific only records sales of 100 shares at \$2. Goodshaw has been quite a feature, selling at \$2.50@3.50@2.10@2.60, with sales of 7225 shares. May Belle has been very active and quite irregular, the sales amounting to 39,870 shares at 30@60c. South Bodie only records 200 shares at 25@28c. South Bulwer has been quiet at \$1.05@1.10, with sales of 500 shares. In Tioga, the dealings amount to 500 shares at \$1.60@1.70. Mono only records 30 shares at \$5.

The Tuscarora stocks have been very much neglected, the sales being as follows: Belle Isle, 300 shares at 48@35c.; Independence, 3600 shares at 55@50c.; Grand Prize, 25 shares at \$1; and Tuscarora, 2400 shares at 18@16c.

The miscellaneous San Francisco stocks have been very much neglected. The sales have been as follows: Eureka, 130 shares at \$19.50@19; Caledonia, B. H., 125 shares at \$2.90@2.65.

The dealings in the stocks on the regular lists of the New York Stock Exchange and the New York Mining Stock Exchange have been as follows: Amie has been fairly active, and shows some strength. The sales amount to 16,370 shares at \$1@.1.25@.1.15. Caribou records 200 shares at \$3. Chrysolite has had a good business at advancing prices, the sales amounting to 10,200 shares at \$17.38@20. Climax has been quiet but steady, the sales aggregating 5200 shares at \$2.35@2.70. Deadwood only records 120 shares at \$17.50@17. Excelsior has been dealt in to the extent of 110 shares at \$18. Findley has had a moderate business, but has been weak. The sales aggregate 14,600 shares at 21@19c. Great Eastern has been very quiet and a little weak, the sales amounting to 5500 shares at 68@62c. Green Mountain, with a moderate business, was for a time strong, but lost it all later. The sales amount to 4125 shares at \$3.20@3. Homestake has been very quiet, the sales amounting to but 140 shares at \$32@31. Horn-Silver has been very quiet, and, for a time, weak,

the sales aggregating 235 shares at \$16.50@15.63. Hukill has had a moderate business at fairly steady prices, the sales amounting to 13,150 shares at \$1.70@1.95. Leadville has been fairly active and steady, the sales aggregating 9170 shares at \$1@.1.15. Little Chief has had a moderate business at advancing prices. The sales amount to 8200 shares at \$9.50@11.13. Little Pittsburg has been quiet and weak, with sales of 1525 shares at \$6.50@5.50. Moose has been quiet but very steady, the sales aggregating 5600 shares at \$1@83c. N. Y. & Colorado has been almost neglected, the sales amounting to but 500 shares at \$1.85@1.80. Plumas has been more active than of late, and stronger, the sales aggregating 1100 shares at \$1.85@2.10. Calaveras has had a moderate business, with moderate fluctuations, the sales aggregating 23,300 shares at 75@66c. Central Arizona has been very quiet at \$5.50@5, with sales of 450 shares. The Quicksilver stocks have been very quiet, the sales of Preferred amounting to 200 shares at \$54.50@54; and of Common, 200 shares at \$11@10.50. Rappahannock has had a moderate business at well-maintained prices, the sales amounting to 10,000 shares at 28@31c. Silver Cliff has been fairly active, with growing strength, the sales aggregating 13,650 shares at \$4.50@5. South Hite has been quiet and weak, with sales of 3620 shares at \$2@1.65. Sutro Tunnel, with a moderate business, has been weak, the sales aggregating 14,900 shares at \$2.50@1.75.

The dealings in the fancies have been as follows: American Flag, 3600 shares at 40c@43c; Buckeye, 35800 shares at 39c@33c; Dahlenega, 3800 shares at 12c@10c; Granville, 23100 shares at 14c@16c; Lucerne, 1700 shares at 31c@33c; Lucerne, 3000 shares at 14c@15c.

Goodshaw has been one of the most active stocks during the past week. Concerning the recent strike in this mine, various rumors have been published. The Standard of the 8th inst. says that it was made on the 600 level east of the shaft, though a good ledge is also reported in the west. No. 1 east was struck on the 600 level, 75 feet east of the shaft, and is about six feet in width, standing nearly vertical. This portion of the mine is said to look very favorable in all parts, and it is asserted that the strike will place this mine in the first rank of the Bodie mines. The ore, it is said, resembles that which was struck in the Bodie last spring. This mine joins Mono, and is on the line of the Standard and Bodie.

In the dealings at the American Mining Stock Exchange, the Comstocks figure largely. Outside of these, Barbee & Walker, Silver Nugget, and Durango have been the leading features. The dealings at this exchange are, however, without much spirit. This board began business at a time when but little could be expected, but we think that by adopting a legitimate course, there is a very encouraging future before it. The dealings for the past week have been as follows:

STOCKS AMERICAN MINING STOCK EXCHANGE.

Stocks.	Open- ing.	High- est.	Low- est.	Final.	Sales- shares.
Amie.....	1.05	1.14	1.00	1.20	5,500
Auburn & Rock Creek.....	1.00	1.15	1.00	1.05	4,400
Rattle Creek.....	5.00	5.37 1/2	5.00	5.25	13,100
Barbee & Walker.....	5.00	5.50	5.00	5.12 1/2	21,600
Best & Belcher.....	8.00	8.25	8.00	8.25	1,630
Bodie.....	7.50	7.75	7.50	7.50	1,306
Boston.....	1.25	1.25	1.05	1.20	800
Bulwer.....	5.00	5.00	.....	5.00	400
California.....	2.10	2.25	2.00	2.10	3,100
Con. Pacific.....	2.50	2.50	.....	2.50	200
Con. Virginia.....	3.15	3.30	3.15	3.30	1,325
Climax.....	2.45	2.60	2.45	2.50	2,500
Columbia.....	5.25	5.25	.....	5.25	200
Cosette.....	.....	.....	.....	.....	.....
Crowell.....	.15	.20	.15	.15	1,000
Chrysolite.....	18.00	19.87 1/2	17.75	19.75	2,375
Durango.....	.50	.60	.50	.55	21,500
Glynn Dale.....	.75	.75	.55	.65	4,100
Hukill.....	1.90	2.00	1.80	1.90	11,800
Iron-Silver.....	.....	.....	.....	.....	.....
Leadville.....	.....	.....	.....	.....	.....
Little Chief.....	10.12 1/2	11.00	9.75	11.00	2,550
Mexican.....	8.25	8.67 1/2	8.25	8.37 1/2	1,860
Mayflower.....	1.25	1.35	1.25	1.30	300
Opnic.....	7.75	7.75	7.00	7.75	1,123
Silver Nugget.....	1.90	2.25	1.25	1.90	36,570
Standby.....	4.00	4.00	.....	4.00	1,050
Standard.....	27.00	26.25	27.00	27.75	150
Sutro Tunnel.....	2.30	2.25	2.00	1.90	2,920
South Bulwer.....	1.30	1.30	.....	1.30	100
Sierra Nevada.....	14.12 1/2	14.12 1/2	12.75	12.75	1,465
Tombstone.....	5.00	5.00	.....	5.00	530
Vandewater.....	1.50	1.55	1.35	1.15	3,400
Union Con.....	19.75	19.75	18.37 1/2	19.00	675
Total sales.....	.....	.....	.....	.....	149,528

OFFICIAL LETTERS.

By and By.—This company's property is located in the Oro Blanco District, Arizona. The first shipment of bullion was received on the 12th inst., and amounted to \$897.30. This company owns five properties, each 600 by 1500 feet, namely, the By-and-By, in Oro Blanco District; the Solid Silver, Elliott, Commonwealth, and Huachuca, in the Huachuca District; all in Pima County, Southeastern Arizona.

Barbee & Walker.—This mine, which was recently placed upon this market, is located in the Silver Reef District, Utah, and is now producing at the rate of about \$4000 per week. It is said that the mine has \$30,000 in the treasury, and that it will pay a dividend of \$10,000 this month, equal to \$10 per share, and that dividends will be paid hereafter regularly each month, keeping two months' dividends in the treasury against contingencies. At a recent meeting of the Board of Trustees, a resolution was adopted to the effect that there are no necessary or contemplated improvements on this mine to absorb its product; that the mine is free from debt; and, after payment of the first dividend, the company will carry over a surplus of \$18,000.

Big Pittsburg.—The developments are reported by the superintendent as very favorable, especially in the Pierson shaft, which is now down 110 feet. The company is troubled by the strikers.

Bodie Bluff.—The south drift is advanced at the rate of about ten feet per week in a formation somewhat harder than last reported, though the ledge still remained unchanged. The north drift was advancing rapidly in very favorable vein porphyry. The surface machinery was doing effective work.

Boulder Consolidated.—The superintendent, under date of the 31st ult., says: During the week we employed 86 miners, 10 car-men, 4 timber-men, and 2 black-smiths, at \$4 per day; 1 blacksmith helper, at 3.50 per day; 1 foreman, at \$6 per day; and 1 shift-boss, at \$5 per day. We extracted and shipped to the mill 422 tons of ore from the 200, 300, and 400-foot levels. The average pulp assay for the week is \$16.29; the amount of bullion received for the week, 720 ounces; and the amount shipped to the company \$5953.45. We have extended the south drift on Stonewall, 280-foot level, 12 feet; total length, 90 feet; the ledge is 2 1/2 feet wide and is looking well. The south drift on the Ralston has been run 14 feet; total length, 210 feet. The ledge is 3 feet wide, of milling ore. There is no change to note in the appearance of the stopes.

With reference to the recent meeting of the trustees of this company, the president states that for development work and for new machinery, the company proposed to mortgage the property for \$50,000 or \$75,000, and to issue bonds for that amount. Certain of the large stockholders object to the proposition, and say that it is simply an attempt on the part of the management (with which Mr. Lord says he has very little to do) to issue the bonds and then sell them at about 60 or 70, and give the "insiders" a chance to operate. The stockholders who are not inside are naturally anxious.

Bull-Domingo.—This mine is said to be constantly improving. Seventy men are employed.

Bosco.—A telegram from the superintendent says: Rome shaft No. 2 is in "Forrest porphyry," similar to that passed through in the Robert E. Lee, ore assaying 27 ounces. The Uncle Sam, adjoining the Bosco, is in a seam of black sulphurets carrying free gold.

A telegram from the general manager, dated Leadville, June 14th, says: The Bosco has not, and will not shut down. Our men will stand by the mine without regard to any miners' organization or strike.

Bassick.—This company is clearing out the several workings of the mine preparatory to taking out ore in paying quantity. New concentration works are being erected, which will obviate the necessity of carrying the ore to others for treatment.

Calaveras.—The superintendent telegraphs, under date of the 16th inst., as under: Have to day, through Bank of California, sent you telegraphic transfer \$13,393.37, results of clean-up. Although the company has been at work some four or five months, it has not washed more than sixty or seventy thousand cubic feet of top gravel, and as yet hardly touched the rich blue gravel. It has now opened a face on the spur about forty feet deep, and when it has advanced seventy-five feet farther, it will strike eighteen feet of blue gravel, that has shown by prospect \$6 per cubic yard. Of course this is not given as an

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 (June 12, June 14, June 15, June 16, June 17, June 18), SALES.

Non-Dividend 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 (June 12, June 14, June 15, June 16, June 17, June 18), SALES.

g. Gold. s. Silver. L. Lead. C. Copper. * Non-Assessable. † Assessment paid. ‡ Ex dividend. Total shares sold during the week, 315,450.

average, but at a modest estimate this blue gravel will run over \$1 the cubic yard. The top gravel runs from 13 to 15 cents per cubic yard. For the claim it is now working it has 160 acres, that should yield at present rate from seven to ten millions. The company owns the most valuable water-rights in that section of the country, and is now arranging to carry water by pipe to the Sand Hill, another rich gravel-bed that it owns, in that immediate vicinity.

Chrysolite.—Recent telegrams state that the strike is over. Mr. Keyes, under date of the 15th inst., says that the committee of the strikers has decided to accept the company's proposition, and that work was fully resumed. On that day, 117 tons of ore were shipped to the smelters. The ore statement of this company for the week ending the 8th inst. is appended:

	Tons.
Ore delivered and not paid for, as per last week's statement.....	1,463
Ore delivered this week.....	429
Total ore delivered.....	429
Ore paid for this week.....	1,059
Total ore paid for this month.....	1,059
Balance delivered, but not paid for.....	833
Cash received this week from sale of ore.....	\$66,607
Average per ton, about.....	\$62.50

Carbonate Hill.—A recent letter from the superintendent says that the May shaft is down 301 feet, in contact matter, and the cutting of the ore-body is daily expected. Some good mineral has been encountered in sinking. Work at the Breece mine is suspended on account of the strike.

Dunderberg.—During the week ending June 5th, good progress was made in the different workings. The winze below the A level had been advanced on the lode, and was carrying a 10-inch pay-streak. The winze sinking from the third level was on a fine body of ore from 1 to 2 feet wide, which was to be immediately stoped out, and driving on the fourth level was to be resumed. The third level was advanced with all possible speed, and was opening up good stoping-ground. The capacity of the new jigs is about 30 tons per day of twenty-four hours, from 5 to 10 tons of crude mineral being concentrated to a ton of dressed ore.

De Smet.—A recent letter states that the company is mining from the upper levels entirely, and not, as formerly, from the lower ones. Seventy-five men are employed, and there is a large body of ore in sight. It requires about twice as many men to keep the mill running when the ore is taken from the lower levels exclusively. The value per ton of ore since the company began milling operations in April, 1879, has averaged about \$10 per ton; the total expenses of mining and milling have been about \$3 per day, and the net value of the ore in sight is stated at over \$5,500,000. The equipment includes an eighty-stamp mill, which has thus far crushed an average of two tons per day to the stamp, equal to nearly 5000 tons per month. On the 1st of last January, it is stated that the company had a cash balance in its treasury of \$138,000, after paying for its equipment, etc.

Denver City.—During the week ending the 7th inst., the work of enlarging the discovery-shaft made excellent progress. The shaft is being enlarged from 3x6 to 5x10, and, when completed, will be one of the best in the district. The shaft is now down on the iron stratum, and it is thought that the pay-streak will be cut within a few days. On the Shamus O'Brien, the main shaft is down 127 feet. Work has been temporarily suspended here, owing to the unreasonable figures demanded by the contractors on account of the present strike. The Wright shaft is down 185 feet.

Emerson.—A telegram from the superintendent, dated June 15th, stated that rich developments are making. On May 31st, the winze from the north drift on the 150-foot level in the South Noonday was down 101 feet in solid ore the entire width of the winze. The north drift on the 150-foot level was in 112 feet, with a 6-foot facing of good pay-ore on the foot-wall. Every thing in and around the mine was in good working order.

Freeland.—A recent letter from the superintendent says that the mine opens better as we extend our levels into the mountain; it never looked better than it does now. We are having the most continuous and longest ore-bodies I have ever seen, and I am confident when we sink we shall open up much larger and more extensive ore-bodies than we have yet found. We have 230 feet to go to our boundary-line in the Minnie level and 840 feet in the Freeland level. Face of Min-

nie and Freeland levels in good ore, and Platt branch in good ore.

Green Mountain.—The superintendent telegraphs from Greenville, Cal., under date of June 13th, as follows: Struck pay fourth level; same quality and character as lowest level; unquestionably same pay-chute. Mine looking splendid throughout. Mills running. Ditch all right. Boarding-house completed. New mill progressing rapidly. It is thought that this assures the company of 420 feet backs of ore between the two levels, and from No. 4 level to surface 300 feet more.

The contract to complete a 60-stamp mill at this mine has just been let. The castings are to be furnished by July 15th, and will cost \$22,500.

Great Eastern.—A telegram from this mine states that the Flora Belle tunnel is now in 170 feet, carrying a solid ore-facing which assays between \$8 and \$9 per ton. The tunnel has about 80 feet yet to advance before reaching a point under the shaft-workings. The shaft is being rapidly sunk, and will connect with the tunnel about July 1st, when extensive stoping will be in order.

Horn-Silver.—It is stated that the long-looked-for construction-train has at length arrived at this mine. The railroad was to have been completed to the mine by January 1st last. The steam hoisting-machinery for the mine is now nearly completed. Heretofore, hoisting has been done by means of a wooden whim, and with such rude appliances the shaft has been sunk to a depth of 360 feet. At this depth the vein is 70 feet wide. Five levels have been run at intervals of 60 feet. The new hoisting-machinery will serve for the shaft and levels to a depth of 1000 feet. The company has over \$600,000 in base bullion and in ore ready for smelting. The new refinery of the company at Chicago is now completed and at work refining the base bullion. This refinery has a capacity for the entire output of the mine. The company now has three stacks for smelting at the mine, and will erect three more at once, at a cost of about \$35,000, which will enable them to smelt all the ore raised from the mine, if necessary.

Little Chief.—Operations have been very much retarded, owing to the strike. The manager of this mine, under date of the 16th inst., says:

"District still under martial law. Strike certainly defeated, and strikers now considering the advisability of disbanding. Mines generally resuming work. We all feel greatly relieved."

The ore statement for the two weeks ending June 8th is as follows: Ore delivered to smelters, 1283 tons; ore paid for by smelter, 1697 tons (partly previous deliveries); delivered, but not paid for, 655 tons; ore paid for this month, 764 tons; amount received for June shipments, \$25,477.65.

A telegram dated Leadville, June 17th, says:

"Shipments last two days four hundred and thirty-seven (437) tons. Mine looks finely. Strikers have surrendered unconditionally."

Lucerne.—A recent letter from this mine says that the new shaft being sunk on the vein, at that time down to a depth of thirty-five feet, the quartz then mentioned as forming the main crevice-matter is gradually being superseded by live rock containing considerable mineral, and that the shaft is being sunk night and day, the indications for a body of pay being more favorable than at any time heretofore.

Mayflower.—The new machinery of this mine is now in full operation, and the daily capacity of the mine increased to thirty tons. The ore taken from the different shafts and levels is averaging about \$68 per ton, and the cost of mining and smelting is \$30 per ton. At several points in the Berry shaft the ore runs \$150 per ton. The Brighton tunnel is to be advanced 1500 feet as soon as the existence of good ore ahead on the tunnel-line is proved by the diamond drill. A cross-cut is soon to be begun from the Berry shaft, which will intersect the discovery-shaft on the Lafayette, at a depth of 600 feet. It will obviate the necessity of hoisting-works for the Lafayette, as the ore can be hoisted much more economically through the Berry shaft of the Mayflower. Ore has lately been discovered on the Lafayette that runs very high. Work on the Newark is at present confined to surface developments principally.

Olsen.—A recent letter from the superintendent says that a body of rich ore has been struck in the north shaft, which will add greatly to the value of the property. Further developments are daily looked for.

Felican & Dives.—This company has nearly completed its preliminary development-work. Stoping will begin about July 1st, when about 200 men will be employed. The different workings of the mine have been completely retimbered. It is expected that the daily output will be over 100 tons as soon as the work of stoping is fully under headway. The ore will be run out through the 2½ tunnel, and thus save the expense of hoisting by the main shaft, which is now down 465 feet.

Resumption.—The Ni Wot mine, owned by this company, is now producing bullion. This company owns one of the handsomest mills in Colorado running 50 stamps, and has also its own smelters on the property.

Red Elephant.—A telegram dated the 12th inst. says: Have shipped 5 tons of milling-ore running 60 ounces per ton. Shipments small on account of disabled pump. Putting in new one. Commenced concentrating at Stevens's Mill, Saturday.

Robinson Consolidated.—The general manager writes, under date of the 8th inst., as follows:

"Lower-level tunnel continued 22 feet. Total length, 288 feet. No. 2 north cross-cut 7 feet. Total length, 71 feet. Average number of men employed daily, 50. We are grading for new ore-wasters at tunnel mouth and cording up the fallen timber upon our locations, to use for fire-wood. The pump gains a little upon the water since running No. 3 south to the surface, and thus shortening the pump-line. A more powerful pump has been ordered. The Summit Smelting Works are rapidly pushing the construction of the reduction-works. There are no changes to note in tunnel or mine."

South Hite.—The superintendent of this mine, writing under date Hite's Cove, Cal., June 6th, says:

"Vein on 500-foot level is now a little mixed and broken, but still carrying plenty of good ore, with a regular and well-defined wall and a regular dip. I am now driving the drift in the gouge along the wall, and taking down only part of the vein, as this enables me to make better headway, occasionally drilling into the vein and blasting it down to show its strength and character. I shall soon cross-cut the vein, and hope to find it twenty feet wide. Several large streams of water are now coming out of the vein with such force as to create a sound like an engine blowing off steam, which is a favorable indication for an immense ore-body at this point. The next thirty days or six weeks will determine the extent and value of this strike."

Spring Valley.—The superintendent, writing from this mine under date of June 1st, says: The mine is looking finely, and gives every promise of profitable development. After finishing necessary work at Saw-Mill Ravine, we shall begin cleaning up the gold a four different points. Our new derrick works splendidly, and is developing a fine body of gold-bearing bottom ground. In the upper flat, a little bed-rock appeared to-day, and a few pieces of coarse gold, weighing from one to three dollars, were picked up. The month of June will be devoted to washing the stripped gold-bearing gravel, and I am confident of a very satisfactory result.

Many of the stockholders of this company are anxious for an immediate clearing. Superintendent Waldeyer, in answer to a letter of inquiry from the president of the company, said, in a telegram dated the 15th inst., "Interruption of work by stopping to clean up before July 1st will cause great loss of time and money. Mine looks better than for five years past. Can make a splendid clearing July 1st if permitted to work without interruption till then."

Silver Nugget.—A recent letter from this mine states that the work of sinking the main shaft is making rapid progress. It is now down 120 feet. The superintendent reports, under date of May 30th, that the vein is developing splendidly. The new hoisting-works are promised at the mine in a few days. It is stated that the Lola is opening up fully as well as the Nugget end of the claim.

Telegraph Consolidated.—The superintendent of this mine writes, under date of May 30th, as follows:

"The work of development is being diligently prosecuted. Further bodies of rich chloride ore have been uncovered in the new shaft, parcels of which assay very high. Native silver and horn-silver are also found on the property. The formation of the country-rock is similar to that of the Silver King mine, the ledge being a mixture of shale, baryta, quartzite, etc."

DIVIDENDS.

The Father de Smet Gold Mining Company, of the Black Hills, has declared its seventh regular dividend of 30 cents per share, payable on the 24th inst.

The Homestake Mining Company has declared its regular monthly dividend of 30 cents per share, payable on the 25th inst.

The annual meeting of the La Plata Mining and Smelting Company was held yesterday at the offices, No. 58 Broadway. The Board of Trustees declared the usual dividend of 7½ per cent, payable on the 1st of July, and the stockholders, by a vote of 164,525,

elected the following gentlemen to serve as trustees for the ensuing year: N. Witherall, Theodore Bedell, C. B. Rustin, Harry Allen, Vanderbilt Allen, George A. Thorne, and M. E. Smith.

The Eureka Consolidated has declared a dividend of 50 cents per share, making the total paid to date \$4,155,000.

The trustees of the Green Mountain Company have declared the twelfth monthly dividend of 5 cents per share, payable June 25th to stockholders of record June 18th.

The Barbee & Walker Silver Mining Company, of Silver Reef, Utah, has declared a dividend of 1 per cent of the capital stock, amounting to \$10,000, or 10 cents per share, payable on the 25th instant. After payment of this dividend, there will be left in the treasury a surplus of \$18,000. In the announcement of their first dividend, the company has made a new departure in giving information to stockholders of the condition of its treasury.

The Little Chief Mining Company has declared a dividend (No. 5) of one per cent, equal to 50c. per share, and aggregating \$100,000, payable on the 23d inst.

The Bulletin says that during the month of May, twelve mining dividends were disbursed in San Francisco, eight in New York, one in Boston, and one in London. The amounts are as follows:

San Francisco	\$333,000
New York	368,375
Boston	800,000
London	101,280
Total	\$1,602,655

A portion of the twelve dividends credited to San Francisco was paid to New York and other Eastern shareholders. The Deadwood, Excelsior, Father de Smet, Homestake, Ontario, and Standard have many stockholders at the East.

Consolidated Virginia and California have passed their dividends for June, although it is asserted that both of these companies have ample funds in their treasuries to pay their stockholders at least 50c. per share.

The following is going the rounds of the press: There's a row in the Silver King (Arizona) management. The secretary, W. H. Booth, sues in San Francisco to recover \$75,000 for nine dividends of fifty cents each on 20,000 shares. He says that only \$15,000 have been paid. Mr. Booth says the directors declared these dividends, and he ought to know. If they were ordered, the fact has not been known at this end of the line.

The Barclay Coal Co., of Philadelphia, has declared a dividend of two per cent, payable June 16th.

The Napa Consolidated Quicksilver Mine has paid ten dividends since August, 1878, aggregating \$100,000.

REVIEW OF THE SAN FRANCISCO MARKET.

There is no change in the Comstock, and the anticipated "boom" seems as far away as ever. It appears to us that, taking the course of our markets here as a guide, and studying the disposition of the average Eastern investor in mining stocks, the support and patronage which were undoubtedly counted upon by the Comstock manipulators will fall far short of their original anticipations. The fact of the matter is, the Eastern mining speculator is no exception to the average "Frisco operator," but when you confront him with the magnificent output of our Eastern mines, and the splendid returns they are making to their stockholders in the shape of dividends, and place by their side the grim ogre, "Assessment," of which no one can say where it will end—at least the innocent stockholder—no wonder the list is depressed.

The assessments to become delinquent this month amount to \$1,079,600, against \$850,300 for the corresponding month of last year. The aggregate for the first six months of this year is \$6,997,500; last year, it was \$7,522,300; and in 1878, \$6,993,300.

The New York Evening Post says: "It is reported that an attempt is being made to dispose of the well-known North Bloomfield Gravel Mines, of California, to eastern speculators. These mines are located in Nevada County, and are among the most extensive in the State, both as regards territory and appliances for working the gravel. They have also produced large amounts of gold, but the profits, when there were any, were small; and this is probably the secret of the willingness of Californians to allow the property to fall into other hands."

"The legal investigations being made regarding the past management of the bonanza mines (Consolidated Virginia and California) indicate that Flood and his party were the owners of but a comparatively small portion of the stock; that the actual owners of a majority in both mines were Eastern people, who had purchased at high prices for investment; that large dividends were paid in order to

SAN FRANCISCO MINING STOCK QUOTATIONS.
Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS.						Open- ing June 18.
	June 11.	June 12.	June 14.	June 15.	June 16.	June 17.	
Alpha	6	6	5 7/8	5 7/8	5 7/8	6	6
Alta	2	2 1/4	2 1/4	2	2	2 1/4	2 1/4
Argenta	12-32	1/4	1/4	1/4	1/4	1/4	1/4
Bechtel	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Belcher	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Belle Isle	7-16	7-16	13-32	2 3/4	2 3/4	2 3/4	2 3/4
Belvidere	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4
Best & Bel.	13-16	13-16	20-32	7 1/2	7 1/2	7 1/2	7 1/2
Blackhawk	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
Bodie	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Boston Con.	2 1/4	2 1/4	2 1/4	2	2 1/4	2 1/4	2 1/4
Bullion	5	5	5	4 7/8	4 7/8	4 7/8	4 7/8
Bulwer	19-32	21-32	21-32	19-32	21-32	19-32	19-32
Caledonia	2	2	2	2	2 1/4	2 1/4	2 1/4
California	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Cal. B. H.	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
Chollar	13-32	13-32	11-32	11-32	11-32	5-16	5-16
Con. Imp.	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Con. Pacific	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
Con. Va.	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Crown P'nt	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Dudley	13-16	13-16	19-32	2	2	21-32	2
Eureka Con.	18 1/4	19 1/4	19	19 1/4	19 1/4	19 1/4	19 1/4
Exchequer	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Goodshaw	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
Gould & Cur	1	1	1	1	1	1	1
Grand Prize	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
Hale & Nor.	7-16	7-16	13-32	13-32	13-32	13-32	13-32
Hillside	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Indep'd'nce	7-16	1/2	1/2	7-16	13-32	5-16	5-16
Jackson	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Julia Con.	7-16	1/2	1/2	7-16	13-32	5-16	5-16
Justice	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Kentuck	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Lady Wash	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Leads	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Leopard	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Leviathan	11-32	3/4	11-16	11-16	11-16	3/4	3/4
Mammoth	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Manhattan	1	1	1	1	1	1	1
May Belle	11-32	13-32	7-16	1/2	5-16	1/2	1/2
Mar. White	11-32	13-32	7-16	13-32	11-32	13-32	13-32
McClinton	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2
Mexican	7 3/4	7 3/4	6	6	5 3/4	5 3/4	5 3/4
Mono	12	12	12	11 1/2	11 1/2	11 1/2	11 1/2
Navajo	3-16	3-16	3-16	3-16	3-16	3-16	3-16
North Belle	12	12	12	11 1/2	11 1/2	11 1/2	11 1/2
N. Bonanza	3-16	3-16	3-16	3-16	3-16	3-16	3-16
N. Standard	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Nooday	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Ophir	7 3/4	7 3/4	7 3/4	6 3/4	7 3/4	7 3/4	7 3/4
Orig. K'ys'e	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Overman	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Potosi	3-16	3-16	3-16	3-16	3-16	3-16	3-16
Ray & Ely	19-32	19-32	19-32	19-32	19-32	19-32	19-32
R. de Monte	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Savage	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
Scorpion	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Seg. Belcher	14 1/2	13 3/4	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2
Sierra Nev.	19-32	9-16	1/2	1/2	9-16	17-32	17-32
Silver Hill	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Silver King	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
So. Bulwer	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Summit	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Syndicate	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Tioga	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Tip Top	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
Trojan	19 1/4	19 1/4	19 1/4	19 1/4	19 1/4	19 1/4	19 1/4
Tuscarora	19 1/4	19 1/4	19 1/4	19 1/4	19 1/4	19 1/4	19 1/4
Union C'n.	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
Utah	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4
Wales	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4
Yel. Jacket	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4

work off the stock; and that Flood & Co. managed to keep control by obtaining proxies before elections, and thus secure the profits on milling-ores, handling the funds and bullion and furnishing supplies."

Belcher has been quite steady during the week, at the low prices attained. It is stated that work has been resumed both north and south of the 3000 level, but that it is seriously interrupted by the great heat and the heavy flow of hot water.

Bullion closed yesterday at \$2 1/2. The trustees of this company are very bold with their assessments, the last one being levied two weeks subsequent to the payment of the one previously levied, both for \$1 per share, or aggregating \$100,000 each. This company has never returned its stockholders a dollar in the shape of dividends, and has levied nearly \$3,500,000 in assessments. The mine is selling to-day in the open market for about a quarter of a million dollars; in other words, the assessments levied upon its stockholders would cover its present market value fourteen times.

The California and Consolidated Virginia companies are extracting the usual amount of ore, and making favorable shipments, yet the stockholders of neither of these companies received a dollar. It is stated that the ore from the old bonanza workings of the Cons. Virginia yield \$35 per ton, two thirds of which is gold. The total product for the month of May of this company was over \$205,000, and it is said that these companies have, in the Bank of Nevada, a surplus of from six to eight hundred thousand dollars. Consolidated Virginia opened to-day at 3 1/4, and California at 2 1/4.

Eureka Consolidated shows an improvement, closing yesterday at \$19 1/2. The new shaft is down over 100 feet and is being sunk at the rate of 5 feet per day.

Three eight-hour shifts of picked men have been put on this work, with orders for sinking with all possible speed. There is no change to observe in the condition of this mine, sufficient ore being extracted to run the two furnaces.

"The Lady Bryan mine has been sold by the Sheriff of Storey County, Nev., for \$15,000, and the deed has been recorded. This mine contained 6000 feet, which is about ten times the extent of ground belonging to the California mine. The Lady Bryan is one of the most noted of the outside Comstock mines, and in seasons of speculation its value has been run up into the millions. It is now quite as valuable, intrinsically, as then, as large sums have been expended in the erection of buildings and machinery and in underground development; but, as its location is in the porphyry east of the Consolidated Virginia, California, Sierra Nevada, and Ophir mines, it is not likely that any great body of ore will ever be found there."

A small body of ore, which averages about \$30 per ton, has been struck on the 2100 level of the Hale & Norcross Mine. This stock shows an improvement in the recent transactions.

Raymond & Ely has nearly gone out of sight, but we have a quotation of yesterday equal to about 16c. per share. The works of this company were closed on the 15th inst., and it is stated that all of the available ore has been extracted, and as the share-holders refuse to continue paying assessments, it is thought best to abandon the mine and close the same. This company has paid to its stockholders over \$3,000,000 in dividends, the last one of \$3 per share being paid in September, 1873; since that time, the company has been levying assessments with the result noted.

Northern Belle closed yesterday at \$11 1/4 per share. This company is shipping an average of 80 tons per day to its mills at Belleville. In the mine there are 155 men steadily employed. It is stated that the 600 level below the adit is looking very well. The May output of this mine aggregated nearly \$110,000.

Ophir has been quite steady during the week, and opens to-day at \$8 1/2. It is stated that there is an improvement on the 2500 level of this mine, and it is also said that the management proposes to levy an assessment, and run the mine four months from the proceeds of the same—a feat which our Pacific coast contemporaries announce as dubious.

The Savage Mining Company is extracting ore from the old levels, which is said to average \$35 per ton. This ore comes from the old Potosi tunnel, and is sent to the mills down the cañon for reduction. This stock, however, shows but little improvement.

Tip Top has shown but one quotation during the week, that of \$6 1/2 per share.

"In answer to an inquiry about the Tip Top Silver Mining Company, Arizona, in view of another reported assessment, it is stated that the mine is now opened in the fourth and fifth levels, from which there can now be stoped ore enough to pay dividends of 25 cents per share for two years. When the last assessment of 50 cents per share was levied, there was on the dumps ready to be milled (and the mill ready to do its work) a net value of \$100,000. Under all the circumstances, another assessment at this time has, to say the least, a very unpleasant appearance, particularly to the stockholders who are not on the inside. Still it is probably to their interest not to become frightened, considering the peculiar circumstances."

The sworn reports now required of all mining incorporations in California are full of interest. We give the following facts as far as received, showing the

Mines with Cash on hand June 1st, 1880:

California	\$43,340	Double Standard	\$5,397
Con. Virginia	268,000	Defiance	351
Utah	6,786	Bechtel	6,177
Union Con.	61,447	Summit	415
Gould & Curry	14,916	Standard Con.	150,287
Exchequer	24,658	Bulwer Con.	11,824
Occidental	13,245	Tioga Con.	7,391
Trojan	7,391	Flowery	2,252
Alta	34,614	North Bonanza	17,992
Benton Con.	23,077	Belcher	6,810
Northern Belle	99,131	Crown Point	46
Equator	5,116	Chollar	5,418
Eureka Con.	40,982	Potosi	14,418
Champion	11,758	Challenge	6,322
New York	1,117	Bullion	19,191
Bodie Con.	18,753	Julia Con.	14,024
Mono	20,170	Silver Hill	27,307
McClinton	3,848		

Mines in Debt, June 1st, 1880:

Sierra Nevada	\$56,559	Lady Washington	\$6,084
Best & Belcher	18,292	Ophir	30,761
Alpha	21,658	Mexican	47,962
Hale & Norcross	4,557	Justice	23,379
Metallic	4,388	Con. Imperial	28,256
Booker Consolidated	2,557		

A general press dispatch says: The earnings of the Sutro Tunnel from the Comstock mines for the month of May were \$53,290. The progress for the month of May in the north lateral was 321 feet, and in the south lateral 315 feet.

PHILADELPHIA MINING STOCKS.

The subjoined table shows the opening, highest, lowest, and final sales of all the mining stocks dealt in at the

Philadelphia Stock Exchange, and at the Philadelphia Mining Exchange, for the week ending the 17th inst.:

Table with columns: Stocks, Opening, Highest, Lowest, Final, Sales Shares. Lists various stocks like Argenta, Buena, Buckeye, etc.

Total sales..... 52,325

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 17th inst., are given in the following tables.

Table with columns: Stocks, Par Value, High'st, Lowest, Closing, Sales Shares. Lists stocks like St. L., I.M. & S.R. Co., Cambria Iron Co., etc.

Table with columns: Bonds, Princ'l, When Due, Int. est, When Due, High'st, Lowest, Amount. Lists various bonds like D., L. & W., 7s, conv, 1907 M. & S., etc.

Coal Stocks.

NEW YORK, Friday Evening, June 18.

These stocks have exhibited considerable strength during the week, though toward the close a dullness has characterized the dealings; quotations have remained quite steady, notwithstanding the many stories set in circulation calculated to demoralize prices.

At the annual meeting of the Pennsylvania Coal Co., held yesterday, the old Board of Directors was re-elected, excepting Walter Ferguson, who has changed his residence, and will be unable to attend

COAL STOCKS.

Large table with columns: NAME OF COMPANY, Capital Stock, Shares, Par Val, Last Dividend, Rate per Ann, Quotations of New York stocks, June 12-18, SALES. Lists Am. Coal Co., Buck Mt. Coal, etc.

* Of the sales of this stock, 40,228 shares were sold at the Philadelphia Stock Exchange, and 17,250 at the New York Stock Exchange.

BOSTON MINING STOCKS.

Table with columns: NAME OF COMPANY, Shares, Par, June 11, June 12, June 14, June 15, June 16, June 17, SALES. Lists Allouez, Atlantic, Atlas, Aztec, Brunswick, etc.

the meetings of the Board. He has been succeeded by A. S. Hurlbutt.

New Jersey Central has been the most active stock on the list; with dealings aggregating 165,637 shares, the prices have ranged between \$62 1/2 and \$59.

The sales of Delaware & Hudson stock have amounted to but 10,380 shares at \$68 1/2 @ \$71 1/2 @ \$70. The transactions in Delaware, Lackawanna & Western have amounted to 151,320, at prices fluctuating between \$74 and \$77, and closing at \$76.

It is officially announced that at the next dividend period of the Stormont Mining Company, an increased dividend will be declared and regularly maintained thereafter. This company is now producing at the rate of about \$60,000 per month, and the developments of the recent strike are said to be of the most encouraging nature.

Copper and Silver Stocks.

Reported by C. H. Smith, Commission Stock Broker, No. 15 Congress street, Room 3.

The market for copper stocks the past week has continued to rule extremely dull, with, except in one or two instances, very little variation in prices. There is, however, a good tone to the market and a disposition to buy stocks for a rise in the near future.

lb. would give greater activity to the market and induce a good buying demand for stocks. To day being a holiday, there was no session of the board, and our report is made up to the close of business on the 16th inst.

Calumet & Hecla advanced from \$22 1/2 @ \$22 1/2, and is in good demand at \$24 bid. The yield of this mine for the month of May amounted to 1653 tons, 1550 lbs.

Copper Falls declined on the 12th to \$9 1/2, at which 100 shares were sold, but advanced on the 15th to \$11 1/4, and it closes at \$11 bid, and no stock offered. It is reported that a "rich strike" of something besides copper has been made in the mine, which is the cause of the advance.

Franklin has been quite steady at \$12 1/4 @ \$12, with nearly all the sales at the latter figure, which is the bidding price at the close.

Quincy has been very strong, on reports that it is in contemplation to pay a semi-annual dividend in August, and advanced to \$26 1/2.

Pewabic sold at \$15 1/4, which was bid, and no stock offering under \$16. The openings in the new mine are satisfactory, and a steady improvement is looked for in the future.

Atlantic is in better demand at \$16 @ \$16 1/4. Allouez firmer, with an increased demand. Sales early in the week at \$2 1/4, closing at \$2 1/2.

Huron steady at \$3 3/4. Ridge strong at \$4 1/2 @ \$4 1/2, with but little stock in the market at these prices.

National quiet, with sales of 20 shares only at \$2: \$1 1/2 is bid, \$2 asked, for 100-share lots. The delinquent stock is advertised for sale July 3d, after which we look for a much higher price, as it is selling too low.

Star sold at \$1 1/4. Nothing doing in the remainder of the list of low-priced coppers.

Brunswick Antimony very quiet at \$20. SILVER STOCKS. The feature of the market in this class of stocks is the advance in Harshaw from \$22 to \$26, with a subsequent de-

cline to \$24 1/4, closing firm at \$25 bid. About 1500 shares changed hands.
 Catalpa declined from \$1 1/2 to \$1 1/4 on large sales, closing \$1 1/2 @ \$1 1/4.
 Sullivan sold at \$8, which was also bid.
 South Hite sold at \$1.75 @ \$1.80.
 Duncan silver declined to \$1 1/4 on the announcement of an assessment of 50 cents per share.
 Silver Islet small sales at \$13 1/4 @ \$14.

Gas Stocks.

NEW YORK, Friday Evening, June 18.

Gas stocks are, as a rule, very strong, and, with few offers, the tendency of the market is upward. The New York has declared a dividend of 4 per cent; the Metropolitan, one of 5 per cent; the Brooklyn, one of 5 per cent; and the Municipal, one of 5 per cent.

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

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS.			QUOTATIONS.	
			Rate per ann.	Am. of last.	Date of last.	Bid.	As'd.
Mutual, N. Y.	5,000,000	\$100	6	1 1/2	July, '79	75	80
" Bonds...	300,000	1,000	6	3 1/2	Feb., '80	100	104
N. York	4,000,000	100	8	4	June, '80	101	103
Metrop.	2,500,000	100	10	5	June, '80	136	141
" Certfs...	1,000,000	100	7	3 1/2	June, '80	100	103
Harlem	1,850,000	50	6	3	Feb., '78	67	72
Manhat.	4,000,000	50	8	4	June, '80	187 1/2	192 1/2
Brooklyn, Bkln.	2,000,000	50	15	5	May, '80	121	125 1/2
Nassau	1,000,000	25	2	2 1/2	Jan., '80	55	60
" Certfs...	700,000	1,000	7	3 1/2	Nov., '79	85	100
People's	1,000,000	10	4	3 1/2	Jan., '76	29	45
" Certfs...	250,000	1,000	7	3 1/2	Jan., '80	75	85
" Bonds...	375,000	100	7	3 1/2	Nov., '79	97	100
Metrop.	1,000,000	100	5	2 1/2	Jan., '80	65	75
" Bonds*	1,000,000	50	8	1 1/2	Feb., '80	70	75
Citizens'	1,300,000	100	6	3	Feb., '80	67	70
" Bonds...	315,000	1,000	7	3 1/2	Oct., '79	100	115
J. C. N. J.	750,000	20	10	7 1/2	Jan., '80	150	160
Municipal, N. Y.	2,000,000	100	12	5	July, '80	155	160
" Bonds...	750,000	100	7	3 1/2	Nov., '79	105	110
Fult'n Municipal	1,500,000	100	.....	.....	.....	80	90

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

THE BULLION MARKET.

NEW YORK, Friday Evening, June 18.

The silver market is firmer abroad, in consequence of higher exchange with the East Indies, and prices are better here; but as sterling exchange will probably decline here very shortly, the effect of this on the price of silver must not be overlooked in forming an opinion of the probable early future of the market. The decline in exchange the past week has counterbalanced the advance abroad.

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

DATE.	LONDON.		DATE.	N. Y.	
	Pence.	Cents.		Pence.	Cents.
June 12	52 1/2	115 1/2	June 16	52 1/2	115 1/2
June 14	52 1/2	115 1/2	June 17	52 1/2	115 1/2
June 15	52 1/2	115 1/2	June 18	*	115 1/2

* Market uncertain.

BULLION SHIPMENTS.

We give below a statement showing the latest published bullion shipments, in addition to those announced in our issue of June 12th:

May 28	Manhattan	Nev	\$11,035
" 29	Tombstone	Ariz	4,381
" 29	Contention	"	8,677
" 29	Eureka Consolidated	Nev	1,250
" 31	Eureka Consolidated	"	582
" 31	Star	Utah	1,811
" 31	Leeds	Utah	4,750
June 1	Eureka	Nev	1,587
" 2	Northern Belle	"	4,100
" 2	Hillside	Cal	3,500
" 2	Bodie	Cal	5,477
" 2	Ivanpah	"	2,175
" 2	Defiance, Inyo County	"	30,000
" 2	New Coso	"	15,000
" 2	Kingston	Colo	597
" 3	Northern Belle	Nev	7,700
" 3	Young America South	"	16,338
" 3	Christy	Utah	11,358
" 3	Paradise Valley	Nev	4,496
" 3	Pony	Mont	700
" 4	Centennial	"	1,901
" 4	Silver King, concentrations	Ariz	27,000 lbs.
" 4	Tombstone	"	\$20,000
" 4	Manhattan	Nev	27,610
" 4	Consolidated Virginia	"	80,000
" 4	Eureka, passing	"	1,800
" 5	Tombstone	Ariz	40,000
" 5	Northern Belle	Nev	9,668
" 5	Union Consolidated	"	31,967
" 5	Young America South	"	1,995
" 5	Boss	Colo	490
" 5	Newfoundland	"	341
" 5	Stormont	Utah	9,193
" 6	Eureka, passing	Nev	20,355
" 6	Forlorn	"	1,500
" 7	*Old Telegraph, 4 cars; Germania, 1 car; Stormont, 4 bars	Utah	16,650
" 7	*Ontario, 8 bars	"	5,085
" 7	Silver Cliff	Colo	3,298
" 8	*Germania, 1 car; Old Telegraph, 1 car	Utah	3,500
" 8	*Christy, 1 bar	"	1,659
" 8	*Barbee & Walker, 1 bar	"	1,880
" 8	*Mammoth, 4 bars	"	1,200
" 8	Eureka, passing	Nev	4,360
" 8	Richmond	"	20,631
" 8	Paradise Valley	"	2,762

" 8	Little Chief	Colo	25,000
" 9	*Brooks, 2 cars; Germania, 1 car	Utah	5,900
" 9	*Horn-Silver, 2 cars	"	5,500
" 9	*Ontario, 8 bars	"	9,795
" 9	Eurekad.	Nev	20,631
" 9	Eureka, passing	Mont	1,000
" 9	Dexter	Colo	5,000
" 9	Central City	Colo	16,500
" 10	Stormont	"	7,845
" 10	Centennial Mill	Mont	3,000
" 10	Eureka passing	Nev	537
" 10	Hannibal	"	1,800
" 10	Old Telegraph	Utah	2,800
" 10	Ontario, 4 bars	"	5,533
" 10	Barbee & Walker, 1 bar	"	1,829
" 11	*Ontario, 4 bars	"	4,433
" 11	*Ontario, 4 bars	"	5,300
" 11	St. Eastern	Dak	6,250
" 11	Stormont, 4 bars—Nevada 1 car	Colo	8,750
" 12	Silver Cliff	Colo	230 lbs.
" 14	" 241 lbs.	"	\$3,297
" 15	Little Chief	"	75,000
" 16	Stormont	Utah	7,400
" 16	Stormont	"	7,845
" 16	Horn Silver	"	14,912

*Received at Salt Lake City. †Shipped from Salt Lake City. ‡Received at New York City.

ARIZONA

By-and-By.—There were received at New York on the 12 inst., from the By-and-By Mine, 3 small silver bricks, valued at \$906.

Contention.—From March 8th last to May 31st, the Contention mill, Tombstone, Arizona, has shipped 127 bars of bullion from the mill, amounting to \$26,645. For the week ending June 5th, the shipments amounted to \$28,706.27.

Tombstone.—For the year ended June 1st, 1880, the Tombstone mine and mill produced \$619,125. The monthly product is now about \$85,000. For the week ending June 5th, the shipments amounted to \$17,302.59.

CALIFORNIA.

The Nevada, Cal., Transcript of the 8th, speaking of gravel mining and its present prosperity, says one claim in that county had cleared up \$50,000 within a week. The cost was but \$4000. Another claim near that city has taken out \$25,000 at a cost of \$7000.

A large amount of bullion was brought to Nevada City, June 8th, by the Sierra County stage from Forest City, Sierra City, and other camps.

The result of the first clean-up of the New York & Calaveras Company has been received at the New York office. The yield amounts to \$13,400, and is entirely from top gravel. About 65,000 cubic yards have been worked, averaging 20 cents per yard. The next clean-up, which is to be made in about sixty days, will be from bed-rock and blue gravel.

COLORADO.

Little Chief.—The Little Chief earned for May \$150,000. For the first days in June, in despite of the strike, it has paid its way and earned the dividend money—\$100,000. The mine is reported to have shipped six hundred and fifteen tons of ore for the week ending June 8th.

Chrysolite.—During the week ending June 7th, 430 tons of ore were shipped from the Chrysolite. During the same period, 1060 tons previous delivery were paid for by smelters. The amount of ore unpaid for at the date of report was 834 tons. The amount received from smelters was \$66,607.59. There were shipped Saturday last ninety-four tons.

The total value of the product of Leadville smelters for the week ending June 11th was \$303,025.

Central City.—From June 1st to June 12th, the First National Bank of Central City, Colo., shipped \$35,750 in gold bullion.

The Register-Call of June 9th says that Messrs. Hanington & McEllor shipped \$4500 in gold retorts to-day. The First National Bank shipped \$12,000 in gold to-day, including 210 ounces from Standley's California mine.

The Whitcomb Mill Company cleaned up 11 ounces and 6 pennyweights of gold from a mill-run on Alps ore.

The Pittsburg smelter, Summit County, has a contract for one thousand tons of the White-Quail ore. One thousand tons of minerals are now on the dump of the White Quail mine. It will run from thirty-five to forty-five ounces.

DAKOTA.

Caledonia, B. H.—The Black Hills Times of June 5th has the following: "A brick, valued at \$10,576.61, the result of thirteen days' run of the Caledonia, B. H., mine, is at the First National Bank of Deadwood."

Great Eastern.—The Great Eastern Gold Mining Company has received a gold brick weighing 300 ounces, value \$6000, the result of ten days' mill-run.

Father de Smet.—The Pioneer of the 5th says that the De Smet Company sent down its last clean-up—from a two weeks' run of its 80-stamp mill—yesterday. It was valued at about \$75,000, and with the express receipts of the day before from the Homestake mills, makes \$226,000 shipped from a small fraction of "the belt" in the past 48 hours.

Homestake.—The Pioneer of the 5th inst. says: "Each succeeding clean-up of the Homestake Company's mills shows a steady increase. Thursday, four immense bricks, aggregating 700 pounds, or \$151,000, were brought to town. They are the result of a two weeks' run of the Deadwood, Terra, the 80 and 120 stamp mills. The Highland was not run last month, hence is not represented in the bullion." The total product of the Homestake mine for May was \$118,085.44, of which \$68,907.05 represented the production for the latter half of the month. This is the largest yield in the history of the mine for any one month.

The Times, of the 6th, says that the Sunday mill of 20 stamps, weighing 600 pounds each, is completed and ready to start up as soon as the tramway is completed.

NEVADA.

Manhattan.—For the week ended June 4th, the Manhattan mill reduced 121 tons of ore of the assay value of \$27,610. Of this amount \$6124 were from custom ore; \$8043 from tribute ores; and \$13,442 from the Curtis shaft. During the month of May, the mill reduced 541 tons of the assay value of \$131,079. Of this amount, \$27,534 were from custom ores, \$12,673 from tribute ores, \$82,921 from the Curtis shaft, and \$7960 from the Frost shaft.

Richmond.—The Richmond silver mine, at Eureka, Nev., produced last year 34,371 tons of ore, and the company's furnaces smelted 43,312 tons, which yielded 31,015 ounces gold, 1,108,921 ounces silver, and 9436 tons lead, the net profit on which amounted to \$672,558.75, which is nearly 50 per cent on the capital stock of the company.

Consolidated Virginia.—The production of the Consolidated Virginia for May has been: Gold, \$127,310; silver,

\$78,468; total, \$205,778. The large percentage of gold is noteworthy. Recently the ore worked has assayed from \$40 to \$70 per ton, which is much above the average of several previous months.
Star.—The Star, Cherry Creek, White Pine County, Nev., produced \$26,400 in May.
Northern Belle.—The Northern Belle mine during May shipped \$109,450 in bullion.

UTAH.

Our regular correspondent, writing from Salt Lake, says: The bullion shipments for the week ending June 5th, inclusive, are as follows:

Ontario, 28 bars	\$36,146.54
Christy, 4 bars	7,719.42
Stormont, 8 bars	18,614.16
Barbee & Walker, 4 bars	6,390.03
Crismon-Mammoth, 4 bars	1,873.00
Carrie Steele, 2 bars	1,716.31
Leeds, 3 bars	4,729.62
Old Telegraph, 7 cars	8,450.00
Brooks, 3 cars	5,900.00
Germania, 6 cars	11,070.00
Total	\$104,609.08

The Utah bullion shipments for the week ending Saturday, June 12th, inclusive, were as follows:

Ontario, 28 bars	\$33,307.75
Stormont, 4 bars	7,849.37
Barbee & Walker, 3 bars	5,551.46
Christy, 2 bars	3,558.18
Crismon-Mammoth, 6 bars	1,960.00
Germania, 4 cars	7,430.00
Old Telegraph, 6 cars	8,660.00
Horn Silver, 2 cars	5,500.00
Brooks, 3 cars	5,550.00
Silver Ore, 1 car	1,975.28
Total	\$81,342.04

Horn-Silver.—The long-looked-for construction-train has at last arrived at the Horn-Silver mine. The railroad was to have been completed to the mine by January 1st last. The steam hoisting-machinery for the mine is now nearly completed. Heretofore, hoisting has been done by means of a wooden whim, and with such rude appliances the shaft has been sunk to a depth of 300 feet. At this depth the vein is 70 feet wide, and, according to estimates of some of the best experts, there is \$70,000,000 net of ore exposed to measurement above this level. Five levels have been run at intervals of 60 feet. The new hoisting-machinery will serve for the shaft and levels to a depth of 1000 feet. The company has over \$600,000 in base bullion, and in ore ready for smelting. The new refinery of the company at Chicago is now completed and at work refining the base bullion.

Salt Lake Receipts.—The ore and bullion receipts at Salt Lake City, in May, over the railroads, were as follows:

	Ore.	Bullion.
	lbs.	lbs.
Utah Central	12,915	1,674,484
Utah Southern	1,183,871	1,239,294
Utah Southern Extension	44,902	2,293,294
Total	1,351,688	2,913,778

The receipts of bullion at Salt Lake City, by Messrs. Wells, Fargo & Co., from June 7th to June 11th, amounted to \$29,138, of which \$23,638 were from the Ontario mine. The receipts of bullion at Salt Lake City from Utah mines during May amounted to \$319,818.

Silver Reef.—The Silver Reef District shipped for May, with but 25 stamps running, \$113,013.19. The Stormont shipped \$50,000 of this, and the Barbee & Walker \$25,000. Balance was divided between the Leeds and Christy.

The Miner says: "The Stormont Company is credited with \$54,000 of the \$113,013 shipped from the Reef during the past month. This little straw indicates pretty clearly the value of a ten-stamp mill and a good mine or two in this sandstone district."

The Barbee & Walker mine has, for the past three months, paid a daily net profit of \$500, bullion receipts during the same period having been about \$6000 per week.

Ontario.—The Ontario shipments for the first week in June were \$36,146.54

Carrie Steel.—The Carrie Steele Mining Company, of Camp Floyd District, Utah, has begun bullion shipments, the first two bars, valued at \$3586, having arrived at Salt Lake City on the 22d ultimo. The property is owned by a New York company, which has put it in a thorough state of development during the past ten months. The mine, which is said to contain extensive ore-reserves, produced prior to its incorporation \$82,000. A 20-stamp mill has been purchased, which is now running.

MISCELLANEOUS.

The Concentration of Bullion at New York.—The course of the bullion flow is changing, and from present indications New York is destined soon to become the bullion center of the country, if not of the world. The establishment of the headquarters of the principal producing mines of the country in this city is now a fixed fact, and that the production of these mines is coming to this city is proved by the rapidly increasing receipts of bullion. For the week ending June 5th, we are reported receipts of bullion from the mines aggregating \$250,000. For the week ending June 12th, \$270,411 were received from the same source, while for the week ending with to-day the total, "estimated," will scarcely fall short of \$275,000.

The Evening Mail says of this: "It seems to us quite certain that this city must ere long become the central and controlling point for transactions in bullion. San Francisco will remain the center of a great mineral section, but the figures we present indicate a natural and necessary change of influence. California, Western Nevada, Western Arizona, Oregon, and Idaho will still and mainly center at the Queen City of the Pacific coast. But to New York will be shipped direct a great amount of bullion from the region indicated, because there will be a large number of important mining properties within it owned and controlled directly from this city. We may yet expect to divide the total in direct shipments to this mart. But commercially and geographically considered, New York must become—in fact, is becoming—the point of bullion shipments for the whole of Colorado, New Mexico, Utah, Eastern Arizona, Montana, the Black Hills, and a large portion of Eastern Nevada. Every week concentrates mining for the precious metals in this direction. This tendency will soon be accelerated. The necessities of transportation are evidenced by the rapid construction of railroads, which within

the Western mining regions are now progressing at the rate of not less than sixty miles per week, while forty more of rails are being laid to make and complete connections with it. New York, as the bullion, shipping center of this continent, a result which is sure to come, this city is likely to dispute with London the world's quotation-making power. San Francisco will always have in Asia a market for its silver, and thus remain in a large and important, if secondary, position. In proof of what we suggest, we aggregate the total shipments from Utah, Dakota, and Arizona to San Francisco from the 1st of January to the 23d of May, 1880. The total is as follows:

Dakota.....	\$534,500
Arizona.....	434,702
Utah.....	402,664
Total.....	\$1,371,866

"No one will deny that these shipments must, ere long, gravitate to this city. Their increase, which will soon be very great, must also follow the same tendency. From the whole of Northern Mexico, soon to be opened by American railroads, the great portion of the bullion production will be sent to this port. It needs no labored statement to establish this, and the proof of it is so plain, that he who runs may read."

Exports of Gold and Silver from New York.

Week ending June 12th.....	\$133,262
Corresponding week last year.....	1,016,105
Since January 1st.....	4,302,343
Corresponding period last year.....	10,854,464

Gold Interest Paid Out by the Treasury.

Week ending June 12th.....	\$417,394
Corresponding week last year.....	210,560
Since January 1st.....	25,450,328
Corresponding period last year.....	27,665,643

New York as a Bullion Depository.—The *Shipping and Commercial List* says: "In the vaults of the sub-treasury in this city, there are now piled up six hundred and twelve tons of newly-coined silver dollars. This inconvenient treasure occupies a vault which is 47 feet long, 27 feet wide and 12 feet high. In the same vault are stored 139½ tons of gold, worth \$65,000,000."

The Treasury Department on the 17th inst. purchased 458,000 ounces of fine silver for delivery at the San Francisco and Philadelphia mints.

There was quite an active export demand for coin and bullion at San Francisco during May, the aggregate shipments being nearly \$1,600,000, including \$327,100 in gold coin, \$55,400 in currency, and the remainder in coined and uncoined silver, of which \$545,700 was in Mexican dollars.

METALS.

NEW YORK, Friday Evening, June 18.

Tin has come to the front in starting what appears to be a renewed interest in metals. Outside of this article there has been no movement yet, but if the price and business in tin should be maintained, other metals are likely to sympathize to a certain degree.

Copper.—There is only a jobbing business at 18@18½c. The consumers are unwilling to pay the prices asked by the mining companies, which are showing no inclination to make concessions. Chili Bars are quoted in London at £58 and Best Selected at £63.

Our London advices by mail are to June 8th. On May 31st, business was dull at £56¾@£57, cash.

Charters—	1880.	1879.	1878.	1877.
January 1st to May 31st.....	19,368	20,766	18,452	18,871
May only.....	1,100	5,700	3,353	2,965

Price at Valparaiso was nominally the same as on the 14th inst. (parity of £56½) but no sellers. On June 1st, there was a fair business at £56. On the 22d, about 500 tons sold at £56 net up to £56½, customary conditions. On the 3d, there were rumors of extensive business in Liverpool. Sales of about 300 tons at £56@£56¼ cash, and £56½@£56¾ extended prompts. On the 4th, about 800 tons changed hands at £56@£56¼ cash, and £56½@£56¾ for extended prompts. On the 7th, a small business was done at £56 fixed prompts, to £55½ cash. Advices of the 8th say:

Cash metal continues scarce, the only transactions reported in Chili Bars being about 200 tons, cash and short-fixed prompts at £55½@£55¾, partly net money, partly with the usual brokerage allowed. There were buyers at £55½ at the close, and a few sellers at £55¾, who seemed disinclined, however, to sell except on net terms. Australian neglected; Wallaroo, £70@£72; Burra Cake, £68@£70. Telegrams are in from New York, with advices of a rise in Lake Ingots to 19c. per pound; this figure is about equal to £87½ net cash, and would seem to preclude the possibility of shipments to Europe, at least for the present. At the Swansea Ticketing-to-day, 1497 tons of ore, averaging 9¼ per cent produce, sold at an average price of 11s. 1½d. per unit."

STATISTICS OF COPPER, LONDON, LIVERPOOL, SWANSEA, AND FRANCE.

	—May 1st to 31st.—		
	Imports.	Deliveries.	
	Tons.	Tons.	
Fine foreign, chiefly Australian.....	485	1,065	London.
Chili Bars and Ingots.....	575	1,801	Liverpool
(In Ores and Regulus.....	Nil	Nil	& Swansea.
Totals, England.....	1,060	2,866	
Fine foreign, chiefly American.....	Nil	Nil	France.
Chili Bars, Ingots, and Barrilla.....	1,219	400	
Tons.....	2,279	3,266	

	—Stocks.—		
	May 31st.	April 30th.	
	Tons.	Tons.	
Fine foreign, chiefly Australian.....	5,362	5,942	London.
Chili Bars and Ingots.....	31,345	32,571	Liverpool
(In Ores and Regulus.....	465	465	& Swansea.
Totals, England.....	37,172	38,978	
Fine foreign, chiefly American.....	633	633	France
Chili Bars, Ingots, and Barrilla.....	4,123	3,304	
Tons.....	41,928	42,915	
Chili, chartered (Mail and afloat.....)	12,530	11,925	
and Telegram.....	3,900	2,900	
Tons.....	58,358	57,140	
Chili G. O. Bs.....	£56¼	£60¼	
Wallaroo Cake.....	72	76	

	—Jan. 1 to May 31.—		
	1880.	1879.	1878.
	Tons.	Tons.	Tons.
Imports.....	18,330	19,498	22,069
(Chili.....)	4,089	7,059	5,582
Other foreign.....	14,241	12,439	16,487
Tons.....	22,419	26,557	27,651
Deliveries.....	19,205	17,234	17,368
(Chili.....)	3,541	6,097	4,067
Other foreign.....	15,664	11,137	13,301
Tons.....	22,746	23,331	21,435

Tin.—There has been a not unexpected move in this article. The sales will aggregate about 500 tons; Straits selling up to 17¼c., and Australian and Billiton to 17c. At the close, 17½c. is bid for Straits, and 18c. asked; for Australian, 17¼c. is bid, and 17¾c. asked; and for Billiton, 17¼c. bid, and 17½c. asked. Straits in London are quoted at £81; in Singapore at £23.75, with exchange at 3s. 10½d.

Our London advices to the 8th inst. say: On May 31st, there were a few cash sales at £72½ down to £71¼. On June 1st, heavy forward sales broke the market £1 10s. On the 2d, the market was still weak, under "bull" pressure. A large forward business was done on the 3d for July and August delivery, at £69 10s.@£68 10s. On the 4th, the market began to change under a small business at £68¼@£69 cash and £69@£69¾ forward. Under a fair business, the market was steady. On the 8th, about 150 tons of slightly forward prompts sold at £68¼@£69, and a little at £68½@£68¾, sharp, cash.

Tin Plates.—These are quiet. Cable advices quote coke tins at 15s. 6d. in Liverpool. We quote per box as follows: Charcoal tins, third cross, Melyn grade, \$6.50 @ \$6.62½; Allaway, \$6.25 @ \$6.37½; ternes, Allaway, \$5.50 @ \$5.62½. Coke tins, B. V. grade, \$5.12½, and ternes, \$5.

Messrs. Robert Crooks & Co., of Liverpool, under date of June 3d, say of tin and terne plates:

"The stagnation has been increasing week by week, until now sellers are offering, without finding any response of consequence, for coke tin within ls. per box of the lowest prices ever touched. Other descriptions are not so dejected; but appearances point, unless a sudden change comes, to their becoming so before long. These figures, it is needless to say, are considerably below cost at present price of material."

Lead.—The market is very quiet but strong. The reported sales aggregate about 150 tons at 4¾c. The larger holders are asking 5c., and are practically out of the market. The St. Louis quotation is 4¾@4½c., with freight at 40c. The English quotation has advanced £1, and is about £15 c. f. i.

The shipments of lead from London and Liverpool to the East, for the first five months of 1878, 1879, and 1880, were as follows:

To	1878.	1879.	1880.
	Tons.	Tons.	Tons.
Madras.....	60	53	37
Calcutta.....	404	247	106
Bombay.....	144	249	100
China.....	5,035	3,493	2,542
Japan.....	638	79	.....
Singapore and Penang.....	65	.....	75
Total.....	6,346	4,121	2,860

Spelter and Zinc.—Both are very quiet. The former is quoted at 5½c., and the latter at 7¼c.

Antimony.—There is but very little doing. Cookson's is quoted at 18c., and Hallett's at 17c.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, June 18.

No real improvement is observable. There is, however, a very good inquiry and a large consumption going on. Foreign stocks in this market are being rapidly reduced, and the importations are falling off. Such iron as remains here is steadily getting into a stronger position. Although no advance in prices has yet taken place, there is a very much better feel-

ing, and any thing like active purchases would very quickly cause an advance.

American Pig.—We learn of no important sales for this article. The furnace companies, however, say that they are making very active deliveries, and the best-known brands are scarce. A number of furnaces that should never have gone into blast will probably soon be retired again. We quote No. 1 Foundry at \$23@25; No. 2, \$22@24; and Forge, \$20@22.

Scotch Pig.—There has been quite a large business in this article during the past week—in fact, during several weeks past. The sales for the week under review will probably aggregate 5000 tons. Prices are somewhat higher than they were. We quote Eglinton at \$20@21; Coltness, \$23@23.50; Glengarnock, \$21@22; and Gartsherrie, \$21@22.

Messrs. John E. Swan & Co., of Glasgow, under date of June 4th, report 116 furnaces against 89 at the same time last year. The quantity of iron in Connal & Co.'s stores was 444,239, an increase of 867 tons for the week. The shipments show an increase of 102,601 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 5660 tons. The following are the quotations of the leading brands of No. 1 pig-iron: Gartsherrie, 50s.; Coltness, 55s.; Langloan, 55s.; Summerlee, 52s.; Carnbroe, 49s. 6d.; Glengarnock, 49s. 6d.; Eglinton, 46s. 6d. Middlesbrough pig-iron was quoted as follows, f. o. b.: No. 1 Foundry, 41s.; No. 2, 38s. 6d.; No. 3, 36s.; No. 4, 36s.; No. 4 Forge, 36s.

Rails.—There have been several thousand tons of both steel and iron rails sold during the past week, both of English and American makes. There is a fair inquiry which is likely to continue. Steel rails are quoted at \$60@65 and iron rails at \$45@47. It is said that a lot of English steel rails have been sold c. f. i. at Montreal at £6 and a lot for this market at £6 5s.

Old Rails.—These are quiet, and although small lots are being constantly picked up at \$23.50@24 ex ship, a lot of 5000 tons could not be bought short of a dollar or two advance.

Wrought Scrap.—Sales of two or three thousand tons are reported at \$21@22.50.

We publish the following letters received from our regular correspondents:

"BALTIMORE, JUNE 14.

"The Iron market, for past week, has been quiet, purchases being confined to lots for immediate consumption. These, however, have been sufficient to absorb the make of best car-wheel irons; and there are no stocks accumulating. Anthracite irons are a shade lower. We quote present prices about as follows:

Balt. Char.....	\$45.00@	\$ 0470	Mot and Wh.....	\$20.00@	\$21.00
Va. ".....	45.00@	47.00	Cl. C. B. Blo'm.....	70.00@	75.00
Anth. No. 1.....	24.00@	25.00	" Billets.....	70.00@	75.00
" ".....	23.00@	24.00	Refined Bl'm.....	55.00@	60.00
" ".....	22.00@	23.00			

"R. C. HOFFMAN & Co."

"COLUMBUS, JUNE 16.

"The demand for Pig-Iron has increased the past week, and consumers show more of a disposition to buy round lots than for some time past. Prices may be reported a little firmer. We quote as follows:

FOUNDRY IRONS

No. 1 Hanging Rock Charcoal.....	\$27.00@	\$29.00
No. 2 ".....	26.00@	28.00
No. 1 Hocking Valley.....	24.00@	25.00
No. 2 ".....	23.00@	24.00
No. 1 American Scotch.....	24.00@	25.00
No. 1 Glasgow.....	24.00@	25.00
No. 1 Jackson County.....	23.00@	24.00
No. 2 ".....	22.00@	23.00
No. 1 Silver Gray.....	21.00@	22.00
No. 2 ".....	20.00@	21.00

MILL IRONS.

Gray neutral.....	22.00@	23.00
Mottled and white neutral.....	20.00@	21.00
Gray cold short.....	20.00@	21.00
Mottled and white cold short.....	19.00@	20.00

"KING, GILBERT & WARNER."

"PITTSBURG, JUNE 15.

"There are some indications of improvement in the market, although actual sales are still very light, being confined mostly to small lots of foundry iron for immediate use. Most of the mills, however, have signed the new scale, and some are about starting their puddlers, which encourages the hope that they will soon be in the market for further supplies. Quotations are:

No. 1 F'dry.....	\$25.00@	\$26.00	M. & White.....	\$19.00@	\$20.00
No. 2 ".....	24.00@	25.00	Hot Blast Ch.....	35.00@	40.00
Gray Forge.....	20.00@	25.00	Cold Blast W.....	50.00@	60.00

"A. H. CHILDS."

"RICHMOND, JUNE 14.

"A fair business. Quotations same as last week."

"ASA SNYDER."

"ST. LOUIS, JUNE 12.

"Prices quoted are to an extent nominal. There is a little more business, and it is fair to expect quite an active trade as soon as the semi-annual stock-taking is over."

"CARD & HOFFER."

COAL TRADE REVIEW.

Anthracite.

NEW YORK, Friday Evening, June 18.

The demand during the past week has been very good for large sizes, and some improvement is noticeable in the demand for domestic sizes. The public is still of the opinion that the coal companies will fail in their efforts to regulate the trade, and are purchasing as little coal as possible. The longer buyers keep out of the market, however, the surer the companies feel in their position, and it is now the general belief among the best informed in the trade that the demand will eventually be so great as to warrant a considerable advance in prices. Freight rates are very low, and it is impossible to contract for future deliveries. With the demand that surely must come, freights must advance considerably, and our advice to our readers is, to take advantage of the present depression; for there is no indication whatever that, coal can be delivered at any time during the year at a lower price than at the present time. It has been resolved to suspend production during the first twelve working days of July. This should certainly put the trade upon a very solid foundation.

The production of anthracite coal last week was 401,277 tons, as compared with 374,618 tons the previous week, and 560,112 tons the corresponding week of 1879. The total production from January 1st to June 12th was 9,104,316 tons, as against 10,375,300 tons for the like period of last year, showing a decrease this year of 1,270,984 tons.

Our Philadelphia correspondent writes as follows, under date of June 17th:

"The trade is dull, but the determination of the companies to curtail production until present rates are firmly established is evident, and dealers who do not avail of the very low freights now ruling (\$1 to \$1.15 to Boston; 75c. along to Portland; 45c. to Norfolk; 55c. to Richmond) may have cause to regret it.

"A stoppage from July 1st to July 12th is proposed by New York, and one from July 3d to 19th by Philadelphia, and very likely one of the two propositions will be carried out.

"Blast furnaces are beginning to blow out one after another on the Schuylkill; and if some concessions are not soon made, lump and steamboat will become very dull when full work is resumed."

The Philadelphia Telegraph of Saturday says:

"With a view to carrying out the policy of dropping the iron interests, the following furnaces, which were in course of construction or near completion, and two of them running under the management of the Philadelphia & Reading Company, have been closed: St. Clair, Palo Alto, Port Carbon, Ringgold, Swede, and Emaus. The large furnaces at Danville are to be held until certain contracts can be carried out. Work on the Shenandoah road, built in Virginia to carry ore and iron, has been suspended. The company owns a number of furnaces in the State which are under lease. The lease-holders take all the coal and ore from the Reading companies, and in return give them half of the profits on the metal. Under the management of the receivers, cash must be paid for every thing. In consequence of the small profits on iron, their suspension is a question of very little time, and as their furnaces revert to their owners, it is thought that under the new regime they will be disposed of. The mills will be unloaded in the same way. It is understood that the receivers are dealing with prominent capitalists of this city and New York, with a view of forming a syndicate which will lease all the coal lands of the company."

Bituminous.

The demand for this class of coal is light and prices are weak. The shippers, however, look for an improvement in anthracite coal a little later on, and a corresponding sympathy on the part of bituminous. A noteworthy feature in the Cumberland trade is the first shipment now being made by the Maryland Coal Company from Philadelphia. This does not bear the significance that would be attached to it were the Cumberland & George's Creek Railroad completed and connection made with the Pennsylvania Railroad in Maryland. At the present time, there is an advantage in shipping from Philadelphia to certain points; but with the completion of this railroad, the advantage will be much greater. The Cumberland District is laboring under the disadvantage of paying much higher rates for mining its coal than is paid in the Clearfield region, and there is no indication of united action on the part of producers to remedy this. The Clearfield companies have been successful in holding wages down to old rates, and have now an abundant supply of labor. The production of the Cumberland region this year makes a very favorable showing, being about 250,000 tons greater than at the corresponding time last year. The Clearfield region, owing to a three months' strike, does not show so well, although the production, according to the last report, differed but very little from that of the Cumberland District. As an evidence, however, of the great growth of the business of the Clearfield region, can may cite the business of the firm of Berwind, White & Co. In

1874, the shipments amounted to 112,335 tons; in 1875, 143,466 tons; in 1876, 176,906 tons; in 1877, 249,603 tons; in 1878, 262,103 tons; and in 1879, 374,913 tons. Owing to the strike in the region, the shipments of this firm up to June 1st amounted to but 184,000 tons; but for the remainder of the year, it is estimated that its shipments will amount to 50,000 tons per month, or at the rate of about 600,000 tons per annum. A few years ago, this coal was looked upon unfavorably, but now this firm numbers among its contracts that of the Long Island Railway, the State Line of Steamships, the Red Star Line, the Boston & Albany Railroad, the New York & New England Railroad, the Hamburg American Line, the Netherland Steamship Navigation Company, the Great Western Steamship Company, the Morgan Texas Line, the White Cross Line, the Red D Line, and others, amounting to about 150,000 tons for the steamship trade, and over 200,000 tons for the railway trade. A few years ago, these orders were taken by the prominent Cumberland companies. This firm will probably equal or exceed the business of the largest shipper in the Cumberland region this year.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending June 12th, and years from January 1st:

Tons of 2240 lbs.	1880.		1879.	
	Week.	Year.	Week.	Year.
<i>Wyoming Region.</i>				
D. & H. Canal Co.	44,654	1,294,746	77,428	1,316,306
D. L. & W. RR. Co.	55,702	1,436,333	82,370	1,507,946
Penn. Coal Co.	20,451	406,379	35,425	595,295
L. V. RR. Co.	19,732	424,799	20,564	406,227
P. & N. Y. RR. Co.	*	10,946	640	10,766
C. R. R. of N. J.	28,763	630,622	39,618	781,627
Penn. Canal Co.	15,554	112,978	.....	101,555
	184,856	4,322,803	256,045	4,721,722
<i>Lehigh Region.</i>				
L. V. RR. Co.	61,085	1,283,985	82,438	1,324,417
C. R. R. of N. J.	36,266	821,069	48,313	806,188
S. H. & W. B. RR.	.....	5,831	810	11,780
	97,951	2,110,885	131,561	2,232,385
<i>Schuylkill Region.</i>				
P. & R. RR. Co.	105,326	2,350,961	157,380	3,052,249
Shamokin & Lykens Val.	.....	.....	.....	.....
	118,470	2,653,282	171,465	3,397,177
<i>Sullivan Region.</i>				
St. Line & Sul. RR. Co.	.....	17,346	1,041	23,916
Total	401,277	9,104,316	560,112	10,375,300
Increase	.....	.....	.....	.....
Decrease	158,835	1,270,984	.....	.....

Total same time in 1875..... 5,350,757 tons.
 " " " 1876..... 6,452,293 "
 " " " 1877..... 8,652,191 "
 " " " 1878..... 6,302,849 "
 " " " 1879..... 10,375,300 "

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.

* These reports were not received this week.
 Coals Cleared on the Canals of the State of New York for the week ending June 14th, and year from the opening of navigation:

Tons of 2000 lbs.	1880.		1879.	
	Week.	Year.	Week.	Year.
Anthracite	22,559	205,575	37,848	216,800
Bituminous	7,872	50,851	8,777	25,878
Total amount cleared	30,431	256,426	46,625	242,678

Belvidere Delaware Railroad Report for the week, and years ending June 12th:

Coal for shipment at Coal Port (Trenton)	Week.	Year.	Year.
	1880.	1880.	1879.
Coal for shipment at South Amboy	977	11,409	2,159
Coal for distribution	7,292	171,111	208,684
Coal for company's use	8,664	205,601	149,083
	1,911	44,608	37,068

The increase in shipments of Cumberland Coal over the Cumberland Branch and Cumberland and Pennsylvania railroads amounts to 249,479 tons, as compared with the corresponding period in 1879.

The Production of Bituminous Coal for the week ending June 12th was as follows:

Tons of 2240 lbs.	Week.	Year.
<i>Cumberland Region, Md.</i>		
Tons of 2240 lbs.	46,738	894,938
<i>Barclay Region, Pa.</i>		
Barclay RR., tons of 2240 lbs.	.....	194,201
<i>Broad Top Region, Pa.</i>		
Huntingdon & Broad Top RR.	2,502	109,175
*East Broad Top	820	36,748
<i>Clearfield Region, Pa.</i>		
Snow Shoe	561	29,781
*Tyone and Clearfield	45,892	541,834
<i>Allegheny Region, Pa.</i>		
*Pennsylvania RR.	5,866	163,741

<i>Pittsburg Region, Pa.</i>		
*West Penn. RR.	3,209	124,082
*Southwest Penn. RR.	1,072	26,310
*Penn. & Westmoreland gas-coal, Pa. RR.	14,313	519,148
*Pennsylvania RR.	13,771	242,155
*For the week ending June 7th.		
† This report was not received this week.		

The Production of Coke for the week ending June 7th:

Tons of 2000 lbs.	Week	Year.
Penn. R.R. (Allegheny Region)	1,208	29,003
West Penn. RR.	742	43,341
Southwest Penn. RR.	19,551	460,908
Penn. & Westmoreland Region, Pa. RR.	2,121	62,062
Pittsburg, Penn. RR.	4,770	203,820
Total	28,392	799,134

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to June 18th, 1880.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
	Alexandria	60
Annapolis	.....	.....	.....
Apportion	50¢	.....	.....
Baltimore	.....	.....	.....
Bangor	.....	.....	80
Bath, Me.	.....	.....	80
Beverly	.....	.....	.....
Boston, Mass.	1.14@1.30	.....	80
Braintree	.....	.....	.....
Bridgeport, Conn.	.....	.....	60
Brooklyn	.....	.....	.....
Cambridge, Mass.	.....	.....	.....
Cambridgeport	1.50@1.61½	.....	.....
Camden	.....	.....	.....
Charleston	60@80	.....	.....
Charlestown	.....	.....	.....
Chelsea	.....	.....	.....
City Point	.....	.....	.....
Com. Pt., Mass.	1.25	.....	.....
E. Boston	.....	.....	90
East Cambridge	.....	.....	.....
E. Greenwich, R. I.	.....	.....	.....
Fall River	.....	.....	.....
Georgetown	65	.....	.....
Gloucester	1.25	.....	.....
Hartford	.....	.....	.....
Keyport	.....	.....	.....
Lambertville	.....	.....	.....
Lynn	1.35@1.45	.....	.....
Marblehead	.....	.....	.....
Medford	.....	.....	.....
Millville	.....	.....	.....
Milton	1.30	.....	.....
Mystic River	.....	.....	.....
N. Brunswick, N.J.	.....	.....	.....
New Bedford	1.15@1.20	.....	75
Newburyport	1.30	.....	.....
New Haven	.....	.....	60
New London	.....	.....	.....
Newport	.....	.....	70
New York	75@80¢	.....	.....
Norfolk, Va.	.....	.....	.....
Norwich	.....	.....	.....
Norwalk, Conn.	.....	.....	.....
Pawtucket	1.30*	.....	.....
Petersburg, Va.	70@75	.....	80
Portland	80*	.....	.....
Portsmouth, Va.	.....	.....	.....
Portsmouth, N.H.	1.15	.....	90
Providence	.....	.....	70
Provincetown	.....	.....	.....
Quincy Point	.....	.....	.....
Richmond, Va.	55@60	.....	.....
Rockland	.....	.....	.....
Rockport	.....	.....	.....
Roxbury	.....	.....	.....
Saco	.....	.....	.....
Sag Harbor	.....	.....	.....
Salem, Mass.	1.40	.....	80
Saugus	.....	.....	.....
Savannah	.....	.....	.....
Somerset	.....	.....	75
Staten Island	.....	.....	.....
Trenton	.....	.....	.....
Troy	.....	.....	.....
Wareham	1.30	.....	.....
Washington	60@65	.....	.....
Weymouth	.....	.....	.....
Williamsbz, N.Y.	.....	.....	.....
Wilmington, Del.	.....	.....	.....
Wilmington, N.C.	1.00	.....	.....

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

OLIVER B. HARDEN,
 Stenographer,
 Member of A. I. Mining Engineers, University of Pennsylvania, West Philadelphia. Verbatim Reports of Technical Subjects in Suits at Law, of Scientific Bodies, Lectures, Sermons, etc.

OFFICE OF LA PLATA MINING AND SMELTING CO., OF LEADVILLE, COL.,
 No. 58 Broadway, Rooms 12 and 13.
 New York, June 17, 1880.
 DIVIDEND NO. 10.

The Board of Trustees have this day declared a dividend of SEVEN and ONE HALF CENTS per share (par value, \$10) on the capital stock, payable on July 1st, prox., at the office of the company. W. B. ALLEN, Asst. Sec.