

ENGINEERING and MINING JOURNAL.

VOL. XXIX., No. 14. (WITH SUPPLEMENT.)

RICHARD P. ROTHWELL, C.E., M.E., } Editors.
 ROSSITER W. RAYMOND, Ph.D., }
 WILLIAM H. WAHL, Ph.D., Department of Progress in Science and the Arts.

NOTE.—Communications relative to the editorial management should be addressed to RICHARD P. ROTHWELL, P.O. Box 4404, New York.
 Communications for Mr. RAYMOND should be addressed to ROSSITER W. RAYMOND, P.O. Box 1465, New York. Articles written by Mr. RAYMOND will be signed thus *.
 SUBSCRIPTION PRICE, including postage, for the United States and Canada, \$4 per annum; \$2.25 for six months; all other countries, including postage, \$5.00 = 20s. = 25 francs = 20 marks. All payments must be made in advance.
 REMITTANCES should always be made by Post-Office Orders or Bank Drafts on New York, made payable to THE SCIENTIFIC PUBLISHING COMPANY.
 THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
 27 Park Place, New York.

CONTENTS.

EDITORIALS:	PAGE.	GENERAL MINING NOTES:	PAGE.
Dr. Raymond's Report.....	231	Colorado.....	238
Editorial Correspondence—Eureka District.....	231	Dakota.....	239
Dr. Raymond's Report on the Little Pittsburg.....	232	Georgia.....	239
New Publications.....	235	Michigan.....	239
The Massachusetts & New Mexico Mining Company.....	235	Nevada.....	240
COAL NOTES.....	235	Utah.....	240
IRON NOTES.....	236	PROPOSALS.....	240
LABOR NOTES.....	236	FINANCIAL:	
PROGRESS IN SCIENCE AND THE ARTS:		Gold and Silver Stocks.....	243
American Products Abroad.....	237	Coal Stocks.....	245
Technical Brevities.....	237	Copper Stocks.....	245
State of the Iron Trade.....	238	Gas Stocks.....	246
A "Hydrostatic" Joint for Gas and Water Mains.....	238	BULLION MARKET.....	246
GENERAL MINING NEWS:		METALS.....	247
Arizona.....	238	IRON MARKET REVIEW.....	241
California.....	238	Prices of Iron.....	247
		THE COAL TRADE REVIEW.....	240
		Prices of Coal.....	248
		STATISTICS OF COAL PRODUCTION.....	249
		FREIGHTS.....	248
		Miscellaneous Stocks and Quotations.....	246

We shall give next week a map, showing the proportion of the ground of the Little Pittsburg Company which remains to be developed. This map could not be finished in time for the present number. The one given in this week's supplement shows the workings, but not much of the unworked ground outside of them.

MR. FRANK FOSSETT is now in this city, engaged in getting out a new and revised edition of his illustrated work on Colorado, which will bring the mining record and statistics of that State down to date, or as near to date as is possible. New mines and mining districts will be noticed, and the older ones will receive further space and attention.

IN DR. RAYMOND'S article on BERNHARD VON COTTA, in the JOURNAL for February 28th, page 148, the names FRIESELAVES, BEUSD, FRIEZE, ought to have been FRIESLEBEN, BEUST, FRITZSCHE. Further, on page 149, the 18th and 19th lines from the top of the second column should read:

"Where, for a while, reluctantly
 The shore surrendered to the sea;"

The paternity of these errors rests neither with Dr. RAYMOND nor with the proof-reader, but must be charged to the innate perversity of things.

DR. RAYMOND'S REPORT.

We publish this week the full report of Dr. RAYMOND on the condition and prospects of the Little Pittsburg Company's mines. It ought to set at rest a host of petty misrepresentations concerning his motives and his professional accuracy, in which over-willing critics have indulged. Unfortunately people of that kind are not so swift to retract, as they are to advance, false accusations. But there is another and still more hopeless class, characterized by a combination of stupidity and malignity which defies amendment. For all we can see, a man too mean to repent, and too ignorant to reform if he should repent, is beyond useful correction. The best that can be done with him is to exhibit him for the amusement of more intelligent people. This is not a cruel sport: the spectators derive pleasure, and the victim feels no pain. It is merely the vivisection of ridicule rendered humane by the ether of dullness and self-conceit in which the "subject" is steeped. Let us, therefore, proceed to lay open an anatomy or two.

Here, for instance, is a fine specimen—a gentleman who remarks from the editorial tripod that Dr. RAYMOND "evidently does not understand his business, having reported five million dollars"—pshaw! we have cut open the wrong fellow! This is a mere vulgar falsehood, and not funny at all. On the contrary, by the time it has been copied into a few hundred newspapers, and found its way out West through the hands of skillful editors who touch nothing that they do not adorn, it is emphatically the reverse of funny. Let us disembowel another specimen.

Ah! this is better. A gentleman in the real-estate line gets out with much flourish of trumpets a Special Extra, devoted to the business of re-

vealing, denouncing, insinuating, asserting, inquiring, and warning, largely, of course, with reference to Leadville in general, and Little Pittsburg in particular. He is specially severe on every body who does not hold the stock. He comments savagely on the fact that Mr. A. S. HEWITT is not in the list, and wants to know who told him "and other directors" to sell out. It would be quite useless to hammer this fellow's skull with the fact that Mr. HEWITT was neither a promoter nor a director of the company, and that his name was never on the list of stockholders. That would only prove new villainy to his mind. Another suspicious circumstance which he has discovered is, that Dr. RAYMOND, "it is said, never owned any of the stock himself, and has not been near the mine since he made his report last year." How he got hold of this, we can not divine. He must have gathered it by mistake; for it is actually true. Dr. RAYMOND never owns stock in the mines on which he makes reports; and like most men whose daily business is mining, he does not "go near" any mine unless duty requires it. If there is another person in the world, besides this one, who expects that after Dr. RAYMOND has examined a mine, made his report to his employers, and received his fee, he will continue out of sheer enthusiasm to dry-nurse the enterprise, and keep the public advised through the newspapers of its progress and prospects—then there is one idiot more than we supposed.

We will close to-day's exhibition with a truly brilliant example. A gentleman in the Indicator line rises in wrath because Dr. RAYMOND is at Leadville examining the Little Pittsburg mines, and declines to tell a newspaper reporter all about it. This truly logical inquirer (after rehearsing a stale slander already disclaimed by Gen. BEARCE, on whom he saddles it) wants to know, you know, "what right has Professor RAYMOND to conceal his report from the many pecuniarily interested in Little Pittsburg, and to confine it to the management? Is there another job in it?"

Now, this is a yearning which never can be gratified. Wanting to know, coupled with the incapacity of understanding, is an incurable complication. But while pointing out with mild pity and scientific interest the malformation of this "subject," we will address a word, in closing, to others whose organic derangement is not hopeless.

Neither Dr. RAYMOND nor any other mining engineer, employed and paid by private persons or by corporations, is under any obligations to the public. Even that small portion of the public, the stockholders of a company, can be properly addressed only through the agency by which the engineer is employed. If an expert's reports are garbled and misused by his employers, he should, of course, insist that they set him right, and, failing that remedy, he may, in duty, not to the public, but to himself, disregard the obligations which, in reality, the other party has already destroyed.

In this case, the newspapers had no right whatever to demand that Dr. RAYMOND should violate professional confidence to satisfy public curiosity. The stockholders of the Little Pittsburg Company had no right to demand it of him; though they had a right to expect a full statement from their Directors. It is true that Dr. RAYMOND visited the mines without having been specially requested to do so, and without knowing whether the Directors would require a report from him. But he was admitted to the mines and all sources of information under circumstances involving certain obligations toward the Directors. If they had not, immediately upon his return, engaged him to prepare such a report, and if they had not authorized him to publish it in full, he might possibly, trembling with mingled wrath and terror at the peril in which he is informed his "reputation" has been placed by Indicators and Records, and so forth, during his blissfully unconscious absence—he might, we say, have done something rash, even "vindicated" himself, perhaps—who knows? Yet, on careful reflection, we are inclined to think he would have endured a considerably louder racket than these gentlemen think they have raised, before he would have felt called upon to violate his professional duty to his clients. A man may break the peace and fire a pistol in self-defense; but not at a mosquito.

EDITORIAL CORRESPONDENCE—EUREKA DISTRICT.

EUREKA, NEV., March 12, 1880.

TO THE OTHER EDITOR:

MY DEAR BOY: This is no time for trifling. I have just a bare opportunity to jot down hastily some impressions concerning the Eureka mines; and unless you have leisure to adorn the statement with rhetoric and humor, it must go into the columns of the JOURNAL in Doric simplicity.

Eureka itself, as you remember, got half burned up a couple of years ago. It recovered from the blow with a vigor and rapidity which somewhat strained its vitality. Many brick houses were substituted for wooden ones; he who had one story added unto himself another; and by the time the town had been handsomely rebuilt, it was found to be rather more of a town than population and business actually required. Hence some degree of dullness, which still reigns. But there is no reason for despairing of the future. The camp is far from "played out."

The Richmond Company has a wonderful bonanza in its mines—the largest ore-body, it is said, ever discovered in Ruby Hill. It is agreed on all hands that it will keep the Richmond furnaces running for years. As the works buy a good deal of custom ore, the Richmond reserves will last all the longer.

The Eureka Company is just extracting the last of the great ore-body upon which it has declared dividends for more than two years past. In the 11th level of the mine, the clay-shale hanging-wall and the quartzite foot-wall closed together, squeezing out the limestone zone which carries the ore. The same phenomenon is said to occur in the K K ground to the eastward. But in the 12th level of the Eureka, the vein opens again; and the company could go ahead in depth with excellent prospects, but for the fact that the K K mine is pouring a huge stream of subterranean water into the lowest levels of the Eureka, completely flooding them. This torrent goes roaring into the Richmond, where it however does no harm, but plunges, as I am told, into some cavernous conduit and is heard of no more.

The Eureka Company will probably sink a new, deep vertical shaft to work its mine. The present shaft and interior winzes and inclines are not adequate. Meanwhile, Mr. Read, the energetic superintendent, has discovered certainly three, and probably four, new ore-bodies in levels above the flooded ground; so that there is no prospect of a failure of ore for a long while to come.

The K K is extracting ore—50 tons a day, I am informed—a part of which comes from ground alleged to be beyond its proper boundary toward the Eureka. There are here the elements of another ugly fight, like that of the Eureka and Richmond. For the sake of the mines, the town, the stockholders—every body, in fact, except lawyers and experts—it is to be hoped that this may not come to pass. But if it should occur, one thing is certain, beyond question: the unity of the limestone zone as the "vein" of Ruby Hill will not be disputed by either party. That proposition, so vigorously disputed in the Eureka-Richmond case, has been overwhelmingly established by later developments. The clay-shale hanging-wall has been pierced in numerous places, and followed for hundreds of feet. It is continuous and unmistakable, and not a pound of ore has been found beyond it.

Of the other mines of the district, the Dunderberg is said to have a new, large, and rich bonanza. There is also a considerable amount of talk in town about the Silver Connor, a mine in Prospect Mountain, which has shipped some high-grade ore.

The Eureka & Palisade narrow-gauge railroad, notorious as perhaps the most profitable piece of railway property in the world, will probably continue for a long time yet to earn its big dividends from the charcoal, forage, timber, and general supplies which it carries to Eureka, and the base bullion which it brings away, as well as from the steady stream of passengers which it conveys in each direction.

It is a moot point, whether the new narrow-gauge road just opened from Battle Mountain to Austin will prove financially successful. As there is no smelting done at Austin, there will be less to carry in and less to bring out. Yet I am inclined to believe that the road will pay. It is too early to ascertain the probable amount of business; for the winter supplies of Austin and districts communicating with Austin have been long ago laid in, and their summer supplies are not yet required. There is talk of extending this road both northward to Oregon and southward to Bodie. If, as I hear, the project of a road from Carson to Bodie has been abandoned, this part of the plan seems promising. It would connect Bodie with the East more conveniently than with San Francisco.

Speaking of San Francisco, I am reminded to say that I was there when the "manifesto" of the Citizens' Protective Union (universally understood to be the revival of the Vigilance Committee of a quarter of a century ago) made its appearance; and I can bear witness to the general satisfaction with which it was received. Kearneyism has received a severe check, but scarcely yet, I fear, its death-blow. It is amusing to note how many respectable people, who have gathered courage to denounce, and perhaps to suppress, the blackguard ruffianism of the sand-lots, still echo the false, silly, and cruel talk concerning the Chinese, which the sand-lots have bred. KEARNEY has some ground for his boast that while all parties but his own revile him, they make haste to say that they mean to do what he demands. There is, however, a solid sentiment growing up, which will some day declare plainly that the Chinese must not go, but stay; and that they shall be protected against private violence and legislative persecution while they stay. Whether it is wiser to keep the door wide open for their unlimited coming hereafter, or to seek a modification of the treaty with China which now permits it, is another question, which statesmen may discuss without a blush of shame, when they shall have refused to settle it without discussion, under the threats of a mob. Even that question has two sides. The question whether we will allow any more foreigners at all in this country has two sides. For my part, I do not think the time has come to shut the doors and say that the ark is full.

DR. RAYMOND'S REPORT ON THE LITTLE PITTSBURG.

NEW YORK, April 2, 1880.

HON. J. B. CHAFFEE, *President Little Pittsburg Consol. M. Co.* :

SIR: In May, 1879, I visited Leadville, Colo., for the purpose of examining the property of your company, then just organized. The result of that examination is set forth in my full report, published in the *ENGINEERING AND MINING JOURNAL* of June 28th, 1879.

On the 22d of January, 1880, I left New York for a journey to various portions of the Pacific slope, including the Territory of Arizona, from which I have but just returned. On my way home, I learned of the suspension of dividends by your company; and being desirous to learn for my own satisfaction the true condition of affairs, I took occasion, while at Leadville, to apply to your superintendent for permission to examine the mines. I found that he had been instructed by telegraph, in case of such an application, to furnish me with every facility, and to give me access, not only to the workings, but also to the records and accounts of the company. As I visited the mines on my individual responsibility, I felt myself bound, in return for this courtesy, to make no publication of the results of this second examination until I had first communicated them to the company. In obedience to your request, received since my return, I now proceed to make a full statement of them, which, with your permission, I shall also publish immediately in the *ENGINEERING AND MINING JOURNAL*, in which my first full report was printed. This simple recital of facts may serve to explain some apparently contradictory statements on the subject, circulated in the newspapers.

I do not conceive it necessary, and if it were necessary, I should not think it in this place appropriate, to enter upon an elaborate vindication of my former report. Otherwise, I might take pains to show that of all the estimates ever placed upon the reserves of ore visible in May, 1879, mine was the lowest; that it has proved to be accurate to a degree requiring for its explanation good fortune as well as good judgment; and that the attacks which, as I am informed, have been made upon my reputation, in connection with the recent history of the mine, have been wholly based upon ignorance or willful misrepresentation of what I really said concerning it. But I am quite willing to be judged by the report as it stands; and I shall make no further reference to this subject than is necessary to explain fully the present situation and the outlook for the future.

Nor do I feel called upon to criticise in this place the management of the company. It is easy enough now to see that the present embarrassment might have been avoided; that in the endeavor to maintain the regular payment of large dividends, the capacity of the mines has been overstrained, and the available ore-reserves have been gradually diminished, to the point of impending exhaustion, while the necessary work of exploration, and the opening of new ground in such a way as to permit regular mining, have been not only subordinated to the immediate needs of the company, but crippled and almost prevented by the precedence invariably given to the extraction and transportation of "pay-ore." On the other hand, it is not difficult, upon a study of the underground workings, in connection with the period of time at which each opening was made, to understand how easily and naturally the opinion could have been entertained, that a few days, or at most a few weeks, would restore to the mines far more valuable reserves than those which were being consumed. A series of brilliant but small *bonanzas*, encountered in the exploring drifts, kept alive this expectation, and no doubt justified, in the minds of those who directed the operations, the continued payment, from the proceeds of the known reserves, of dividends which evidently must come to an interruption, unless the new developments should be successfully completed in time to avert such a result. I do not say it was wise to run this risk. But I know that it is one which mining managers have often taken. If it results unfavorably, the consequence is always what it has been in this case. Of course, no such considerations can justify concealment or misrepresentation of facts, as between those who know and those who have a right to know them.

But there are a host of critics, competent and incompetent, busy in distributing just or unjust blame upon all parties connected with this matter; and I do not feel called upon to go into that branch of the subject at this time. I shall confine myself to the more immediate object of this report, which includes the past only as it bears upon the present and the future.

To explain more readily what I shall say, the accompanying map of the workings of the Little Pittsburg, Winnemuck, New Discovery, Little Chief, Carboniferous, Chrysolite, and Vulture mines is submitted. It represents these workings as they existed about March 22d, and is, I believe, the only map combining them all.

I now return to my report of 1879, as a convenient method of stating the additional facts which nearly a year's developments have brought to light.

As to the general nature of the formation, I find my conclusions confirmed, except that the silver-bearing vein is now shown still more clearly to be "in place," and that while it must be classed on the whole as a con-

tact-vein, it may locally run away from the contact into the porphyry altogether, or split, so as to contain "horses" of porphyry, or even (as may now be seen in several places) fragments and "horses" of limestone. It is also shown to have "waves" or changes of dip, varying from a nearly horizontal position to a dip of 45 degrees. These characteristics make it more difficult to follow the vein in exploration, and more easy to miss, by overrunning or underrunning, a part, or even the whole, of the valuable portion of it. There is no certainty, at any point, that the whole of the possibly ore-bearing ground has been explored, until the solid dolomite in place has been reached below. Thus, Mr. KEYES, in the Chrysolite ground (about F 27 of the map) has discovered a body of rich ore, 5 feet thick, running under the old stopes of his mine, and separated from them by a barren iron-stone, formerly supposed to be the final foot-wall of the ore. In the Vulture ground, three layers of ore may be seen, separated by barren porphyry "horses" about ten feet thick. There has been no exploration of any part of the old workings of the mines of your company (except the boring in shaft No. 1 of New Discovery) sufficient to demonstrate, beyond doubt, that these phenomena (both of which occur within 200 feet of the New Discovery line) may not exist in that ground also. At the same time, there are no independent indications that they do so exist.

In my former report, I took care to separate and classify the actual and probable resources of your property; and this classification it will be convenient now to follow, though not in the precise order in which it was then put.

1. *The Little Pittsburg and Winnemuck.*—Of the southern portion of these claims, I said in 1879: "The workings are irregular; and the best thing that can be done with them is to complete the process of 'robbing' which the former proprietors began, and abandon that part of the ground." I estimated that \$350,000 (less cost of extraction) could be got out of the Little Pittsburg in this way before abandonment, and \$50,000 out of the Winnemuck. These mines have since furnished about \$230,000; and as the ground referred to is neither exhausted nor abandoned, it is impossible to say whether the total yield will amount to \$400,000 or not. But it is necessary to remark that the process of "robbing" such ground is one which must be carried on with reference to other considerations than those of immediate profit. Not until the time of final abandonment can all the ore be safely removed. There is, for instance, in the Little Pittsburg mine, a block of rich ore (the best now visible in that mine) which can not properly be removed, because its removal would endanger the valuable and useful saw-mill and other surface works of the company.

2. *The Actual Reserves of May, 1879, in the New Discovery and the Dump.*—I am obliged to speak of these together, because their yield is not definitely separated in the accounts kept by the office at Leadville. The aggregate value placed upon them in my former report was \$1,600,000, in three items, of \$1,100,000, \$400,000, and \$100,000, respectively. The actual yield, to the end of this month, will have been, as nearly as I can now get at it, about \$1,400,000 received from the smelters. This close correspondence with the estimate has been brought about by a series of compensations. The estimated value of the ore per ton, iron-stone being sorted out, was 111 ounces silver and 22 per cent lead—that having been the average of several thousand tons already extracted from the drifts and levels in the same ground. And the price was taken at \$85 per ton for this grade of ore, "calculated from a comparison of present tariffs and bids for ore, and the improved price of silver, together with an allowance of \$5 per ton for the cheapening of freights as the railway approaches Leadville." Neither the grade of ore nor the rates paid by smelters have come up to these estimates. The approach of the railroad actually enhanced the freights on bullion; and as for the grade of the New Discovery ore, it was heavily depreciated by sending out of the mine and down to the smelters ore which would not pay expenses, and which should have been sorted out, if possible. Since there is an absolute smelters' charge of \$25 per ton for all ore reduced, it is evident that material yielding less than that amount actually subtracts from the net proceeds of the richer ore with which it has been allowed to remain. These two kinds of ore were distinguished in my former report, in which it was assumed that about 17,000 tons of first-class ore would be taken from the New Discovery reserves, the remainder going to the dumps, the possible ultimate value of which was distinctly declared to be included in the general estimate of \$1,900,000.

I am informed that it was found quite impracticable to sort the ore up to the grade previously maintained, and at the same time to keep up the large production required for the monthly dividends. There was, at the same time, a decided and unforeseen decline in the average value of the ore. All these causes operating together reduced the average receipts of the company to between \$50 and \$60 per ton on over 30,000 tons of ore. Subtracting about 5000 tons, the amount furnished by the Little Pittsburg and Winnemuck mines, there remain some 25,000 tons from the New Discovery and the old dump. How many tons were sent from the dump I could not ascertain in the time at my dis-

posal, no separate account of them having been kept. But it is evident that, on a rough estimate, some 6000 tons more than the original estimate of reserves were produced from the New Discovery ground; and this increased quantity has partly compensated for the falling off in price per ton realized. Speaking in general terms, the net result, so far, is within about \$200,000 of the estimate.

3. *The Unexplored Northwest Corner of the New Discovery.*—Of this ground the following language was used in my former report:

"Many indications go to show that this ground contains a large ore-body. The Chrysolite claim on the north, the Vulture on the west,* the ends of the New Discovery cross-cuts, all furnish evidence in favor of the view, suggested also by the surface topography, that there is here another sag or depression in the limestone foot-wall, causing a large accumulation of ore. The area of this body within the New Discovery lines is somewhat less, no doubt, than the full space above described. A roll in the limestone, separating the old ore-body from this second one, pinches the vein to 4 feet, which is the minimum, perhaps, in this mine. Judging from the exposures in the long cross-cut and in the Chrysolite claim, I think the area occupied by a pinched and comparatively poor vein may be one third of the 40,000 feet, perhaps more, but not more than one half. It is highly probable that the whole space will yield as much as \$1,000,000, or say 12,000 tons of ore equal to that of the present New Discovery workings, which contained 16,000 tons in a smaller area."

The incomplete exploration of this piece of ground, thus far performed, has resulted in severe disappointment. The long cross-cut ending in D 23 of the map† showed the "pinch" above mentioned to occupy half the space in that direction, while the rich ore found in D 22 and E 22, and in the Vulture and Chrysolite claims, came suddenly to an end just within the New Discovery line. Appearances in F 22, 23, and 24, indicate that there is a break or fault in the vein. Just beyond, in the Vulture, the ore is 20 feet thick, while within the New Discovery, after a brief period of delusive promise, this magnificent body has been lost entirely. An inspection of the map will show, however, that a large portion of the area under discussion has not been explored at all. Moreover, the explorations within it, as shown by the map, are proved by the latest developments in the Carboniferous, Chrysolite, and Vulture to be inadequate. It is now doubtful whether the true foot-wall limestone has been exposed anywhere in these workings; and it is certain that most of them are in porphyry and iron-stone only, and may therefore have overrun or underrun the ore. The roll or wave of limestone, observed and commented upon in my former report, may be, as was then supposed, an irregularity of the true foot-wall, or it may be a fragment or "horse," with an ore-bearing fissure below it. The discovery in the Chrysolite, already mentioned, of a lower member of the vein, underlying the old workings, goes to favor the latter hypothesis. But all that can positively be said at present is, that the value of this piece of ground has by no means been definitely ascertained, though the indications of value are certainly not as favorable as they were ten months ago, when thick bodies of rich ore surrounded this unknown ground on three sides, and promised to extend through it without irregularity or break, except the pinch in its eastern portion. I recommended to your superintendent to recommence driving west in E 23 (broken porphyry), and learned before leaving Leadville that the ground was improving in appearance (more iron coming in). But the thorough exploration of this ground can best be accomplished by means of drifts from the Chrysolite and Vulture, at lower levels than any now attained in the New Discovery.

This leads to the question, whether the ground marked on the map as worked out has really been completely exhausted. It has been asserted that bodies of ore remain in this ground, either designedly hidden, or so surrounded with caved ground and crushed timbers as to be practically inaccessible. With some difficulty, I penetrated this ground to A 24, in the northeast corner of the New Discovery. It is quite true that the original square-set timbers have been crushed to a considerable extent. Such timbering, in such ground, can not be expected to stand against the side-strains after all pillars of ore have been removed. It is necessary, in such circumstances, to catch and hold the ground with solid crib-work, forming, as it were, artificial pillars in sufficient number to replace the pillars removed. This has been done in the New Discovery ground, and, so far as I can see, it has been skillfully and thoroughly done. The ground has settled downward and sidewise a few inches, and now rests on the cribs. If these are sufficient in number and size, as they appear to be, no further movement may be apprehended. At the time of my examination, there were none of the sights or sounds from which the miner infers that ground is "working." Every thing was apparently quiet and secure; and the splintered, twisted, and crushed posts among which it was necessary to pass, presented some annoyance, but no danger. I do not hesitate to say, that any drift or level formerly open in the mine could be reopened if necessary, by blowing out the old timbers with gunpowder, and putting in new ones. This has been done in several instances, and without disturbing the roof, which was securely held by the cribs. Hence, it follows that if any valu-

* "South" in the report—an obvious clerical error.

† In photographing this map for immediate publication, it was unfortunately impossible to reproduce the cross-lines by which, for purposes of reference, it is divided into 50-foot squares. These lines are in red; and there was not even time to have them redrawn in black. The marginal letters and numbers refer to the spaces thus separated; and the reader will be able, with the aid of a straight-edge, or possibly by the eye alone, to identify, by means of these marginal marks, the localities referred to in the report.

able ore remains in or under the old workings, it is perfectly practicable, though it may not be at present cheap or convenient, to extract it.

It will be seen on the map that this area contains a few pillars, not extracted. They are marked "poor" in my private notes of 1879, and I have no reason to think now that they would pay for extraction. If there is valuable ore within the area referred to, I think it is under the old workings, which stopped on a floor of hard, lean iron-stone. Under such a floor, the lower layer of ore, already mentioned, was discovered in the Chrysolite; and moreover, many of the miners in the Carboniferous ground assert that along their line in A and B 24 they worked out their ore-body to a depth of 9 feet below the bottom of the New Discovery workings, and left this bench of ore entering the latter ground. They assert positively that it was never taken out on the New Discovery side. I saw this exposure of ore in 1879, and took account of it in my estimate. At my recent visit, though I penetrated to within a few feet of the spot, I could not obtain any ocular proof of the facts. But Mr. BEARCE, who had seen it with me on the former occasion, and who accompanied me on the latter, assured me that he had very thoroughly explored with pits that part of the ground, and that the supposed nine feet of ore passed into barren iron-stone and porphyry on the New Discovery ground. The later developments in the neighboring claims show that barren iron and porphyry are not conclusive evidence against the possible recurrence of ore. But the best course at present will be to await the progress of those developments, and, if they continue favorable, to underrun the whole north end of the New Discovery with levels from the adjoining mines. I am assured that arrangements for this purpose can be made, which will secure an exploration more rapid, cheap, and thorough than can be now effected in any other way.

It will be seen that none of the possible remaining resources of the ground already described in the New Discovery can be regarded as immediately available. Nor is this the region in which the immediate prosecution of energetic exploration is most advisable. I proceed to consider the present resources of the mines, and the prospects of discovering valuable ore-bodies in the large portion of the company's property yet undeveloped.

The present available resources of the mines consist in the proceeds of the gradual robbing of the old Little Pittsburg and Winnemuck ground, in the stoping of ore at several points along the southern and southwestern border of the old New Discovery workings, in the extraction of such ore as is encountered in advancing drifts, and in the sorting of such dumps on the surface as will repay that operation. The revenue from all these sources is variable, depending on the grade of ore produced day by day. The fact is, the duty and necessity of the moment is exploration and development in new ground, and it is of no special importance to the company whether a scattered kind of extraction on a small scale is or is not carried on, provided the main purpose is not interfered with. So long as these operations do not hinder that, they may go on—only they can be more profitably continued after working on a general and regular system shall have been resumed.

The undeveloped ground belonging to the company will be considered under three heads:

1. *The Union Claim.*—Of this claim, which is a recent purchase of the company, little or nothing, so far as I can ascertain, is known. The ore-body in the Joe Bates, at the south end of the Union, was mentioned in my former report as an encouraging indication for that part of Fryer Hill. But I am unable to learn that either the Joe Bates or any other mine in Stray Horse Gulch has yet developed a definite and certain value. The opinions of practical miners, experienced in that locality, appear to differ as to the probable discovery of paying deposits there. I believe the small amount of work done in that direction by the Little Pittsburg Company has proved nothing.

2. *The South End of the New Discovery.*—The foregoing remarks apply to this ground also, so far as its extreme southern portion is concerned. But with regard to the ground immediately south and southwest of the workings, extending in that direction from the New Discovery shaft (No. 1.), there is encouragement to hope for the discovery of a new ore-body. At the time of my examination, there was good ore in the face of the farthest working, and a small stope showed the edge of a possible ore-body, several feet in thickness. The ground was also favorable in appearance, presenting the signs (patches of iron, flint, and clay) which are found in this locality to accompany the neighborhood of ore. A rumor that a valuable ore-body had been discovered here having reached New York, and a telegram of inquiry from the office of the company having been received by Mr. BEARCE while I was present, I joined him in the telegraphic answer, which has been published, and which had the intention, and I believe the effect, of preventing premature conclusions on the subject. Even if there is a valuable ore-body in this part of the property, it can not be decisively exposed or explored in a day or a week. In addition to the favorable omens already mentioned, I should add that Mr. KEYES is preparing to explore the Vulture ground in the immediate neighborhood with vigor, and with confident expectations, based upon other indications in

the property of his company—among which I may mention the existence of rich ore in the "Vulture-Muldoon" shaft, a considerable distance farther southwest. Finally, if the indications I have mentioned are caused by an ore-body in this part of the New Discovery, there is ground enough in front of the present workings and within the lines of your company, to contain a large portion of such a body, though it should take a southwest course into the Vulture ground. The apparent break in the vein running from the northwest corner of the New Discovery along the west boundary of that claim and just within it, and manifesting itself in all the workings on that side by what the miners choose to call a "porphyry dike," cutting off the ore, seems, at the southwest corner of the workings, to be modified into a mere roll or wave. But, as I have already remarked, it is not perfectly certain that ore does not occur all along this porphyry, underneath it. A dike, in any strict sense, it certainly is not; and further exploration only can determine its exact relation to the ore.

3. *The Dives and the North End of the Little Pittsburg and Winnemuck.*—This is the ground which promises most for the future prosperity of the company. The vast body of rich ore which passes through the Chrysolite and Carboniferous claims, exhibiting in those mines, at many points, a thickness ranging from twenty to more than fifty feet, has been found also in the Little Chief, where it is now producing largely. Two parallel northward drifts will be observed on the map in the Little Chief workings. These both expose the ore-body in question. The eastern one was, at the time of my visit, about one hundred feet from the Dives line, and a winze near its extremity, not shown on the map, proved the ore-body to be pitching at an angle of nearly 45 degrees, and with the extraordinary thickness of over 70 feet (measured vertically), directly toward the Dives. It is safe to say that at the bottom of this winze, the distance from the ore-body to the Dives ground does not exceed seventy feet.

The surface of the hill being irregular, and the surveys of the different companies never having been referred to any common base of elevation, it is not possible to compare the relative levels with precision—a certain number of feet below the surface in one shaft not corresponding to the same number in another shaft. I estimate roughly, however, that the ore-body ought to cross the Dives line, on its present pitch, something less than 200 feet below the surface, and that if the Dives shaft should intersect it, it might be at that point, 400 feet below the surface. It is, however, more probable that the steep dip last observed in the Little Chief (much steeper than the same body exhibits at any other point) is a local wave, and that the body will resume the gentle average easterly dip of the vein. In that case, it might be intersected at much smaller depth.

There is no doubt, however, that neither Pittsburg No. VI. shaft nor the Dives shaft is deep enough to touch this body. Nor is either of them, according to present indications, exactly in the best place for the purpose. The former may be too far south and the latter too far north.

What is now being done is to run a drift from near the bottom of No. VI., and a diamond drill-hole vertically downward from the bottom of the Dives shaft. The drift begins 209 feet below the surface, leaving 21 feet of the shaft as a sump, and, after going north about 25 feet, turns to the northwest, heading for the Dives shaft. According to the latest developments in the Little Chief, this drift will not strike the ore-body unless it is turned to the west, and even then it may have to go nearly or quite to the Little Chief line, before striking the body. But it will afford an opportunity of piercing the body with horizontal or oblique diamond drill-holes.

The diamond drill in the Dives shaft had advanced, at the time of my visit, but slowly. For the past two weeks, it seems to have made good progress, and the present total depth of shaft and drill-hole is, according to the telegram of the 30th ultimo from Mr. BEARCE, 270 feet. I can not say that this use of the diamond drill recommends itself particularly in a case like the present. The broken nature of the ground renders progress variable and uncertain (tubing being sometimes required); cores can not be obtained (nothing but slime has come from the Dives bore-hole thus far); and above all, the small section covered by a bore-hole leaves much uncertainty, which shafts and drifts are required, after all, to dispel. There are several respects in which horizontal, or nearly horizontal, explorations with the drill are likely to be both easier and more satisfactory. As an auxiliary to exploring drifts, it may be useful; but it can not take their place in such formations as that of Fryer Hill. If, as I think experience has shown in this locality, not even a winze or level is sufficient to disprove the existence of a neighboring ore-body, how much less would the negative verdict of a two-inch hole be worth?

It must be confessed, however, that the *positive* evidence of a bore-hole, penetrating such a body as that which appears in the Little Chief, would be extremely welcome, and well worth having, if it did not require too much time and expense. For this reason, the diamond drill being already in place and at work, I advise that boring be continued to the depth of 400 feet, or until the drill enters the solid and unmistakable dolomite—provided that no special embarrassments and delays be encountered. In the latter case, I would not advise wasting much time in merely trying to drill, without achieving rapid progress. It would be better to sink the shaft at once. Meanwhile, Mr. KEYES's

"Daly" shaft, now rapidly going down, will throw additional light upon the form and position of the Little Chief ore-body.

There is, of course, here, as in all mining operations, the ever-present possibility of disappointment. But I think the facts I have stated warrant a strong expectation that the Little Chief body will be found to enter the Dives ground. If such should prove to be the case, there is, as an inspection of the map will show, a very large area belonging to your company, and entirely undeveloped, within which the body would have room to develop an immense quantity of ore.

I have omitted to discuss one point, which has arisen since my former examination, namely, the section exposed by the diamond drill-hole put down last year from the bottom of Shaft No. I., New Discovery. I have inspected the cores from this hole and the careful and accurate diagram of the section kept by Mr. RUDOLPH KECK, the company's assayer. While the results obtained in this section, the bottom of which, at 403 feet from the surface, is in quartzite, do not confirm at all the notion of a series of "contacts" or ore-bearing layers, which some have entertained, they have no decisive bearing on the views of a practical character stated in this report. At least, I have given them all the weight to which they are entitled in my judgment, and will forbear at present to discuss them in detail.

Yours respectfully,

R. W. RAYMOND.

NEW PUBLICATIONS.

SECOND GEOLOGICAL SURVEY OF PENNSYLVANIA. REPORT OF PROGRESS V. Part First, the Northern Townships of Butler County; Part Second, A Special Survey made in 1875 along the Beaver and Shenango Rivers in Beaver, Lawrence, and Mercer Counties. With 4 Maps, 1 Profile Section, and 154 Vertical Sections. By H. MARTYN CHANCE. Harrisburg, 1879. 8vo, 248 pp. Index.

Mr. CHANCE, both as the assistant of Mr. CARLL in the survey of 1876 in the Butler County oil region, and as an independent observer, detailed upon special missions in 1875 and 1878, performed a large amount of valuable topographical and stratigraphical work, the results of which are published in this volume. The second part covers ground which has been traversed by Mr. WHITE also; and in view of this circumstance, Prof. LESLEY remarks, "We have, therefore, two entirely independent and accordant investigations of all the Coal Measures lying beneath the Ferriferous Limestone along the State Line; and no one will be likely to dispute seriously hereafter this part of the geology of Pennsylvania." Mr. CHANCE, in his discussion of the western equivalents of the "bottom conglomerate" of the Anthracite coal measures, gives a good specimen of accurate observation and cautious conclusions. We can not do him justice by partial quotations; and, since this report is, on the whole, rather a contribution to the discussion of important problems than a full statement of their solution, we content ourselves with a passing recognition of its evident merit. For the residents of the regions described, it is, like the other local volumes of the Pennsylvania survey, a treasury of permanently valuable information, which can not fail to be useful, both in encouraging legitimate, and discouraging unwise, enterprise. To be protected against costly mistakes is as great a boon as to be guided to successful ventures. *

THE MASSACHUSETTS & NEW MEXICO MINING COMPANY.

The Plymouth Rock Mining Company to the ENGINEERING AND MINING JOURNAL:

You have seen fit to publish, lately, two articles, purporting to be communications received by you from correspondents, which are palpably malignant and grossly false.

The first of these appeared over the anonymous signature "X. L. P." The second appeared over the signature "J. D. Emersley."

The "Emersley" article purports to have been written at Dos Cabezas, Ariz., March 18th, and refers to what the writer pretends to have seen "when in Silver City, New Mexico, a week ago"—that is to say, March 6th. He states: "There is a Clayton air-compressor on the ground, with a diamond drill ready for work."

The diamond drill is not on the ground, nor is it ready for work. It had not arrived at Silver City March 30th, as we are advised by telegram of that date. It is on the way from Las Vegas to Silver City.

I mention this as showing conclusively that the writer of the "Emersley" article did not obtain his pretended information at the mines, as he falsely asserts.

Every other material statement, in both articles, vilifying the above companies, is equally false.

As to our mill and machinery, the working drawings of the mill were made by Messrs. Sturgis & Brigham, of Boston, architects of unquestioned ability, from plans furnished by Capt. John H. Carter, a thoroughly competent engineer and machinist of over twenty years' experience, and who has also had several years' experience in mills for reducing silver ore at Silver City, N. M., and elsewhere. The building was erected by Messrs. Black & Co., of Silver City. The head of this house is ex-mayor of Silver City.

The building is in every way satisfactory and well adapted to its purposes, and is well and substantially built from foundation to roof. All of our machinery is of the best quality and kind, and from our best manufacturers; a large part of it being furnished by Messrs. Morey & Sperry, of New York. Our crushers or pulverizers, which take the place of the ordinary stamp-mill, were purchased after careful and thorough examination had satisfied us that they would accomplish the work with greater dispatch and at less expense than is possible by the old process. They are working satisfactorily, as we are advised by dispatch dated March 27th.

We have no other machinery which is not well known to all intelligent miners and in general use by our best mining companies.

Regarding the character and value of the ore: Our Assayer is Mr. Samuel James, Jr.; and as to his ability and integrity, I give you the following:

"MASSACHUSETTS INSTITUTE OF TECHNOLOGY,
BOSTON, March 29, 1880.

"DEAR SIR: Mr. Samuel James, Jr., about whom you inquire, graduated with honor at this institution, having been a member of the class of 1876. After graduation, he was employed as assistant in my department to our entire satisfaction.

"Since resigning his position here, he has had practical experience in the mines of Colorado and North Carolina.

"His ability as an assayer is of so high a character, and his integrity as a man so unquestionable, that any testimony he may give, respecting the ores of New Mexico, we should rely upon most unhesitatingly.

"(Signed)

ROBERT H. RICHARDS,

"Professor of Mining, Mass. Inst. of Technology."

Mr. James is at the mines, and, writing from there under date of February 8th (before our laboratory was completed), he reports, as the result of a careful examination and estimate of the ore then out, that the amount of ore—"not overestimated"—was 1410 tons, and its value \$77,260, besides 212 tons, which will assay \$17,275.

His report, dated February 14th, of assay of five samples of ore from shaft 9, "below an average of the ore taken out during the week, amounting to some ten tons," shows the following results:

Assay No. 1, 90 ounces (in duplicate).

Assay No. 2, 95 ounces (in duplicate).

Assay No. 3, 131 ounces (in duplicate).

Assay No. 4, 150 ounces (in duplicate).

Assay No. 5, 165 ounces (in duplicate).

Our certificates of analysis by S. P. Sharples, Esq., State Assayer of Massachusetts, shows that our selected ore contains 1664 ounces to the ton, of the value of \$1913.60, while samples of ordinary grade contain 100 ounces, or \$115 per ton.

A stockholder in the two companies, who is not otherwise interested in them, visited New Mexico before investing, and made thorough inquiry and investigation, selected samples of ores himself, had them assayed in his presence by an assayer of his own choice, and with the following results:

Assay No. 1, 336 ounces per ton.

Assay No. 2, 594 ounces per ton.

Assay No. 3, 275 ounces per ton.

Assay No. 4, 130 ounces per ton.

Assay No. 5, 202 ounces per ton.

His investment in the companies was made entirely upon the result of his inquiry.

At the mines, our reports show that every thing is proceeding with activity and success. Under date of March 22d, we are advised that the output for the week ending March 20th was thirty tons from the Mass. & New Mexico mine, and thirty tons from the Plymouth Rock, and that the machinery was running, for the first time, March 22d, and with entire satisfaction.

Under date of March 27th, we are advised that the output for the week then ended was, from the Mass. & New Mexico, 35 tons; Plymouth Rock, 20 tons; also that the crushers were working satisfactorily, and that rich ore had been struck in tunnel, averaging \$2500 per ton.

Under date of March 29th, we are advised that the mill commenced amalgamating that day, and that the result of first week's run would be given to us Saturday, and that every thing was going on well.

Under date of 31st inst., our dispatches from the mines show that all of the machinery (with the exception of the diamond drill, not arrived) has been thoroughly tested, and works satisfactorily; that the aggregate depth of shafts sunk is about 375 feet; length of tunnel driven, 250 feet; aggregate length of drifts, 425 feet; that no difficulty is experienced in milling the ore; that it contains some galena, but not enough to hurt amalgamation.

In conclusion, I have made this statement solely for the benefit of any persons interested, who may have given credence to the false articles referred to.

GEORGE B. HASKELL,

Sec. of the Plymouth Rock and the Mass. & New Mexico Mining Cos.
No. 7 EXCHANGE PLACE, BOSTON, March 31.

P. S.—Since the above was written, the following dispatch has been received from Messrs. Black & Co., of Silver City, who are financially responsible:

"The mill buildings of the Massachusetts & New Mexico Mining Co. are all constructed in the most thorough manner. The foundations of the same are also of the best materials, and recently constructed.

"BLACK & Co."

COAL NOTES.

The first successful use of anthracite coal for smelting iron was in 1839, at the Pioneer furnace at Pottsville, Pa.

During the third week in February, 5,000,000 bushels of coal were brought from Pittsburg down the Ohio River.

The coal mines in the vicinity of Moberly, Mo., are now yielding about forty cars per day. The vein is of a uniform thickness of four feet.

The coal mines at Ranick, Mo., yield fifteen car-loads per day.

The first coal-fields worked in America were the bituminous fields of Richmond, Va., discovered in 1750.

The Cambria Iron Company will shortly employ 1300 men to mine its coal-fields near Connellsville, Pa.

It is said that the vein of bituminous coal in the Lincoln coal-fields, Missouri, is 26 feet and of a uniform thickness for miles.

The Hood coal mine, near Liberty, Mahoning County, O., has been abandoned. Coal all worked out.

Coke-making is to be one of the most important industries along the line of the Chesapeake & Ohio Railroad. Already there are four or five

establishments in the New River District, each receiving orders beyond its capacity to supply. Fire Creek is running about 60 ovens, Quinimont about 80, and Sewell about 50, which is exclusively appropriated to the use of the furnaces of the company at Longdale. Nuttalsburg is running about 60 ovens. Two others are in process of construction, one at Lowmoor, of about 40 ovens, for the use of the furnace at that place, now rapidly approaching completion, and another in the New River section, of about 200 ovens. This last will make coke for shipment.

There is said to be more anthracite coal in China than in the United States.

There is a grand total of about 6000 coke-ovens in the United States.

The latest information from the Souris coal-fields is, that miners have struck, at a depth of sixty feet, a vein of coal seven feet thick, which is the same thickness as that of Baby Mine, forty miles west of Bismarck, Dak., and 150 miles south of the Sauris discovery.

The Grand Tower Coal Company, of Illinois, is about to erect 80 coke-ovens in Davis County, that State.

The coke business is getting quite a foot-hold in the south and west. On the Big Muddy River, 216 ovens will be ready to light up in April or May.

IRON NOTES.

The Belleville *Intelligencer*, of Canada, says:

"Large orders for car-wheels from the United States have been received and are now in course of execution at the McDougall Iron Foundry, Three Rivers. Some 300 platform cars on the Grand Trunk Railway are engaged to transport the wheels when finished. The output of the works is stated at 20 to 27 car-wheels a day, the number of hands employed ranging from 150 to 200."

The fifteen car manufacturing establishments of the United States turned out last year 37,350 pieces of rolling stock.

In a day of ten hours 100,000 needles are stamped and bored by a new machine just perfected in Westphalia, Conn.

The second highest bridge in the country is about building across the Mississippi at Minneapolis, Minn. It will be 1150 feet long, with two spans of 325 feet each, the whole to cost \$300,000.

Seven machines in Pittsburg produced last year 1,063,345 kegs of nails.

PITTSBURG, March 18.—A very interesting meeting of the Western Iron Association was held to-day, every mill west of the Alleghanies being represented. The object was to consider the question, Shall the present card rate of four cents be affirmed or lowered? The Western iron-masters insisted on a reduction to three and a half cents, while Pittsburg fought for the maintenance of the card. The meeting was full of excitement. The Pittsburg men claimed that the West induced the Association to raise the card to four cents, and are the first to ask that it be lowered. The position of Pittsburg is the legacy of high wages which the increase in the card brought on. The merchants argue that there is no reason for the reduction. It was finally decided to retain the four-cent card.

The Telegraph Supply Company, of Cleveland, is now running night and day, with a hundred men, exclusively on the Brush electric light apparatus, of which they are the sole manufacturers. It is said that they have orders on hand for months ahead, and up to this date sold over 15,000 lights.

The Springfield Iron Company, of Springfield, Ill., has just started one 15-ton Pernot furnace for the manufacture of steel, the first heat having been made on February 9th. The company has also building another such furnace, with cupolas for premelting the pig-iron metal, and a furnace for dephosphorizing by the Krupp method. A new blooming mill, with improved hydraulic tables and Siemens heating furnaces, is completed, and has already been worked enough to test it. The product of the furnaces will be for the most part worked into rails for the present. The whole of the improvements have been made from designs by Alexander L. Holley, who estimates the output, when every thing is in good working order, at 40,000 tons of ingots per year.

The sheet-iron manufacturers East have entered heavy orders for forward delivery. They are, on an average, probably full up to July, with enough business offered to carry them to October.

The Pittsburg Locomotive Works have under way a contract for five immense engines, the weight of each of which will be fifty tons. They are for use on the George's Creek & Cumberland Coal Railroad, the grade of which is 180 feet to the mile. The service they are expected to perform on the steep grade on George's Creek requires that they be very heavy, and in this, as in all other respects, they will be model machines. The capacity of the works is two finished locomotives per week, and the company has all the orders it can fill at present.

The Scottdale rolling-mill is running triple turn. Eight new boiling furnaces are erecting by the company, and the capacity of its foundry is increasing. Another mill will probably be started next summer.

There are 46 rolling-mills in Ohio, 32 of which are in operation.

In the South, there are 144 blast-furnaces, 39 rolling-mills and steel works, and 48 forges and bloomeries.

Rapid progress is making in rebuilding the Omaha Iron-Works, and they are expected to be in running order by April 15th.

The National Tube-Works, at McKeesport, Pa., are rolling, on a Lauth universal mill, plates 42 inches wide by 60 feet long, without shearing.

The Pennsylvania Steel Company has loaded the Belle of Bath with steel rails and two locomotives, for the Northern Pacific Railroad, to be delivered at Portland, Oregon.

The Pittsburg Locomotive Works are making six steel boilers for the Edgar Thomson Steel Company's new blast-furnaces. Each boiler is 65 feet long, the heaters being 45 feet.

There are fifty-one furnaces in blast in the Lehigh Valley, with an annual capacity of over 600,000 tons of pig-iron. The valley is perhaps making more pig-iron than ever before.

Northern rolling-mills are receiving orders for rails from all parts of

the South. Last week, the Indianapolis rolling-mill company was asked to furnish 1200 tons for one and 3500 for another road, both in Arkansas.

The Detroit Bridge and Iron Works are now building for the Illinois Central Railroad Company a draw span 206 feet long for Chicago, two deck spans, each 141 feet long, two 160 feet long, and four 65 feet long; for the Michigan Central Railroad, two through spans, each 165 feet long, one 100 feet long, and also a bridge at Niles, of five deck spans, aggregating 570 feet in length; for the Wabash, St. Louis & Pacific Railway, a draw span 300 feet long, and two spans each 145 feet long; for the Detroit & Bay City, one span 150 feet long, and one 120 feet long; for the Chicago & Alton and Grand Rapids & Indiana, each one span; also four girders for the Lake Shore and Michigan Southern Railroad, and one for an approach to the Plattsmouth bridge over the Missouri for the Chicago, Burlington & Quincy Railroad.

Nearly all the iron-works about Danville, Pa., are in operation, and the remainder are getting ready.

The Johnstown (Pa.) *Tribune* says that orders have been received at the railroad machine shops in Altoona for the building of eighty-nine locomotives. Of these eleven are of class B; two of class C, passenger locomotives, anthracite coal-burners; six of class E, for the Richmond & Danville road; sixty class I, Modocs, and ten class K, passenger. Taken in connection with the repairs to locomotives, and the filling of the new orders, the machinists and other mechanics and laborers will be kept fully employed the whole year.

The keg factory in connection with the rolling-mill at Centralia, Ill., is 50x152, and has a capacity of 2000 kegs per week.

Two of the furnaces in course of erection at the Benwood (West Va.) mill are about completed.

The Union Pacific RR. is now receiving steel rails from three rolling-mills, which are kept at work all the time to supply the company. These steel rails are used on the main line as fast as they are received, and the iron rails are taken up and laid down on the branches. The iron rails that are in bad condition are sent to the Laramie rolling-mills to be re-rolled.

The second attempt in the United States to roll imported steel has just succeeded in Vermont. From imported English blooms, the St. Albans iron and steel works are rolling steel rails without a blemish.

Extensive car-works are to be established in Marshall, Texas, shortly, backed by \$1,000,000 of capital, under the title of Marshall Car and Foundry Company.

An English exchange states that a Vienna firm has sold 20,000 tons of pig-iron at good prices, on American account, for shipment via Trieste.

The Indianapolis Rolling-Mill Company, we understand, intend erecting a steel rolling-mill in that city, to be double the capacity of the iron rail-mill, and to give employment to 400 men.

We learn that the Joliet Iron and Steel Company's works turned out more Bessemer steel ingots during the month of January last than any other mill in the country.

The Riverside Mill, at Wheeling, in the last two weeks' work, turned out nearly 15,000 kegs of nails.

Every mill in Pittsburg is now in operation in some one or other of its departments, the old Woods mill being the last to start. This mill has been idle for some time, but started up its sheet department a few days ago.

The Katahdin (Me.) Iron Works have never been so busy as now. A new deposit of great richness has recently been found. Twelve tons of pig-iron are hauled from the works every day. The iron is selling rapidly in the market, leading all other iron in the manufacture of car-wheels, for which it is especially fitted. Three years ago, this iron sold slowly at \$25 per ton; while now it is selling quickly at \$50 per ton.

The Camden (N. J.) tool works have resumed work, after an idleness of twelve years.

A correspondent writing to the *American Manufacturer* from Wolverhampton, England, says: "Your purchases of scrap are clearing away all accumulations than can be anywhere collected. This week, a consignment of 250 tons is going from one works in Central England. It is largely nut and bolt scrap, much of it from Welsh iron."

LABOR NOTES.

The employes at the iron works of E. & J. Brooke, at Reading, have received an advance of 10 per cent in their wages.

The puddlers connected with the Franconia Iron and Steel Works, Wareham, Mass., have struck for higher wages. They demand \$3.25 per ton.

The striking puddlers at Palo Alto Mills, Pottsville, Pa., have resumed work on the basis of regulating wages in accordance with the price of rails.

The Port Carbon (Pa.) rolling-mill can only be worked in day-time, there being so great a scarcity of men that it can not be operated at night.

The wages of the employes of the Pennsylvania Railroad, and of all the roads under its control, were increased 10 per cent on the 1st of April. This advance restores wages to the figures prevailing before the riots of 1877.

On the Ohio & Mississippi Railroad, the wages of all employes were restored on April 1st to what they were before the reduction in 1877.

The difficulty between the puddlers and helpers at the Jefferson rolling-mill, at Steubenville, Ohio, has been adjusted, and the mill is on again to its full capacity.

The wages of the employes of the Baltimore & Ohio Railroad were advanced April 1st to the rates paid in 1877.

The wages of the employes of the New York & Long Branch Railroad and the New Jersey Southern Railroad, both operated by the Central Railroad of New Jersey, were increased on April 1st. The men receiving \$50 or less a month will obtain an advance of 20 per cent, and those receiving over that amount 10 per cent.

The miners in all the coal mines at Fairmont, West Va., are on a strike. At the West Fairmont and O'Donnell mines, they receive 30 cents per car; at the Gaston, 38; and at the Central, 28. The demand at the West Fairmont, O'Donnell, and Central is 50 cents per car, and at the Gaston, 60.

The coal-miners at Leetonia, O., have been advanced to \$1.07 per ton. The vein now worked is 24 inches thick.

Some days ago, the puddlers at the Roane Iron Works, Chattanooga, struck for higher wages. Their pay was \$5.50 per ton, and they demanded \$6.50, which was not granted.

The laborers in the Page Rolling-Mill, of Cohoes, N. Y., are on a strike for 25 cents per day advance. They now get \$1. The firm offered 12½ advance now and 12½ in May, but it was declined.

The Vulcan Steel Works, at St. Louis, have resumed operations, with a force of between eight hundred and one thousand men. The recent trouble with some of their workmen was satisfactorily adjusted by the company withdrawing the contract they wished the men to sign, and the Joliet, Ill., schedule prices have been established.

Work in the rail-mill of the Allentown, Pa., rolling-mill company, was shut down March 2d, on account of a demand by the employés for an increase of 10 per cent. Two hundred men are thrown out of employment.

The law passed by the Indiann Legislature forbidding the garnisheeing of a man's wages, unless there are two months' pay due him, has had an effect gratifying both to the employés and to their officials, who were too often annoyed by these processes.

About 75 of the soft-iron molders at the Michigan Car-Works, Detroit, struck a few days ago for an advance of 20 per cent in their wages. The company offered 10 per cent in addition to 10 per cent added in November last, but refused to accede to the further demand.

The workmen in the sheet mill of Hussey, Howe & Co., Pittsburg, Pa., recently combined for an advance of twenty per cent. The demand was granted, and will go into effect in a few days.

In the car-shops in Philadelphia, Wilmington, Harrisburg, and vicinity, there are at present upward of 5000 men at work, receiving an average advance in wages of about 20 per cent as compared with 1878.

The puddlers of the Penn rolling-mill, at Lancaster, Pa., have received an increase of 50 cents a ton for puddling.

About 200 hands, the employés of the zinc-works at Bayonne, N. J., struck recently for higher wages, demanding 10 per cent advance over their former wages. The company made the concession, and the men returned to their work.

The slackness of work in Europe and its abundance in America has induced the Weavers' Trades-Union of England to set apart in their trade societies a certain part of their funds to assist those who desire to emigrate to America. Among the Macclesfield weavers, this amounts to six cents a week, and these are balloted for. An item in the *Macclesfield Journal* explains how many seek this privilege of refuge and work in America. It says: "On Tuesday night, another ballot took place at the rooms of the Weavers' Trades-Union, Pickford street, for six assisted passages to Paterson, offered by the Union. There were 84 applicants. The six who were successful will sail next week along with the six balloted for last week."

The Cincinnati *Inquirer* says: "The iron interest in this city and vicinity is a prominent one, and embraces as the leading manufacturers in the line of rolling-mills, Swift's Iron and Steel Works, Globe Rolling-Mill Company, Licking Rolling-Mill Company, and Mitchell, Tranter & Co. These four firms alone represent a capital of \$2,000,000. About the middle of last month, the skilled iron-workers in this vicinity demanded higher wages. It was decided that the matter should be submitted to the representatives of the mills and the iron-workers by arbitration, and after two days' deliberation a satisfactory conclusion was reached as to the adoption of a sliding scale of prices, governed by the advance and decline of the card price of bar-iron for muck, bar, guide, and ten-inch trains, heating-blooms, sheet, bar, slabs, and scrap, and of hammering. It was also decided that this scale should remain in force until June, 1881; and since there was a sliding scale for puddling and also a scale for plate and sheet mills, adopted last month, to continue one year, about all the skilled-labor prices of rolling-mill men are provided."

This agreement provides that parties on both sides shall submit to the figures, whether iron goes up to six cents or down to two cents.

It is decidedly the proper method to establish such relations between the workmen and the employer. It is more profitable than strikes, and engenders no bitter feelings. The good effects of this action will be better understood when we state that the iron-workers of Portsmouth, Ohio, Aurora, New Albany, Terre Haute, Evansville, and Greencastle, Ind., Louisville, Ky., Centralia, East St. Louis, Belleville, and Springfield, Ill., St. Louis and Kansas City, Mo., will be governed by the rules adopted; thus increasing the spirit of forbearance on both sides, and in reality adjusting the differences and soothing the feelings of at least ten thousand workmen.

ENGLISH INDUSTRIAL LABORERS.—The iron-workers of England include 140,000 laborers in furnaces and forges, 169,000 in the manufacture of machinery, 5500 in steel works, 48,000 in ship-building, and about 200,000 in various branches of iron and steel manufacture, making about 570,000 in all. The mining population is about 530,000, and the laborers in cotton mills about 600,000.—*Chron. Industry.*

ENGLISH STRIKES.—*Fraser's Magazine* says: "The engineers' strike, which began in February, 1879, and continued about 33 weeks, caused the strikers a net loss of \$70,000, besides drawing about \$74,000 from the society funds—which is equivalent to an actual loss of \$144,000. The strike of the London masons, which lasted 33 weeks, and threw 1700 men out of employment, cost the strikers about \$130,000, and the carpenters' strike at Manchester cost about the same. The estimated losses by the strike and lock-out of the boiler-makers and iron ship-builders on the Clyde were \$1,500,000, and the losses of the miners in the Durham collieries were \$1,200,000. In all these strikes, excepting that of the engineers, the strikers suffered disastrous defeats."

The Cumberland (Md.) *News* of March 29th says: "It is said that, at the

conference of coal-operators in Baltimore Saturday, it was decided to stand by the Cumberland & Pennsylvania Railroad Company, and resist the demands of the strikers, the latest demand seeming to require that a 'halt' should be called in the advance of wages, and this was regarded as the time to make the issue. This makes the situation gloomy, but it would be hard to show that the companies could do otherwise. The companies are not met by one class of strikers; there is a general movement along the whole line. The boatmen ask for an increase of 55 cents a ton over last year; the canal company wants 15 cents more a ton for transportation; the Baltimore & Ohio Railroad Company has increased its freight rate on coal 50 cents; the train-men on the Cumberland & Pennsylvania railroad have struck for an advance of about 20 per cent or more, and the miners have been given 65 cents. It is impossible for the companies to meet all these appeals and satisfy every body, and employes should be content with reasonable concessions."

The Cumberland *Times* of March 30th says: "The strike of the railroad employés still continues sufficiently strong to prevent the running of freight trains. The effects of the strike have an influence beyond this immediate locality. The Abbotts Iron Works, of Baltimore, have ceased operations temporarily, until they can secure coal suitable for their furnaces. The steam tug-boats that run the harbor of Baltimore are all placed upon half-allowance, consequently doing but half the work required of them.

"While the strike lasts, it costs the county over \$10,000 per day, and drives the customers of Cumberland coal to other regions for coal that, though it be inferior in quality, is preferable to Cumberland coal at the increased prices that would be asked were the demands of the railroad men and miners acceded to."

MINING LEGISLATION IN CONGRESS.—Mr. Scales, of North Carolina, has introduced a bill in the House of Representatives providing that the mineral lands of the government, and all such lands hereafter acquired, shall be surveyed, and sold by the government at their true value, and that the proceeds, after the payment of the necessary expenses of surveys, shall be applied toward the payment of the public debt.

MAINE MINERS STRIKING.—BOSTON, MASS., March 31.—The Blue Hill (Maine) miners are expected to strike to-morrow. The superintendent of the mines of that district has intimated to the men that he will not again employ any man who strikes.

DEMANDING AN ADVANCE IN WAGES.—Six hundred men employed on the Lehigh & Wilkes-Barre and Cross Creek Coal Dock, at Port Johnson, N. J., demanded an increase of wages on Tuesday to 20 cents an hour. They are now receiving 15 cents an hour. The demand was refused by the companies, but yesterday morning they agreed to give the men 18 cents an hour. Most of the men accepted this arrangement, and went to work, but it is said the ringleaders in the contemplated strike will urge the others to still demand 20 cents an hour, and a strike may still occur.

PROGRESS IN SCIENCE AND THE ARTS.

American Products Abroad.—Our consul at Geneva reports large importations of American anthracite into Switzerland, where it finds a ready sale at present low prices, though he considers it doubtful whether it can permanently compete with French coal and coke. He states that American stoves, which have followed in the wake of our coal, are very popular there, and holds out the prospect to our manufacturers of a large and profitable trade in these goods, if they are made to conform to Swiss ideas of taste. London *Truth* makes the following very gratifying statements respecting another successful American industry, to wit: "American clocks and watches are sold for less than those of English and Swiss make in England and in Switzerland. And yet the skilled labor in this business is not cheaper than with us. Therefore, by sheer superiority of intelligence, and by the perfection of machinery, we have been cut out, by the Americans, of a trade in which we formerly held our own." * * *

Another London journal, referring to American cotton goods, says: "Much surprise has been lately expressed at the continually increasing exports of cotton goods from New York to this country. * * * It has been entirely the fault of our manufacturers that the import of American calicoes has been so large and that it has continued so long. The one feature which commended them to the British public was their purity."

Technical Brevities.—London *Nature* is authority for the statement that Dr. Sidney Marsden, another experimenter in the field of *crystallizing carbon*, has discovered a menstruum in which carbon is soluble, and from which it crystallizes partly as graphite and partly as diamond. The crystals of the latter are octohedral in form, and readily scratch sapphire. —The old problem, that "one swallow doesn't make a summer," will apply to the sanguine expectation of the *Chronique Industrielle*, that the industrial utilization of an apparently inexhaustible *gas-well* at Saint Barthélemy may "convert the province of Dauphiné into a French Pennsylvania."—Mr. John F. Kerr lately gave an account before one of the English engineering societies of the recent discovery in Chili of immense deposits of sulphate of soda, borate of lime, and nitrate of soda.—The *Maine Beet-Sugar Company* last year worked up 9000 tons of beets, and produced 900 tons of sugar and molasses. The total outlay reached \$107,000, and the receipts (not including State bounty) were \$110,000.—At the last meeting of the Engineers' Club of Philadelphia, Mr. Percival Roberts exhibited a section of a partly punched cold-punched nut etched by acid to show the *solid metallic flow*. The section demonstrated that only 40 per cent of the volume of iron leaves the hole, thus proving that a cold-punched nut must be stronger than one that is hot-pressed.—It is reported that, in view of much unfavorable criticism, Mr. Edison decided, some time ago, to submit his whole plan for *electric lighting* to the critical examination of experts. It is intimated that Profs. Barker and Rowland have been at work upon a report of this kind, which will shortly be made public. As Prof. Barker is known to be one of Mr. Edison's staunchest supporters, the tenor of this report will not be difficult to predict.—It is noted, in the *Massachusetts Bureau of Labor Statistics*, that out of 158 strikes occurring in that State, only 18 were completely successful; 16 were compromised; 6 were partly successful; and 109 wholly failed.—Mr. Swank, in the *Bulletin of the American Iron and Steel Association*, advises our iron manufacturers that the course of wis-

dom for them will be to recognize the fact that the iron famine which existed in this country during the closing months of 1879 does not exist now, and that an attempt to create another "boom" would most certainly stimulate further extraordinary importations, with the effect of a glutted market in midsummer, when most likely the bottom would fall out of every thing. — The "Gold Medal for Industrial Merit" has been awarded to Mr. William Bruckner, a well-known inventor of metallurgical machinery, for his exhibit at the permanent exhibition of an Italian Society for the Promotion of Mechanical Industries, held at Naples. — There are in the United States and Europe more than 150 manufactories of *India-rubber goods*. These employ from 10,000 to 15,000 operatives, and consume annually about 40,000,000 pounds of raw material. The bulk of the crude rubber, and the best quality, is brought from Brazil, though considerable quantities are obtained from Central America, Africa (especially Madagascar), India, and the islands of Borneo and Sumatra. — *Toughened glass* has been found by M. Ducretet to oppose a much greater resistance to the passage of electricity than common glass, and he has employed it in constructing Leyden jars which are capable of receiving a much heavier charge than those of ordinary glass. Becquerel has suggested that this product may probably be used in the construction of extremely thin condensers capable of giving great effects.

State of the Iron Trade.—Mr. Swank does not like the look of things. The advice which he gives to our manufacturers is based upon the statistics of our imports of iron and steel during the first two months of this year, which he pronounces to indicate a most unhealthy condition of trade, and one which, if continued until midsummer, will work incalculable mischief.

That Mr. Swank's fears are well founded will appear from an inspection of the following table of British exports of iron and steel products to the United States during the two months in question :

ARTICLES.	JANUARY AND FEBRUARY.		
	1878—Tons.	1879—Tons.	1880—Tons.
Pig-iron.....	3,580	6,363	126,221
Old iron.....	220	567	54,501
Steel, unwrought.....	798	775	5,550
Tin plates.....	15,722	18,132	27,270
Hoops and sheets.....	89	89	9,942
Bar, angle, bolt, and rod.....	1,122	191	13,345
Iron and steel rails.....	3	812	28,169
Total.....	21,534	26,929	264,948

A "Hydrostatic" Joint for Gas and Water Mains.—Mr. William Painter, of Baltimore, has devised a new method of forming a permanently tight lead joint, which, in addition to being ingenious in its way, is claimed to have the advantages of requiring considerably less material and labor. The joint is essentially a lead joint called by hydrostatic pressure. The method is as follows: In the interior of the bell, a groove is cast about $\frac{1}{2}$ inch square in cross-section with rounded corners, and within it is cast a lead ring or pocket, flush with the interior surface of the bell. A clearance of say $\frac{1}{8}$ inch all around is allowed between the spigot and the bell, for easy entrance. The spigot is devoid of the usual bead, but is increased in thickness and strength at the end. In entering, it is guided into concentric position by the tapering form of the interior of the bell.

When the sections are entered, a forcing-jack is screwed into a threaded opening in the bell, and some thick semi-fluid material, suitable for the purpose, is forcibly injected into the opening, which finds its way between the lead gasket and the bottom of the groove, and, by partially displacing the gasket therefrom, forces it inwardly into tight contact with the spigot at all points of its circumference, thereby forming a tight joint. The operation is completed by removing the jack and inserting a screw plug into the threaded opening in the bell. This whole operation, for, say, a 12-inch main, is said to require about five minutes.

Respecting the effectiveness of this joint, it is claimed that the enormous pressure exerted on the lead gasket thoroughly impacts the metal into every irregularity of the iron surfaces. All the lead is utilized in forming the joint, and there is none wasted as in the common method. The new method is claimed to save considerably in material (lead), and in labor, to dispense with hemp or other packing and with the necessity for enlarging the trenches at the joints required, and to be very permanent in service. It is affirmed that the "hydrostatic" joint has withstood, without leaking, a water pressure of 1000 lbs. per inch, and a deflection of 9 inches in 12 feet, without having its integrity impaired.

GENERAL MINING NEWS.

ARIZONA.

CENTRAL ARIZONA.—The *Alta* says: "Contracts were signed on March 20th for building an 80-stamp mill for the Central Arizona Mining Company, of New York, to be put up at the Vulture mine, near Wickenburg, Ariz. Iron for 14 $\frac{1}{2}$ miles of pipe, to carry water to the mill, has been purchased in Pittsburg."

GLOBE DISTRICT.

We obtain the following items from the *Silver Belt* of the 20th ult.:
"The San Carlos Mill and Mining Company has let a contract to sink its working shaft 100 feet deeper.

"In the Silver Reef, two shafts have been sunk to the depth of 25 feet each, and cross-cuts have exposed the vein the entire length of the location.

"The Golden Eagle has now on its dumps 400 tons of gold ore, assaying \$190 per ton, the result of five weeks' work."

TOMBSTONE DISTRICT.

A correspondent of the *Sentinel*, writing from Tombstone, under date of March 10th, says:

CONTENTION.—"The Contention mine has commenced shipping ore to its new 20-stamp mill on the San Pedro, a distance of 10 miles. The mill commenced crushing last Monday, and is pounding away on ore that will yield from two to three hundred dollars per ton."

GRAND CENTRAL.—"The Grand Central, on the south, and adjoining the Contention, is pushing its works with energy, having sunk its shaft to a depth of 140 feet, and taking out a large quantity of good ore."

The following is condensed from the *Tombstone Nugget* of the 18th ult.:

"The southeast shaft of the Prompter is now down 50 feet, and is opened on a ledge which traces through the cross-cut of 26 feet. The True Blue shaft is sunk sufficiently far for drifting to be commenced. The west drift is in eight feet, with magnificent ore in face of drift and bottom of shaft. A working shaft is to be sunk from the top of the Dell Hill to connect with the west drift. The Vizina mine has been bonded for thirty days for \$35,000, and ten per cent of the money down."

The first installment of 15,000 on the sale of the Black Warrior mine, Peck District, has been paid. The balance, \$42,000, is to be paid June 1st. The New York syndicate, who purchased the property, will begin operations at once.

CALIFORNIA.

THE BODIE DISTRICT.

The *Free Press* of March 23d says:

ADDENDA.—"Shaft down 300 feet. The formation is iron-stained porphyry, carrying stringers of quartz."

BODIE TUNNEL.—"The contract for the last 100 feet has been finished, and hereafter the work will be done by the company. During the past week, a ledge of good milling-ore has been cut 4 feet wide. The winze at the 1000-foot station is down 18 feet, showing a strong, well-defined ledge, assays averaging \$80 in gold."

BOSTON CONSOLIDATED.—"The main incline shaft has reached a depth of 64 feet below the 200-foot level station. This incline is in favorable-looking porphyry, having changed almost entirely in appearance since passing the station at the 200-foot level, and similar in character to the birdseye porphyry of the Comstock lode. Progress during the week, 15 feet. The north drift, 200 level, is now in a large vein, mostly quartz."

BULWER CONSOLIDATED.—"The north drift on the Ralston vein is in 125 feet. The ledge in the face of this drift is 3 feet wide. The south drift has been advanced during the week 17 feet, making a total distance from the tunnel of 119 feet. The ledge here is 2 feet wide, and is looking well. The Stonewall ledge is 2 feet wide, of rich ore, and in the stopes on the Ralston vein the ledge is 4 feet wide, of good milling ore."

DOUBLE STANDARD.—"The ledge in the face of the north drift is three and one half feet wide, of good ore. The winze has reached a depth of 13 feet. The vein in the bottom is three feet wide, and looks well."

GOODSHAW.—"The station at the 600-foot level is now completed, and cross-cutting for the veins cut on the 450-foot level begun."

JUPITER.—"On the 500-foot level, west cross-cut from the main north drift is in 173 feet; progress during the week, 36 feet."

NORTH BULWER.—The *Standard* of March 20th says: "A blind ledge seven feet wide has been struck in the North Bulwer shaft, 70 feet from the surface, which has been recorded as Lode No. 2. In this ledge is a vein of pure ore, totally devoid of waste, two feet in width, and assaying well."

STANDARD CONSOLIDATED.—"Since last report, the work of running the east cross-cut, 500-foot level, has been resumed. This cross-cut is in from the shaft 200 feet, in a very favorable formation. Upraise No. 2 from the south drift has reached a height of 92 feet, showing a ledge six feet wide, of very rich ore. Upraise from the north drift is up 105 feet, with a vein in the top four and a half feet wide, of good milling ore; the ledge here is three feet wide, of good ore. North drift, 550-foot level, is in 120 feet; the ledge in the face of this drift is four feet wide, of good milling ore. There is no change to note in the cross-cuts, 700-foot level. The stopes throughout the mine are looking as usual."

COLORADO.

CLEAR CREEK COUNTY.

The Colorado Central is working a force of 75 men and producing an average quantity of ore.

CONSOLIDATED HERCULES & ROE.—The *Georgetown Courier* of March 25th says: "Forty-five men are employed in this mine. Work is driven by night and day shifts. A portion of it shows a continuous ore-vein, in places six inches solid, that mills, dressed into one class, 348 ounces per ton."

"The level at the bottom of the Filius shaft, 43 feet deep, is being pushed east with a double shift, and stoping is going forward over the level. The breast and roof of the level and the stope, a distance of 50 feet, show a continuous ore-vein that carries gray copper and ruby silver which assays over 600 ounces. The ore lies on the hanging-wall, which in this part of the mine is very smooth and well defined for over 500 feet in depth."

"There is over a mile of T-rail track furnished with necessary cars."

DIVES.—"A splendid body of ore has recently been opened in the West Dives mine. The vein is said to be from two to two and a half feet in thickness, the first class of which mills from 600 to 700 ounces. Two men took out over \$600 in fifteen days. Cox & Simmons, lessees, have also struck it big in a level they have been driving from the Pelican workings toward the place where the former parties are at work. Their last mill-run netted them \$350 apiece for fifteen days' work."

The Lacrosse is rapidly coming forward as an important ore-producer. The shaft has reached a depth of 80 feet, showing more or less ore on both sides all the way down. The 50-foot level has been driven west 40 feet, and over it some stoping has been done with very profitable results. The level paid about \$18 per foot for running. The stope and level show a six-inch vein of solid ore.

"The 80-foot level, running both east and west, is in big pay, this part of the mine being worked by the owners. The east drift is in about ten feet, and all along its roof, breast, and floor can be seen a continuous vein of solid ore averaging about five inches in thickness. The west drift is in about the same distance, and shows about the same quantity of ore. A mill-run on the 13th inst. gave the following results: 325 pounds first class, 425 ounces per ton; 951 pounds second class, 161 ounces per ton; 2900 pounds third class, 69 ounces per ton."

LUCKY HESPERUS.—"This Democrat Mountain mine is still worked under lease. A winze has been sunk from the tunnel 50 feet deep, and from its bottom a level has been driven 38 feet east and 45 feet west. Work is going forward now at stoping over the tunnel level and over the 50-foot level, and the latter level is also being driven east. These workings show an ore-vein from one to four inches in thickness, which is worth, dressed into one class, about 600 ounces per ton."

PERUVIAN.—"A fine body of ore has been struck in this mine, in a level recently started from the cross-cut tunnel. This lode was cut 250 feet from the mouth of the tunnel, and 37 feet farther in another lode was cut, showing a four-inch vein of iron pyrites, upon which drifting will soon be commenced. Work is progressing in the 70-foot level, on both sides of the shaft, the ore-vein at this point ranging from 3 to 6 feet in thickness of nearly solid galena. The ore is being shipped to the Chihuahua Company's mill, which has the mine leased. A force of 20 men is employed, which will be increased."

GILPIN COUNTY.

The main shaft of the Monmouth-Kansas Company is the deepest in Colorado—1105 feet. It will be extended to 1500 feet.

LAKE COUNTY.

ARGENTINE.—The *Leadville Herald* says: "The regular productions of ore from the Argentine mines are about six to eight tons daily. The ore is taken to the Harrison Reduction Works for treatment. The tunnel is 1050 feet in length. The workings are to the west from the tunnel."

MODOC.—The *Democrat* says: "The shaft in which work was stopped after striking and cutting through the contact is now five hundred and twenty feet deep, the deepest on Carbonate hill, and possibly in the camp. The width of the contact varies in the statements of different parties from fifteen to fifty feet."

MORNING STAR.—"Every level drift and cross-cut in the Morning Star shows ore. It varies in thickness from two feet, where the porphyry takes a wave or slip downward, to over twenty feet in the nest, with an average of perhaps twelve feet. Eight thousand tons have been shipped since last October, and the output is now about sixty tons a day. As a class, it carries a remarkably high percentage of lead, at least forty-five, and gives average assays of about that many ounces of silver. It commands all of its commercial value and is in great demand by the smelters."

The *Leadville Herald* of March 24th, in the same connection, says: "During the year 1878, the shipments of ore gave a net return of \$7447.70. In 1879, there was received for ore from the Morning Star \$283,591, and about \$80,000 from ore mined from the claims included in the recent purchases of adjoining claims by the Morning Star Company."

ROCK.—The *Democrat* says: "The group comprising the Rock, Dome, '76, and Pinnacle, owned by Stevens & Leiter, are by far the most active mines located along the gulch. They, with the La Plata, may be said to be the south extension of the Iron mine vein, but, possibly broken at the gulch, are now more in the nature of a deposit than a true contact or fissure. The several properties are worked by a tunnel and drifts from an open cut, and are shipping daily to the smelters an average of fifteen tons. The grade is very superior in the respect that it contains a larger percentage of lead than most of the mines, besides giving good returns in silver. This, together with the lime from the bed-rock, which is more or less mixed in the ore, makes it especially desirable for the smelters for its self-fluxing properties."

SAN JUAN COUNTRY.

A correspondent of the *Denver News* writes as follows: **BELLE OF THE WEST.**—"Three levels of 100 feet each have been run on this mine since January 1st, and show a continuous body of fine ore, running high in galena, and averaging about one hundred ounces per ton in silver."

BLACK WONDER.—"One claim on this lode has been recently sold to Boston parties for one hundred thousand dollars, and work has been begun and is pushed vigorously on this property. Three other locations on this vein will be worked extensively this season. The ore produced from this mine is black sulphurets and is a high-grade ore, running from one hundred to one thousand two hundred ounces per ton."

UTE AND ULÉ.—"These mines were purchased four years ago by the Crooke Brothers, of New York, and afterward transferred to the Crooke Mining and Smelting Company. For three years they were worked with discouraging results, but the development of the past winter has demonstrated their value beyond cavil or question. The drifts run this winter show a continuous vein of three feet of ore, which will mill one hundred ounces in silver to the ton, and average forty per cent galena. A force of about fifty men is employed, and will be augmented as the season advances. The works of the company will be increased, and the production of the precious metal will be large."

The *Palmetto mine* "shows a pay-streak of about eighteen inches, which will average about five hundred ounces in silver per ton. A large force of men has been constantly at work on this claim all winter, and the ore improves with each shot fired. This is one of the great fissure leads of San Juan, and six locations have been made upon the vein, and wherever opened it shows magnificent mineral. Three locations on this vein have lately passed into the hands of Eastern capitalists, and will be worked extensively."

SUMMIT COUNTY.

ROBINSON CONSOLIDATION.—The *Leadville Democrat* of March 20th says: "Another lot of this splendid ore was settled for by the Pa Plata smelter yesterday, with Mr. Charles Thompson, the Leadville agent of the mines. It was two days' shipments, amounting to fifty tons, and gave the splendid average of 262 ounces in silver to the ton and fourteen per cent of lead, making a commercial value of \$300 for a ton of ore, or \$15,000 for two days' work."

The *Leadville Herald* of March 26th says: "The daily receipts of ore from the Robinson mine, at Ten Mile, are from twenty-five to thirty tons. Only the first-class ore is brought over, and it contains about 250 ounces of silver to the ton. A large amount of lower-grade ore is also mined and reserved at the mine for future treatment. There are very few mines in Leadville that are producing the amount of high-grade ore that comes from the Robinson. The mine is clearing an immense amount as at present worked; but with smelting works nearer at hand, the net amount would be largely increased."

GENERAL NOTES.

The *Storm King lode*, near Buena Vista, has been located for over 13,000 feet in length. The ore is a gold-bearing quartz.

The *Ferrin Mining Company* will soon put up a new stamp-mill in Russell Gulch.

The fact of there being twelve "North Star" lodes in Lake County would seem to indicate a marked partiality among miners in favor of that lummy.

DAKOTA.

GALENA DISTRICT.—Work continues on the Cora, with gratifying results. The latest development upon this vein, which extends from the General Merritt on the north to the Silver Queen on the south, and has been opened at intervals of from one to two hundred feet, is on the Silver Queen, and consists of a shaft, to the depth of 28 feet, in a body of handsome ore that averages 90 ounces to the ton.

The *Black Hills News* says: "The Rosebud, Lead City, is attracting considerable attention. A shaft down 154 feet through a porphyry cap, lately struck a fine body of quartz, believed to be an extension of the Homestake."

The *Rochford Miner* says: "The grading for the Charter Oak mill is finished, as are also the ditches. The machinery for the mill is on the ground, and just as soon as the building can be rushed up, the work of reducing the Charter Oak quartz will begin. A rich strike was made on the Queen Bee, Saturday. The shaft on this mine will be sunk 110 feet and cross-cut. Work on the mine is progressing rapidly."

GEORGIA.

From the *Dahlonega Mountain Signal* of the 26th ult. we take the following: "The Hightower Mining Co., situated on the Hightower River, 3 miles from Auraria, is now engaged in erecting a 20-stamp mill. The Chicago & Georgia Mining Co. is adding ten more stamps to its mill at Auraria. The Findley Company has added to its works a new pump capable of lifting water to the reservoir, situated on top of the ridge, a distance of 300 feet, at the rate of 500 gallons per minute; also two new boilers of 50 horse-power each."

MICHIGAN.

ATLANTIC MINING COMPANY.—The annual report for 1879 states that the production of mineral was 3,257,085 pounds, which yielded 71.81 per cent, or 2,359,073 pounds of refined copper. The copper smelted and marketed during the year amounted to 2,307,822 pounds, and realized an average price of 16.3 cents per pound.

The net gain during the year was \$85,492.58, and the net surplus December 31st, 1879, \$242,778.67.

The mine still continues to show the remarkable uniformity of yield that has hitherto characterized it. The amount of rock sent to the mill in 1879 was 122,688 tons, which yielded 2,359,073 pounds refined copper, or 19 pounds to the ton

of rock stamped, a percentage of yield almost identical with the average of previous years. Experience has shown that only a very small portion of the vein-matter can be safely rejected as being too poor to pay for treatment in the mill, and it therefore only remains for us to study the most economical methods of mining and handling all the material that the stamp-mill can treat, and to that end the officials at the mine are using their best efforts.

The total cost of stamping a ton of rock was 42.44 cents, which includes all repairs, and painting the mill and houses connected with it.

The *Northwestern Mining Journal*, in the following table, gives the results of the last five years' work on this property:

ATLANTIC MINING COMPANY.	1875.	1876.	1877.	1878.	1879.
Total product, mineral.....	1,089½ tons.	1,332½ tons.	1,440 tons.	1,423¾ tons.	1,678¾ tons.
Product of ingot copper.....	783¾ "	917¾ "	1,027 "	1,003 "	1,169¾ "
Percentage of mineral.....	71.92	68.85	71.32	70.44	71.81
Gross earnings.....	\$354,759	\$385,252	\$378,141	\$322,593	\$392,592
Net expenses.....	312,179	342,371	328,572	311,268	249,680
Per cent of expenses to earnings.....	88	88¾	89	96	63
Construction expenses.....	\$34,532.41	\$5,422.68	\$13,008.74	\$26,673.50	\$11,334.42
Net profit.....	42,579.00	42,880.60	64,569.00	11,335.00	95,492.00
Dividends paid.....				20,000.00	
Surplus undivided.....	99,585.00	137,043.00	182,634.00	147,286.00	\$242,778.00
Total mining cost of ingot copper per pound.....	17.06 cts.	15.15 cts.	13.20 cts.	13.09 cts.	10.18 cts.
Smelting, marketing, and other expenses per pound.....	2.86 "	2.96 "	2.54 "	2.42 "	2.02 "
Average cost per pound, marketed.....	19.92 "	18.11 "	15.74 "	15.51 "	12.20 "
Average sales of ingot copper per lb. of rock stamped.....	22.47 "	21.35 "	18.54 "	16.15 "	16.30 "
Tons of rock stamped.....	80,000	96,666	105,780	111,709	122,668
Yield of mineral per ton of rock stamped.....	27.23 lbs.	27.56 lbs.	27.23 lbs.	26.25 lbs.	20.55 lbs.
Yield of ingot per ton of rock stamped.....	11.58 "	13.39 "	19.42 "	18.50 "	19 "
Cost per ton, stamping and washing.....	87.06 cts.	67.09 cts.	57.79 cts.	48.65 cts.	42.44 cts.
Number fathoms broken, in openings and stopes.....	5,628	6,550	7,091	8,299	8,665
Yield of mineral per fathom.....	387 lbs.	403 lbs.	406 lbs.	343 lbs.	375 lbs.
Yield of ingot copper per fathom.....	287½ "	280¼ "	280¾ "	243 "	266 "
Average force employed.....	316 men.	333 men.	352 men.		
Fathoms of ground broken for each employed.....	17.80	19.67	20.14		
Cost per ton of transporting rock to mill.....	14.98 cts.	12.70 cts.	12.17 cts.	8.38 cts.	7.37 cts.

* Includes a dividend of \$40,000, paid to stockholders January 20th, 1880.

RIDGE COPPER COMPANY.—The annual report states that the product of the mine for the year has been:

Barrel copper.....	113,315 lbs.
Mass.....	82,960 "
Stamp.....	68,350 "
	264,565 lbs., or 132,282½ tons,
which has realized, including mineral remaining at the mine at 75 per cent yield.....	\$41,766.19
Sale of silver.....	409.40
Received from interest.....	862.03
Total receipts.....	\$43,037.62

The expenditures of the year are as follows:

Mine expenses.....	\$30,073.81
Other expenses, as per treasurer's balance-sheet.....	7,213.99
	37,287.80
Shows the profit on the business of the year.....	\$5,749.82
The statement of assets and liabilities in last report showed a balance of.....	\$33,304.00
Deduct bad debt written off.....	18.21
	\$33,285.79
Profit on business of 1879.....	5,749.82
Balance on hand January 1st, 1880.....	\$39,035.61

The *Northwestern Mining Journal* reports the overland shipment of refined copper since the close of navigation on Lake Superior as follows:

	Ingots.		Mineral.	
	Tons.	Lbs.	Tons.	Lbs.
Calumet & Hecla.....	3,137	439	29	1,178
Atlantic.....			400	565
Allouez Tribute Co.....	131	133		
Diamond T.....	2	692		
Quincy.....			265	30
Franklin.....	386	1,400		
Oseola.....	622	512		
Pewabic.....	56	731		
Central.....	59	1,555		
Good Hope mine.....	5	1,414		
P. S. & Co., Tribute.....	1	1,653		
P. R. & S.....	8	614		
Diamond B.....	7	163		
Total.....	4,419	257	794	1,773

CENTRAL.—The *Boston Economist* says:

"This mine was organized in 1854, and for a time it did not do well. Finally, however, ore was struck, and since then it has been uniformly successful. The mine has been carried to the 190-fathom level, and is working in a fissure-vein which varies from 1 to 10 feet in width, with a strike a little west of north and a slight easterly dip. Most of the metal produced is mass copper of about sixty-five per cent, the rest being stamp copper, which averages three and a half per cent of copper. The masses are irregular slabs, weighing from four to eight hundred tons in the gross, which are mined by cutting away the vein-rock and blasting out. It is then cut into pieces convenient for hoisting and smelting. So pure are some of the pieces that they are sent to the smelting-house without dressing. In other cases, the masses are sent to the kiln-house, where they are piled up and fired with wood, by which means the adhering rock is rendered

friable and is easily disengaged from the mass. At present, the miners are at work on an enormous slab estimated to weigh three hundred tons, and measuring between eighty and one hundred feet in length. As most of the copper is mass work, but little stamping is done, and the stamp-mill is a small one, with a Gates stamp. The vein-rock—calc-spar, chlorite, and zeolites—is so soft that nearly five and one half tons per head can be stamped daily. The financial condition of the company is very satisfactory. The only assessments that have been made were those levied at the opening of the mine and amounted to only \$100,000, while the amount in dividends already paid reaches the handsome sum of \$1,440,000."

GENERAL NOTES.

Concerning the Aztec, a reorganized Lake Superior mine, the Ontonagon *Miner* says: "The mine is one of the oldest and best in our county, situated on the southern part of the mineral range, with the several veins of the range crossing the property. The mine has never been worked to the extent of its capabilities—indeed, we may say, nothing but surface scratching has been done. The mine is capable of being made a large producer."

The ancient pits on this property are something remarkable, and a very large amount of mass copper has been taken from them for the amount of rock broken. Besides the mass copper veins—which are the ones that have been principally opened on—there are good stamp lodes crossing the property, which, it is claimed, can be opened on and made as productive and remunerative as any stamp-veins on the lake.

The managers of the Hancock are contemplating the placing of a head of Ball's stamps in the mill belonging to the company.

A shaft is to be sunk at once on the west lode of the Huron. Pumping machinery for another portion of the old mine will soon be running.

The last letter from the Pewabic agent, under date of March 6th, says: "Every opening in the mine continues to show a very fair amount of stamp and barrel copper. The lode in the shaft now down about 35 below the 230-foot level seems to improve in richness as we gain in depth. The 240 drift, which is now in under the shaft, is opening up some very valuable ground. If every thing continues to run as we expect, we shall soon be in a condition to send you copper that will leave a handsome profit over our running expenses."

In February, the incidental work in and about the "bonanza" shaft of the Pewabic afforded the handsome amount of 20 tons of copper.

The Ridge mine is said to be showing remarkably rich in copper just now, in the drifts that are opening for the summer's work.

The *Houghton Gazette* gives the following as the yield of the mines in the Houghton District who publish their reports, for February, short month, namely:

	Tons.	Pounds.
Calumet & Hecla	1,451	1,570
Osceola	156	1,000
Franklin	133	175
Atlantic	125	1,460

NEVADA.

ALEXANDER.—The Alexander mine, located in Union District, we learn from the *Enterprise*, is about to be sold for \$1,000,000; the owners having gone to San Francisco to complete the trade. The mill is turning out \$37,000 in bullion monthly.

EUREKA.—The Eureka Consolidated will shut down its smelting-works about the 1st of April, or as soon thereafter as the weather will permit for efficient work. They expect to make the needed repairs in about two weeks.

RICHMOND.—The Eureka *Leader* says: "On the 400-foot level of the Richmond, a drift has been run 400 feet in solid ore, and a cross-cut 180 feet, in ore also; and the end is not yet. The vein has been opened 900 feet on the dip, and extends from the 200 to below the 600."

MADRE.—The *Ward Reflex* says: "The Jew Peter tunnel, belonging to the above company, is being extended at the rate of nearly three feet per day. For the past four or five days, the tunnel has been in barren porphyry—what would be called, on the Comstock, a 'horse.'"

DUNDERBERG.—The Eureka *Sentinel* says: "We made mention some time ago that a bonanza had been found in this property. The ore was found on the 400 level, and vigorous prospecting is now being done on the third and fifth levels to find the extent of the ore-body. From fifteen to eighteen tons are daily extracted and sent to the Richmond Works for reduction."

HOOSAC.—The Eureka *Sentinel* says: "The west drift on the 800-foot level is now in a distance of 720 feet, and is in very favorable ledge matter."

UTAH.

The Tesora mine, Tintic, has been sold to Chicago parties, who have incorporated it under the name of the Tesora Mining Company. The property has produced about \$35,000 worth of ore. The ore goes from \$50 to \$60 per ton, and carries gold, silver, and copper.

From the Park County *Mining Record* of March 20th we take the following:

EMPIRE.—"The pump for the Empire has arrived and will be placed in position as soon as the station at the 400-foot level has been completed for its reception. It is a monster of the Worthington make, double cylinder, with 10-inch plungers, and a capacity of raising 500 gallons per minute from a depth of 500 feet. Drifting on the 300 level has been suspended for some time, as water was coming in fast, and fears were entertained that, should the vein be cut, the small pumps could not handle it. In the mean time, the work of raising on the third compartment has been pushed from both the 200 and 300 levels, and over fifty feet have been made in both."

ONTARIO.—"On Friday morning of last week, the suction-chambers in the new mammoth Knowles pump on the 500 level of the Ontario gave way, deluging the entire station with water. Some time ago, a crack was noticed and a new casting sent for to the manufacturers in Massachusetts, but it has not yet arrived. The accident is due to a flaw in the casting. On Sunday morning, it was sent to Salt Lake for repairs. In the mean time, the smaller pumps are handling the water, with the assistance of the tanks, which are raising only about 120 gallons per minute."

ALTA NOTES.—From the Salt Lake *Tribune* of the 21st ult. we extract the following: "The Flagstaff is working three men by lease and four by contract on the Eclipse. This property is worked by the American Mining Company."

"The Vallejo & North Star has been shut down on account of the depth of snow, but has now resumed active operations. The company is at present working a force of from fifteen to twenty men. Shipments are made regularly, and the mine is said to be looking very fine."

"The Prince of Wales shows no signs of letting up. At the present writing, a force of twenty-five men is actively engaged, and shipments are made regularly."

"The Reed & Benson Company is working the Ophir, situated immediately above the Reed & Benson, and taking out ore through the tunnel of the latter. This tunnel is run into the mountain some 1400 feet, and runs 500 feet below the lowest workings."

"The City Rock, of this city, is worked by a large force of men, and is making regular shipments. The owner, having purchased the Utah, is running a tunnel from Grizzly Flat, to prospect the vein for 2000 feet."

"The Lavinia is working three or four men, who are employed sinking the main shaft. At present, they are down 425 feet below the Lavinia tunnel, but the prospects are not very encouraging."

"The famous Emma is preparing to put in new machinery, and is sinking below the Bay City level."

"The Superior, a patented claim, is opened by a shaft and tunnels amounting, to about 600 feet."

"The Highland Chief is shut down temporarily, but will employ a good force as soon as the unpropitious weather will permit."

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 Altering, Repairing, etc., four Hook and Ladder Trucks; Department of Fire and Buildings, 367 Jay street, Brooklyn.	April 3, 1880.
Road Work; Clerk's Office, Board of Commissioners, Wheeling, West Va.	" 3, "
Coal for the Public Buildings; Department of City Works, Municipal Buildings, Brooklyn.	" 3, "
For Furnishing one Four-Wheeled Hose-Tender; Department of Fire and Buildings, No. 367 Jay street, Brooklyn.	" 3, "
For Furnishing Gravel; Office of the City Comptroller, Pittsburg, Pa.	" 3, "
For Labor and Materials; Office of Supervising Architect, Treasury Department, Washington, D. C.	" 5, "
For Cast-Iron Water-Pipes; Boston Water-Board Office, Boston, Mass.	" 6, "
For Dredging Gowanus Canal; Department of City Works, Municipal Buildings, Brooklyn.	" 7, "
Ice for Public Buildings for the Year 1880; Department of City Works, Municipal Buildings, Brooklyn.	" 8, "
For Building an Office Building for the Water and Surveying Department; Lewis Paynter, City Hall, Wilmington, Del.	" 8, "
For Supplying the Coal and Wood required for the Public Schools in New York City; Clerk of the Board of Education, corner of Grand and Elm streets, New York City.	" 8, "
Dredging at the Mouth of the Pascagoula River, Miss.; U. S. Engineer's Office, Mobile, Ala.	" 10, "
For Steamboats to Run between New York and Long Branch; William Ottamann, Executive Committee, Fulton Market, New York City.	" 10, "
For Wagon Transportation; Office of the Chief Quartermaster, Fort Leavenworth, Kansas.	" 13, "
For Removal of Wrecks from Delaware Bay and River; U. S. Engineer's Office, 1619 Chestnut street, Philadelphia, Pa.	" 20, "
For Military Supplies; Office of Chief Quartermaster, Fort Omaha, Neb.	" 20, "
For Running a Cross-Cut Tunnel; George S. Andrus, Lock Box 511, Ouray, Colo.	May 1, "
Rolling Stock; F. Braun, Secretary, Department of Railways and Canals, Ottawa.	July 1, "

THE COAL TRADE REVIEW.

NEW YORK, Friday Evening, April 2.

Anthracite.

We have nothing new to note since our last issue. The trade continues in a most satisfactory condition. As we intimated in our last, a general advance of about 25c. per ton has been made, covering the entire list of sizes, except stove. The apprehension that stove size might become a glut in the market has not been realized, for the reason that the windy weather of the past two weeks has caused as great a consumption of coal for domestic use as the most rigorous winter weather would have done; and the fact that stove coal is marked 25c. per ton lower than egg and broken, induces the substitution of it, for steam purposes, in the place of the sizes mentioned, particularly as it may be had more readily. The present indications are, that all the coal coming forward from now on, even on a basis of full working time, can be easily disposed of. The unanimity of action on the part of the presidents of the different companies, in cutting down the production at a time when a block was threatened, has gone far to inspire confidence in buyers, on the ground that, should such action again become necessary, it will certainly be resorted to. We think it advisable not to unnecessarily delay purchases, as there is a strong outlook for good prices for the rest of the season, and trouble among the miners not among the remotest contingencies.

The Lehigh Valley RR. Company has issued a circular announcing the freight to New York from Mauch Chunk at \$1.45 per ton.

The production of anthracite coal last week was 360,419 tons, as compared with 340,234 tons for the previous week, and 457,113 tons the corresponding week of 1879. The total production from January 1st to March 27th was 4,322,961 tons, as against 4,727,100 tons for the like period of last year, showing a decrease this year of 404,139 tons.

Bituminous.

This business is almost entirely stopped by strikes. In the Clearfield District, the miners still demand an advance, and new miners are sent in under protection. In the Cumberland region, the strike of the railroad employes has stopped shipments. The outlook is favorable to a good business and very fair prices, when these matters are fully settled.

We publish the following letters from our regular correspondents. Prices will be found elsewhere.

"Trade for the month just closing has been better than the preceding two or three months. The demand since the 15th being quite fair; the weather during the month being up to the average in point of coldness, though a protracted rainy spell during the first half interfered somewhat with the trade. Stocks on the rail are quite exhausted, and, with one exception, the dealers on the water have nearly sold out."

"We expect a good trade during April, especially if the month be cold, which we look for, as it is generally the case after such an exceptionally mild winter."

"Contrary to expectation, prices for April have been advanced. On hard white-ash and Shamokin, all prepared sizes, advanced 20 cents, except stove. On Lykens Valley the advance is 35 cents on egg and 35 cents on stove."

"There is some inquiry for anthracite for steam, in consequence of the scarcity and present high prices for bituminous. Altogether, the outlook for the spring trade is quite fair."

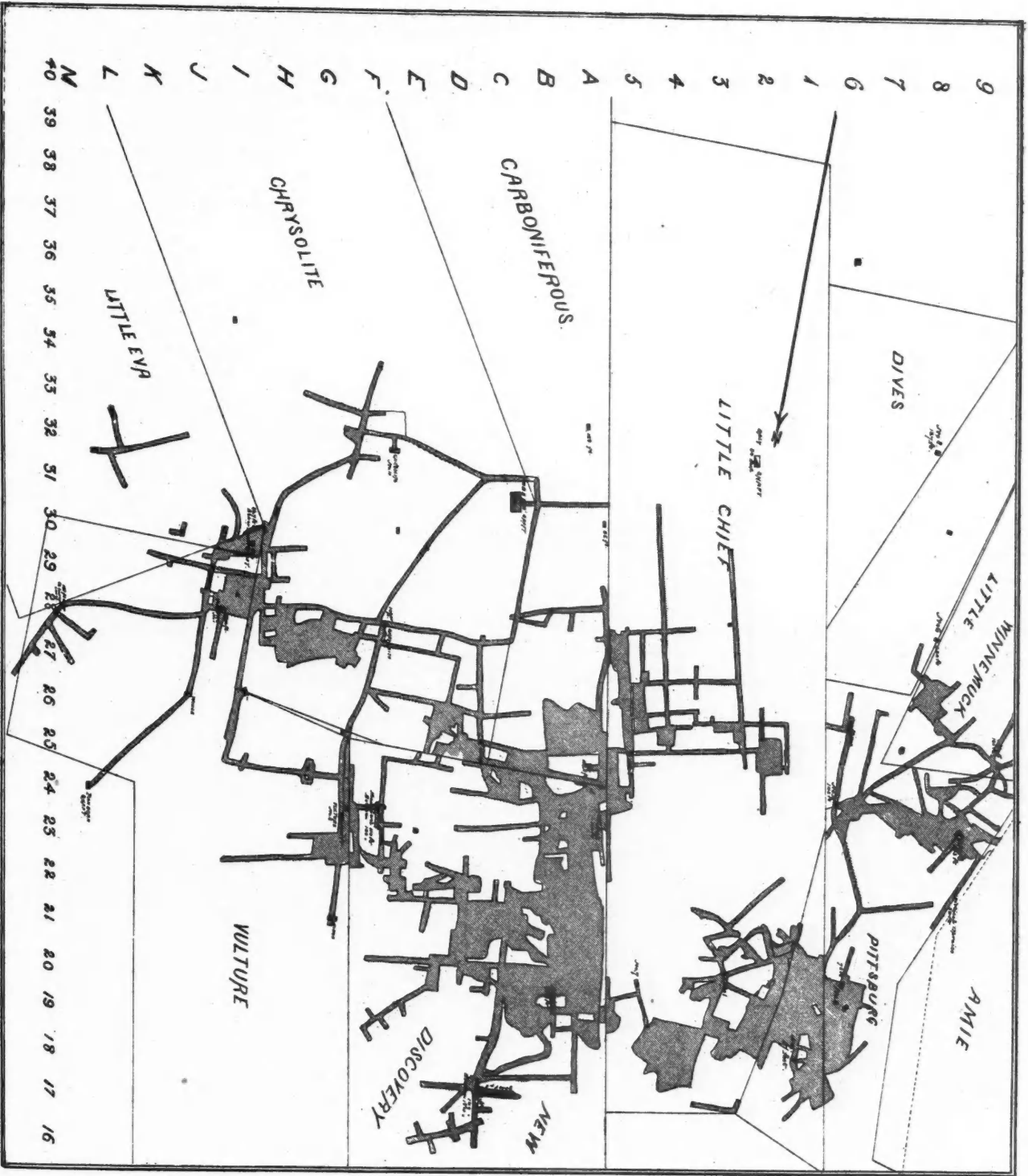
BALTIMORE, March 31.

"Since my last report, there has been no material change in the condition of affairs here. Brier Hill is off-red in smaller quantities than usual at this season, and prices are held firmly at \$4@54.50 f. o. b. vessel."

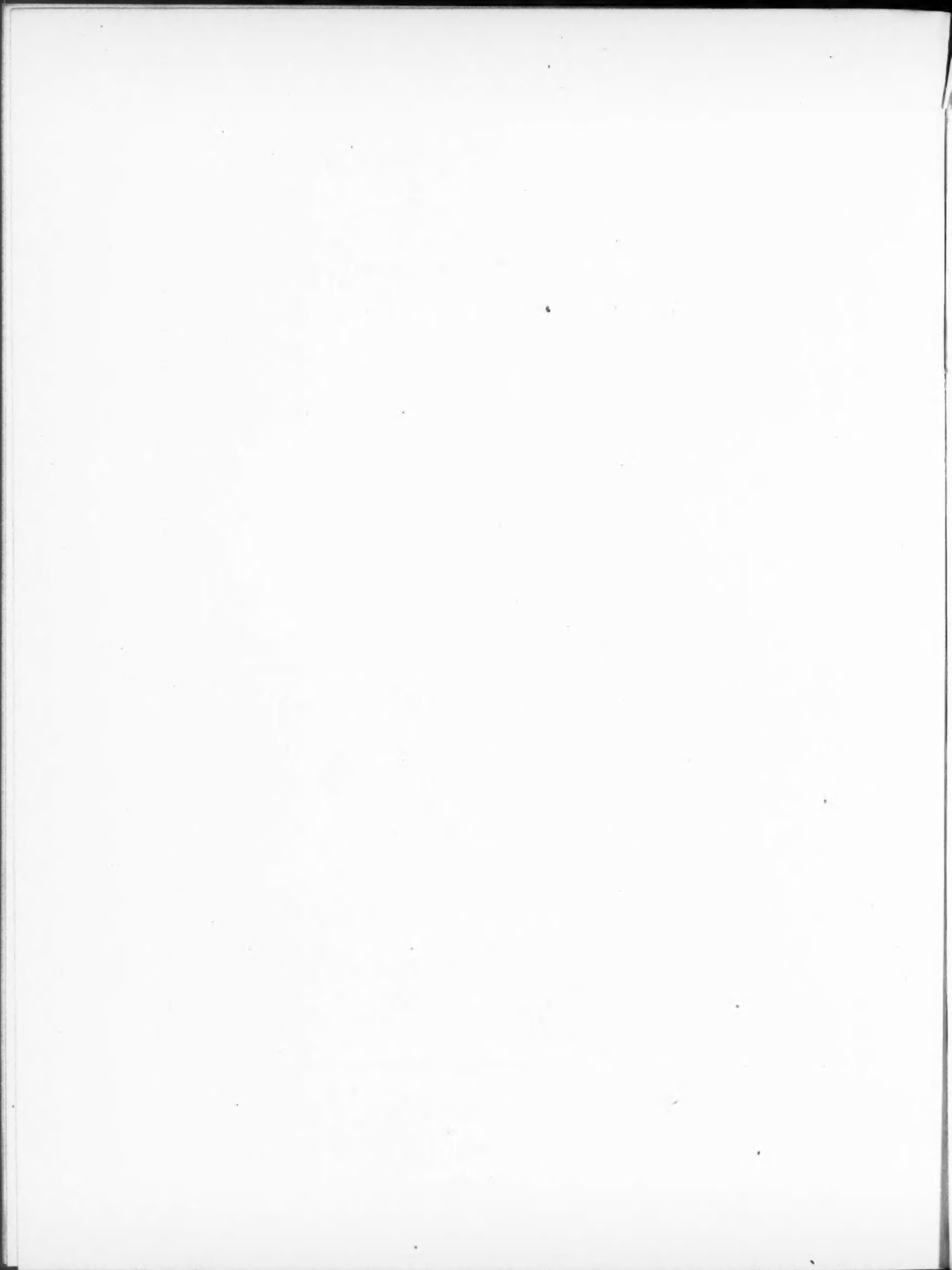
"No Massillon coal has yet come forward. The long strike in that district is, to all appearances, as far from settlement as ever."

CLEVELAND, March 29.

"In the Straitsville coals, there are indications that the operators are again to pursue the same suicidal policy which usually governs their actions. With Brier Hill scarce, and firmly held at a good advance, with Massillon entirely out of the market, and with but little competition for the control of the lake trade, the shippers of Straitsville coal, notwithstanding it occupies a front rank as a shipping coal, with a greatly increased demand, have already begun to cut prices, and will soon succeed in demoralizing the mar-



MAP OF THE UNDERGROUND WORKINGS OF THE LITTLE PITTSBURGH AND CHRYSLITE COMPANIES, LEADVILLE, COLORADO.



ket to their hearts' content. It is strange that the operators in that greatest coal-producing district of the State will willfully throw away the only opportunity they have had in several years for obtaining a fair remuneration for their labor and large outlay of capital.

Charterers are reported to Lake Michigan ports at 90 cents to one dollar, and to Lake Superior ports at seventy-five cents.

"I note an advance of 25c. per ton on all sizes of anthracite, with an upward tendency. This market will be comparatively bare upon the opening of navigation. Inclosed herewith, I hand you prices, and hope next week to give you some statistics and further reference to this subject.

"Yours of the 27th inst. is received. The retail coal business is very quiet, and not much doing wholesale.

"The coal trade is in a transition state, being just between seasons. When we can receive our new coal, then we hope to have times a little better, and a change also in prices. Quotations in this also the same.

"In reply to your favor of the 27th inst., we would say that our coal market generally is firm, with a fair demand for anthracite; but as stocks are large for this time of the year, sellers do not hold so firmly as they generally do at this season.

"Prices we may say are unchanged, and our buyers are in no hurry to buy for this year's supply, even with the rumor of advance in prices.

"Bituminous coals are firm on the supposition of little or no Scotch coal importations this year to Montreal, and on basis of this, large sales of Lower Province coals have been made, and colliery owners are very sanguine of still higher prices later in the season.

"There are more early inquiries for Scotch this year, and with the slight chance of obtaining them, several prejudiced coal consumers have already effected contracts for our Lower Province coals at fair prices.

"No alterations in my quotations with exception of 'New River Bituminous.' Mark that 25c. per ton higher.

"There has been a decided improvement in trade in this market during the past month, and in consequence, coal stocks are much reduced. The high price now ruling for Cumberland will drive it out of this market. Having, however, a very admirable substitute in 'New River Bituminous,' the loss will not affect us much. All grades of coal are stiffening in price here, and I see no indications of weakening soon. Manufacturing all in full blast.

"The prospects for trade at this point are very good as soon as navigation is fairly opened.

"The prices on bituminous coal are unsettled, the miners in the Massillon District have been on a strike since last October, with no prospect of an early adjustment of the difficulty.

"There is a disposition among the operators in the Straitsville and Shawnee District to reduce the present price of mining (80c.), which may bring on a short strike. We look for settled prices in a few days.

"The market on coal and coke here is firm.

"The anthracite trade has not opened up as yet, and what little coal there is moving is to piece out the season. We anticipate, however, a good trade for the coming fall and winter. The high lake freights have a tendency to retard the business in bituminous coal, which, when it does open, will be as brisk as the stocks are light.

COAL.—Ample rains have renewed and continued the navigable stage of water in the rivers, which has been improved by the operators who have shipped within the week some 2,000,000 bushels (76,800 tons) of coal to the markets below, thus making a considerable addition to the heavy stocks already on hand. So large a portion of the coal at the places of its consignment is retained until it is sold on board the craft that floats it from the mines to its destination, that returned empty boats are becoming scarce, and the want of them at the collieries is hindering considerably the work of mining. Still many boats with cargoes aboard are on hand, and others are being laden at the rate of some 200,000 or 300,000 bushels a day, so as to keep up a lively trade as long as high water continues. Miners are paid the same as hitherto this season—3½ cents a bushel, equal to 83 cents a ton—and there is no probability of a change, at least, until the business is suspended by low water, which is likely to occur soon, and under the law of compensation, to last a period as unusually long as that which has marked the past few months by continued freshets.

Kanawha coal is being run freely to market, where it is sold at half a cent less than Pittsburg coal, a difference that does not seem to materially affect the sales of the latter, owing to its superior quality. In this region (the K.), we have been informed that but 3 cents is paid for mining. This, with the advantage of being 250 miles nearer market, places the operators in a competitive condition of strength and safety.

Prices have settled to the lowest rates, where there is no room for further depression, without positive loss. We continue quotations without change:

PRICES AT PITTSBURG.		
Wholesale, on board.....	5@6 cts. per bushel.....	\$1.59 per ton.
Retail, delivered.....	8@9 cts. " ".....	2.39 "
AT CINCINNATI.		
Wholesale, on board.....	7¾ cts. per bushel.....	\$2.05 per ton.
Retail, delivered.....	10 cts. " ".....	2.65 "
AT LOUISVILLE.		
Wholesale, on board.....	7¾ cts. per bushel.....	\$2.05 per ton.
Retail, delivered.....	10 cts. " ".....	2.65 "
AT NEW ORLEANS.		
Wholesale, on board.....	30 cts. per barrel.....	\$2.90 per ton.
Retail, delivered.....	35 cts. " ".....	4.83 "

Bushels are rated among dealers here at 76 lbs.; 20½ bushels make a ton of 2000 lbs., nearly.

The barrel that rules the coal measurement in New Orleans contains 2 4-7 bushels of 80 lbs. each, making about 200 lbs. Nine and two thirds of these barrels weigh a ton, within a small fraction.

COKE.—There is a slight depression in the demand for coke, growing out of the lull in the iron trade, but the manufacture goes on without diminution, from 40,000 to 42,000 tons a week, and the slackened demand from the iron interest is fully made up by the large shipments made by water, which the unusual period of navigation has rendered profitable. Prices are about what they have been a few weeks past—\$3.25 to \$4 per ton of 2000 lbs. on board cars at the ovens.—American Manufacturer.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, April 2.

American Pig.—The utmost quietness still reigns in this article. The companies that have been in blast for several years past are well sold ahead, and are not forcing sales; and those furnaces which have but lately gone into blast are, in some cases, driven to find a market, and are compelled to make concessions. The outlook, we think, favors a pretty good demand in a short time, and the downward tendency of prices will probably be checked if not reversed. We quote No. 1 Foundry at \$35@ \$36; No. 2, \$34@ \$35; and Forge at \$33@ \$34.

Scotch Pig.—There have been a few sales of this iron. The depression in the market here, and the decline abroad, have had a tendency to weaken prices here. We quote Eglinton and Glengarnock at \$28@ \$29; Gartsherrie, \$29@ \$30; and Coltness, \$33.

Messrs. JOHN E. SWAN & CO., of Glasgow, under date of March 19th, 1880, report 114 furnaces, against 89 at the same time last year. The quantity

of iron in Connal & Co.'s stores was 441,041 tons, a decrease of 2356 tons for the week. The shipments show an increase of 56,332 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 an increase of 1774 tons. The following are the quotations of the leading brands of No. 1 pig-iron: Gartsherrie, 67s. 6d; Coltness, 69s.; Langloan, 69s.; Summerlee, 67s. 6d.; Carnbroe, 65s.; Glengarnock, 67s.; Eglinton, 61s. Middlesbrough pig-iron was quoted as follows: f. o. b., Tees: No. 1 Foundry 62s. 6d.; No. 2, 59s.; No. 3, 55s.; No. 4, 55s.; No. 4 Forge, 56s.

Messrs. JOHN E. SWAN & CO., of Glasgow, under date of March 12th, 1880 report 114 furnaces, against 90 at the same time last year. The quantity of iron in Connal & Co.'s stores was 443,397 tons, a decrease of 486 tons for the week. The shipments show an increase of 46,090 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 an increase of 6194 tons. The following are the quotations of the leading brands of No. 1 pig-iron: Gartsherrie, 70s.; Coltness, 72s. 6d.; Langloan, 72s. 6d.; Summerlee, 70s.; Carnbroe, 70s.; Glengarnock, 70s.; Eglinton, 65s.; Middlesbrough pig-iron was quoted as follows, f. o. b., Tees: No. 1 Foundry, 67s. 6d.; No. 2, 62s. 6d.; No. 3, 58s.; No. 4, 58s.; No. 4 Forge, 59s.

Rails.—Although we learn of no business in steel rails, there is a very good inquiry and indications of considerable business in the early future. Foreign prices are said to be a little higher than at the beginning of the week. But speculative lots can be bought at \$74, laid down here; orders to be placed direct with makers would run from \$75 to \$79. Foreign iron rails can be purchased at \$61@ \$63 here, while American rails are held at \$62@ \$63 at the mills for small lots, for early delivery.

Old Rails.—These are very quiet, and quoted at about \$38.

Wrought Scrap.—There has been some business in this article. We quote No. 1 Scrap from ship at \$37@ \$38, and from yard, \$41@ \$42.

We publish the following letters from our regular correspondents. Prices will be found elsewhere:

"BALTIMORE, March 29. The iron market shows a tendency toward lower prices for anthracite irons, while charcoal wheel irons are in fair demand and prices firm.

"BUFFALO, March 29. Market inactive. Some small lots have been purchased at about our quotations.

"COLUMBUS, March 31. There has been no change in the condition of the pig-iron market since our report of last week. The demand is still very moderate.

"LOUISVILLE, March 30. The market continues without animation, though with some signs that it has reached the limit of the present reaction. Several lots on the market have been withdrawn, and holders generally have decided to make no more concessions. There is no change in prices.

"MILWAUKEE, March 29. We report not much doing just now in the pig-iron market, caused by a want of confidence in future prices, based upon the idea of great importation and the re-blowing in of so many of our blast-furnaces as a result of high prices. Buyers are inclined to take only what their present orders actually demand, say 1, or at most 2, car-loads at once, until the market has settled to moderate figures. As a result, softening irons, both home and imported, are a little lower, while Lake Superior charcoal holds up well. Quotations the same.

"PHILADELPHIA, March 31. PIG IRON.—The past few weeks, the market has been so unsettled that almost any price would only bring orders in a small way. This continues to some extent; yet some consumers are compelled to buy, or stop their works; and as all consumers of iron have work for some months yet, without taking a single new order, they are compelled to come into the market in a small way. This is now being felt by most producers; hence we may report a firmer feeling the past day or two, and some think, as the month comes in, and the demand increases, as many think it will, we shall have a firm market at present prices, if not again a boom.

MANUFACTURED IRON.—It may be said of bars and shapes, there is little new in the way of orders coming into the market, but all manufactures fell as the season advanced. There is so much work that must be done, and so much iron used, that prices can not come down much. Also, the present high price of labor will make it impossible for American iron to come much below the present price. It is true, English bars in large lots are offered at low prices, but our brothers across the sea are having more work at home, and the lots now offered are so hard to move, it is not likely so much iron will be shipped in the next 30 days as has been in the past. It has got abroad that the iron boom in America is over.

PLATE AND TANK IRON.—The demand for this class of iron is good, and some good orders are floating round. The matter of price is what stops business, and that seems to make most orders come to a stand-still. Consumers will not pay a king price, and makers say they can not come down; and as little of this class of iron is coming or can come from across the sea, the dead-lock can not last, as there are so many orders held in abeyance which must be placed in the next week or two.

OLD RAILS.—The market for old rails is at a stand-still. We do not hear of any sales this week.

MUCK BARS.—The market for muck bars is good, and the demand more lively, as mills having orders are anxious to get them off before a countermand comes that a drop in prices always brings. Hence, they are buying muck bars to help out.

JUSTICE COX, JR., & CO.

RICHMOND, March 29.

"On small orders, this market is active; quotations are difficult to make.

ASA SNYDER.

ST. LOUIS, March 27. Demand is increasing somewhat, but there is no marked activity.

CARD & HOFFER.

JOHN H. AUSTIN & CO.'S SPECIAL MARKET REPORT.

90 CANNON STREET, LONDON, E. C., March 18. STEEL RAILS.—Without alteration. Second-hand parcels still obtainable below makers' quotations, and £9 15s., net cash, c. i. f., to U. S. ports would today be taken.

IRON RAILS.—Same as last quoted.

OLD RAILS.—In slightly better inquiry; some business done in Flange at 120s., c. i. f., New York and Philadelphia; O. D. H., nominally 125s. c. i. f.

HEAVY WROUGHT SCRAP-IRON.—No inquiry, unless at 45 5s. @ 45 10s., c. i. f.

BESSEMER PIG-IRON, NOS. 1, 2, AND 3.—Very quiet at 45 per ton and upward, f. o. b. English ports.

SCOTCH PIG-IRON.—Still dull, and fluctuating between 57s. @ 57s. 6d. for prompt cash.

MIDDLESBROUGH PIG-IRON No. 3.—Flat, in sympathy with Scotch; price, 53s. 6d. @ 54s. prompt, f. o. b.

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 (Mar. 27, Mar. 29, Mar. 30, Mar. 31, Apr. 1, Apr. 2), and 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 (Mar. 27, Mar. 29, Mar. 30, Mar. 31, Apr. 1, Apr. 2), and SALES.

g. Gold. s. Silver. l. Lead. c. Copper. * Non-Assessable. † Assessment paid. ‡ Total dividends paid to date 140,110.00. § Ex dividend. Total sales sold during the week, \$9,088.

FINANCIAL.

Gold and Silver Stocks.

NEW YORK, Friday Evening, April 2.

The week under review has been a very quiet one, and prices have, almost without exception, been weak. The greatest dullness of the week existed to-day. We do not think, however, that the public is losing interest in mining. The new Mining Exchange, it is expected, will be in operation in about a month, and some new life may be looked for through the energy of the experienced hands who largely compose this body.

We publish, in this number of the JOURNAL, Dr. Raymond's report upon the Little Pittsburg mine. He demonstrates clearly that his previous report was very accurate, and indicates that there are yet great possibilities of future large returns to be secured by the opening of the undeveloped portions of the company's property. The losses that the public have sustained in this stock should teach it that when the report of a competent and reliable expert is obtainable, it should be made the basis for an investment; and that the exaggerated expressions of promoters should not be relied upon. Dr. Raymond's report does not give the stockholders any assurance of future profits, yet the indications of further discoveries of ore are sufficiently strong to make it advisable for those now holding the stock to have a little patience and see what the developments under his advice may expose.

The Comstock shares still continue quiet and weak. California sold from \$3.05 down to \$2.80, the transactions amounting to 2675 shares. Consolidated Virginia records sales of 3340 shares at \$3.35@3. Consolidated Imperial has been unusually quiet, and to-day was entirely neglected; the sales amount to but 500 shares at 48@42c. On Monday, 100 shares of Kossuth sold at 16c., and to-day 400 shares of Leviathan at 30c. On Monday, 10 shares of Union Consolidated sold at \$36½. The Bodie stocks have been quite active. Bodie sold on Saturday at \$7.25. On Wednesday, it reached \$10.50, owing to the announcement of another strike in the mine; since then, it has declined to \$9¼; the sales amount to 3815 shares. Standard has been very active and somewhat weak; the sales amount to 5950 shares at \$32¼@30½. Bechtel has been quiet, the sales amounting to but 660 shares at \$1.75@1.90. Bulwer has been quiet and weak, the sales amounting to 1420 shares at \$9@8. Consolidated Pacific has shown more activity than for a long time past; the sales amount to 1295 shares at \$2.25@2. Goodshaw, although neglected during a portion of the week, was dealt in to the extent of 2650 shares at 29@40c. To-day, 170 shares of May Belle sold at 23@24c. South Bodie has been quite active and weak, the sales aggregating 8400 shares at 67@40c. South Bulwer has had the same features; the sales aggregating 10,125 shares at \$1.10@55c. The sales of Tioga amount to 385 shares at \$2@2½.

The Tuscarora stocks show a very liberal business. Belle Isle records sales of 1660 shares at \$1.10@95c. On Monday, 100 shares of Grand Prize sold at \$1.50. Independence has had a very fair business, the sales amounting to 3240 shares at \$1@92c. Martin White has had straggling sales, aggregating 800 shares, at 40@35c. The sales of Navajo aggregate 2000 shares at 20@25c. Tuscarora has been quite weak; the sales amounting to 4100 shares at 40@30@40c.

Among the miscellaneous stocks, we note dealings in Eureka amounting to 1245 shares at 19¼@18½. On Monday, 100 shares of Raymond & Ely sold at 75c. Caledonia (B. H.) records sales of 400 shares at \$3.05@3. The dealings in the stocks of the regular lists have been as follows: Amie Consolidated made its first appearance at the New York Stock Exchange on Monday, opening at \$2.50; the same price ruled on Tuesday, while on Wednesday it was "bounced" up to 2½, and since then there have been no transactions; the sales for the week aggregate 700 shares. Caribou has had a little more activity, the sales amounting to 1525 shares at \$3@3½. Climax has been very active, and quite weak, the sales amounting to 19,445 shares at \$1¼@2.55, showing more strength the last days. The sales of Deadwood amount to but 130 shares, at \$16½@19; and of Excelsior 10 shares, at \$20½. Findlay has been quite active at 61@66c., the sales aggregating 11,800 shares. Great Eastern has had a very large business, with but slight fluctua-

tions; the sales amount to 52,700 shares at 46@52c. Green Mountain records an active business, with firm prices; the sales amounting to 7410 shares at \$3.10@3.35. Homestake has been dealt in to the extent of 156 shares, at \$33@34. Hukill has been weak, with but a moderate business; the sales amount to 8800 shares at \$3.15@2.85. Leadville has fluctuated within small limits, and the sales have amounted to 6055 shares at \$3.10@3.30. Little Pittsburg has had but a moderate business as compared with a few weeks past, and has been somewhat weak; the sales amount to 10,298 shares at \$9½@8. Moose has been quite active and stronger; the sales amount to 21,450 shares at 94c.@1.30. The sales of New York & Colorado amount to 650 shares at \$1.50@1.60. Plumas is again attracting attention, and shows some strength; the sales amount to 1650 shares at \$2@2.35. Central Arizona was without transactions during three days of the six, and during the remainder the sales amounted to 1950 shares at \$7.50@7.25. The Mariposa stocks have been very quiet; the sales of Preferred amount to 300 shares at \$3.30; of Common, 100 shares at \$3@2.75. The sales of Quicksilver amount to 600 shares at \$70@66. Rappahannock has been only moderately active and quite weak; the sales amount to 14,300 shares at 37@32c. Shamrock has been quiet; sales amounting to 1150 shares at \$1@1.15. The business in Silver Cliff has been small and prices weak; the sales amount to 2980 shares at \$6¼@5½. South Hite has been quite active and somewhat irregular, the sales amounting to 14,200 shares at \$2.45@2. Sutro Tunnel has had but a moderate business, at prices somewhat weak; the sales amount to 8419 shares at \$3@2½.

In the fancies, Gold Placer has been the feature, the sales amounting to 46,279 shares at 93c.@1.10; dealings in the others have been as follows: American Flag, 14,250 shares at 55@64c.; Buckeye, 66,500, at 52@60c.; Dahlonega, 21,000, at 18@16c. Granville, 12,400, at 29@26c..

We call attention to the card of the New York Mining and Developing Company, which appears among our advertisements. This company is formed with a strong board of directors and a liberal capital and is likely to prove of great service in the advancement of legitimate mining enterprises.

The Dahlonega Gold Mining Company has issued a circular to its stockholders announcing a meeting on the 30th inst., for the purpose of increasing the capital stock to raise funds to extend the company's ditch.

Under date of April 1st, the Secretary of the new Mining Exchange has sent out the following circular to members:

"You are hereby notified that a meeting of the elected members of American Mining Stock Exchange will be held on Wednesday, April 7th, 1880, at Room 15, 115 Broadway, at 12 m., for organization. You are respectfully requested to attend. The receipt for admission fee and one year's dues will entitle you to participation in the meeting."

This organization, it is said, has secured the ground floor of No. 63 Broadway as an exchange.

OFFICIAL LETTERS.

Amie.—A telegram from this mine, under date of March 30th, says: "Seven tons of first-class ore and 5 tons of second-class ore, worth about \$1000, were shipped to-day. Will do better to-morrow. Have struck ore north of all previous developments. Can't say how big, but it looks well. Second contact is more promising."

Atta-Montana.—A dispatch from Wickes, Montana, March 31st, says: "Small smelter made in four days \$3700. Will fire up large twenty-five-ton smelter to-day. All the tunnel in ore and looking well."

Barcelona.—A telegram dated Belmont, Nev., April 2d, says: "Raising from 5 to 10 tons ore a day from south drift of Barcelona; average assays \$106.73 per ton. Everything looking well."

Bull-Domingo.—A recent letter from this mine says: "The mine is looking unusually well in all parts, and the amount of ore now taken out averages nearly as much as ever. The machinery will soon be in running order. The weather is quite fine. The last of another 100 tons of ore has just been shipped. The station at the 150-foot level is now completed, and drifting has begun toward the main ore-body. The ore becomes richer as depth is attained. It is stated that the company has ample funds for beginning dividends, and that a dividend of 30 cents per share will soon be declared."

Big Pittsburg.—A telegram from the superintendent of this mine, received yesterday, states that the Lent

shaft was doing well. The McCormick drift had struck a vein of iron, which was considered encouraging. The rich strike in the Amie was confirmed, and a good body of iron was exposed in the bottom of the Keene.

Bodie.—A dispatch from this mine, dated March 30th, says: "In the incline from the fourth level of the Bodie mine, a vein has been struck which is two feet wide, giving average assays of \$229 per ton. This discovery was made eighty feet below the 700-foot level in the Standard, and is considered of much importance."

Bulwer Consolidated.—A recent letter from this mine says: "The north drift on the Ralston vein had gone in 125 feet, showing a ledge of good ore three feet wide. The south drift was in 119 feet from the tunnel, having a two-foot ledge. The Stonewall ledge was two feet wide; the ore was rich; and in the stopes on the Ralston vein the ledge was four feet wide, of good milling ore. Bar No. 15, value, \$10,900, the first from the Bulwer-Standard mill, was shipped March 15th."

Bassick.—This company has decided to put up concentrating works at its mine immediately. There is now on the dump a large quantity of ore awaiting treatment, while the ore-reserves in the mine are increasing every day. The three-compartment working shaft is being sunk at the rate of one foot per day. The proportion of telluride ores increases as depth is attained. The shaft is down 180 feet below the tunnel level.

Chrysolite.—We append telegrams received from the superintendent of this mine for various dates as under:

March 23th.—The bottom of Chrysolite shaft No. 4 is now in hard-blasting iron or low-grade ore; the thickness at this point promises to be very great. Roberts first level continues looking exceedingly well. We shipped 141 tons to-day to smelters; total 3507 tons from March 1st to 26th. Southeast of shaft No. 3, has 42 feet of sand carbonate. Cash received this week from the sale of ore, \$38,765; total cash received this month, \$202,832.

March 30th.—Chrysolite No. 4 has 12 feet chloride sand. Shipped 151 tons. Up to 26th, 3507 tons shipped.

Telegram of 1st inst. reports strike in Eva shaft of solid galena. Shipped 105 tons.

Climax.—A telegram from Leadville, dated March 31st, reports that a good body of rich ore has been struck in this mine.

Calaveras.—A letter received from the superintendent of this mine, dated March 23d, says: "We are now running as usual. The second monitor is in place. We shall clean up April 1st, or about that time. During the next three months, we shall get the mine fairly opened, and get into blue gravel."

Caribou.—A telegram from the superintendent of this mine, dated March 31st, says: "I ship you to-day 5000 ounces of silver bullion. The Caribou mill is kept running night and day up to its full capacity on rich ore, which the mine supplies in excess of the mill to treat. The ore from the bottom of the main shaft shows large quantities of ruby silver running from 200 to 300 ounces per ton. The company is now shipping from 5000 to 6000 ounces per week."

California Water and Mining Company.—A dispatch dated San Francisco, Cal., April 1st, received at the New York office, April 2d, 12 m., says: "Possession of entire property of the California Water and Mining Company has been transferred to the California Water and Mining Company. Complete inventory being made. I go to Georgetown to-night." This puts this company in complete possession of its 257 miles of water-ditches, canals, flumes, saw-mills, and other property.

Homestake.—The superintendent of this mine reports, under date of March 20th: "Everything about the establishment is running well. At the vertical shaft, we are sinking and are now down 40 feet below the 100 level. Average sample from bottom of shaft went \$12 yesterday and \$16 per ton to-day. At all other points the mine looks well."

Iron Sileer.—A telegram dated April 1st says: "The face of the fifth level north in the mine is now in fine ore. The drift connecting the third and four levels shows five feet of ore."

"Mines looking as usual. Shipped one hundred and two (102) tons."

Little Chief.—A letter, dated March 27th, says: "The sand carbonate in face of north drift from shaft

IV. shows indications of pitching to the north. The winze bottom is still in iron. East drift or cross-cut still in sand carbonate. We have started an east cross-cut 30 feet north of the station in sand carbonate. We have stopped north drift from Shaft III. until drift from Roberts' shaft connects. Shaft VII., ore-body looking well. Bottom Daly shaft in tough clay, down 104 feet, and the water has diminished. Total shipped from March 1st to 27th, 2774 tons, amounting to over \$130,000.

"April 1.—The Daly shaft struck iron boulders. In shaft No. VII., ore is opening up largely. Shipped 77 tons to smelters to-day."

Leadville.—It is reported that a fine body of ore was struck in this mine yesterday.

Deadwood.—This mine is running sixty stamps constantly, and crushing from 150 to 175 tons of ore per day. The ore is taken principally from an open cut, which has a face on the ledge 100 feet wide by about 120 feet high. This cut is being driven into the mountain, and with such an enormous body of ore exposed, the taking of 150 tons per day makes little impression. It is said that at least 60, and perhaps 120, new stamps will be added to the mill capacity of the mine during the coming summer.

Dunderberg.—A recent letter from the superintendent of this mine says: "I intended suspending the second and fourth drifts, but on taking down the lode found a considerable improvement. The fourth drift shows three inches of high-grade ores, and looks as though it was about to develop a good course of ore. The lode is better defined than it was. The third level drift carries a solid vein of ore one foot wide. The second level drift contains six inches of quartz spotted with lead and a good deal of iron, and in the back carries two inches of solid ore. 'A' level drift carries a solid vein of galena, iron, and zinc, ten inches to one foot wide. I sold to-day over 5 tons of ore, assaying 176 ounces. The jigs will be ready for the iron work during the next week. The stopes are yielding well generally, and I shall endeavor to ship from 25 to 30 tons next week."

Green Mountain.—A dispatch from H. C. Bidwell, dated March 29th, says:

"There are 10 feet rich ore in the face of the drift. Its total length is 230 feet. The mine is to-day worth \$1,000,000. Hold me responsible for this. Ten thousand dollars in amalgam on hand for March."

Prof. Blake writes to the secretary that the height of back in new shoot is 700 feet above lower level. The latter has been vigorously pushed since the Professor's visit to the mine.

Great Eastern.—The superintendent of this mine telegraphs, under date of March 25th, that they had "cleaned up" a twelve-days' run, showing \$2000 net profit. The company took possession of its new purchase, the Flora Belle mine, on that date.

Great Baltic.—Recent letters from Austin, Nevada, speak in the highest terms of the value of the properties owned by this company. The mine has been developed to some extent. About \$10,000 have been expended in prospecting the ledge. A tunnel is driven in about 140 feet, and cuts the vein 75 to 80 feet from the surface, disclosing a vein over 12 feet wide, with no hanging-wall in sight. The Silver Cliff mine, also one of this company's properties, has an incline sunk 175 to 200 feet deep, from which a considerable amount of ore was taken, that averaged, by mill treatment, \$180 per ton.

Standard Consolidated.—The weekly report of the superintendent of this mine announces the shipment of two additional bars of bullion, valued at \$45,836, making a total of bullion shipments, to March 21st, of \$68,103. Very favorable reports are made of the appearance of the mine in the various shafts, winzes, upraises, and levels, which have been steadily advanced during the month, showing in some cases a breast of as much as five or six feet of ore. The stopes throughout the mine are represented as looking as well as usual, which, with the past record of the mine, is certainly all that could be asked. The work on the new shaft is still proceeding satisfactorily.

Silver Era.—Orders have been issued by the directors for the immediate reconstruction and enlargement of this company's mill at Globe City, Ariz., for continuous use during the erection of a stamp-mill at the mines. A letter just received reports that in the mine bodies of rich ore appear as the shafts go down and the tunnels are extended.

Silver Cliff.—A telegram, dated yesterday, from

this mine, states that the mill was stopped for a clean-up. Of the ore crushed during the preceding five days, the pulp assayed 44½ ounces; the saving being 73 per cent.

Tilden.—This mine, which is located on Boulder Mountain, Chaffee County, Colorado, is under a highly respectable management. The area embraced in the company's property is not given. It consists certainly of one location and a mill-site. The vein is a contact, with a granite foot-wall and porphyritic hanging-wall. The development is stated to consist of an incline plane, 155 feet deep. At a depth of 100 feet, drifts north and south have been run 40 and 73 feet respectively. The last shows 2½ feet of good ore. The incline is in ore all the way. The north drifts show some good ore. South of incline 200 feet, a tunnel is in 75 feet, where the vein was cut, and incline of 25 feet deep sunk in it. An average of 30 sample assays shows 110 ounces of silver and 33½ per cent lead.

Winnabago and O. K.—The manager of these mines writing from San Francisco under date of March 24th, says: "Since last report, have advanced drift on first level west 4½ feet; total distance from shaft 321 feet. Am working men on second level, stoping, but will soon be obliged to stop them for want of space for rock. Our shaft-house, 22 x 50 feet, is up, and the gallow's frame will be raised to-morrow, and our engine will probably be finished about the 26th. Mine looking well, and every thing promises favorably."

La Plata.—This mine is producing about ten tons daily, and the smelting works are handling from 125 to 140 tons per week. For week ending March 24th, the value of bullion shipped is said to have amounted to over \$92,000.

Lowland Chief.—There are reported important strikes in this company's property. Development is being vigorously pushed in the lower shafts with a view of reaching the large ore-body of the Highland Chief as early as possible.

Mohave.—The treasurer of this company telegraphed yesterday that the Baden shaft at tunnel's mouth was down 22 feet, and that the ore assayed \$89 gold and \$25 silver per ton, with the vein widening. This is a new shaft sunk since Mr. Chapin's arrival, and, it is claimed, more than confirms previous estimates of the value of the mine.

Plata Verde.—A telegram from the general manager of the mine states that a large body of mineral has just been opened in the south shaft, which is rich in horn-silver.

The company is now making preparations to run a tunnel into Round Mountain, a distance of two hundred feet from their present workings, which will be about four hundred feet from the apex of the mountain. The work will be begun at once and completed within three months, at which time it is expected their mill will be in operation.

Red Elephant.—This company reports by telegraph from Georgetown, Colo., April 1st, that it has over 200 tons good ore on hand, and will commence shipping to-day. Have run 40 feet of connections recently. Will ship daily from 30 to 40 tons. The new drift will connect Boulder Nest and Free America with the White.

Robinson Consolidated.—Robinson reports by letter, March 25th, shipment that day of twenty-four loads of thirty-nine tons. Another roaster will be fired on the 26th. Three more ready. Tunnel seventy feet deep.

Spring Valley.—The first official letter from the superintendent of this mine states that the \$10,000 nugget gold, for which the company telegraphed in order to have on hand as specimens, had been converted into bullion. Changes which have been made in the pipes are expected to increase the new clean-up by at least \$20,000, making it \$125,000. The clean-up of the last seventy days from this property amounted to \$150,000, or \$1300 a day. The yield, after the first year, with the additional improvements now contemplated and under way, will give from 30 to 40 per cent dividends per annum. Orders are now coming from London for this stock. The area owned by this company, some 1200 acres, is sufficient to be worked by the company for nearly a century to come, with results similar to those above noted.

REVIEW OF THE SAN FRANCISCO MARKET.

With but few exceptions, the San Francisco market opens to-day at the worst prices of the week. The most noteworthy feature to be observed in the list is

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

NAME OF COMPANY	CLOSING QUOTATIONS.					April 1.	Open- ing, April 2.
	Mar'h 26.	Mar'h 27.	Mar'h 29.	Mar'h 30.	Mar'h 31.		
Alpha.....	73½	71¾	71¾	71¾	71¾	71¾	71¾
Alfa.....	38½	38½	38½	38½	38½	38½	38½
Argenta.....	21-32	21-32	21-32	21-32	21-32	19-32	19-32
Bechtel.....	1¾	1¾	1¾	1¾	1¾	1¾	1¾
Belcher.....	5¼	4	4	4	4	3¾	3.80
Belle Isle.....	1¼	1¼	1¼	1¼	1¼	1	1
Belvidere.....	2¼	3	3	3	3	3	3
Best & Bel.....	9¾	9¾	9¾	9¾	9¾	10	9¾
Blackhawk.....	29-32	29-32	29-32	29-32	29-32	27-32	27-32
Bodie.....	7¾	9	9	9	9	11	10¾
Boston Con.....	31-32	1¾	1¾	1¾	1¾	1¾	1¾
Bullion.....	38½	38½	38½	38½	38½	38½	38½
Bulwer.....	8	7¾	7¾	7¾	7¾	7¾	7¾
Caledonia.....	1¼	1	1	1	1	1	1
Cal. B. H.....	2¾	2¾	2¾	2¾	2¾	2¾	2¾
California.....	3	3	3	3	3	2¾	2¾
Chollar.....	5¼	5¼	5¼	5¼	5¼	5¼	5¼
Con. Imp.....	¾	7-16	7-16	7-16	7-16	7-16	7-16
Con. Pacific.....	3	2¾	2¾	2¾	2¾	3	2.95
Con. Va.....	3¼	3¼	3¼	3¼	3¼	3	2.95
Crown P'int.....	3	2¾	2¾	2¾	2¾	2¾	2¾
Dudley.....	7-16	7-16	7-16	7-16	7-16	11-16	11-16
Eureka Con.....	18¾	19¾	19¾	19¾	19¾	18¾	18¾
Eschschner.....	2¾	2¾	2¾	2¾	2¾	2¾	2¾
Goodshaw.....	11-32	11-32	11-32	11-32	11-32	2¾	2¾
Gould & Cur.....	4¾	5	5	5	5	4¾	4¾
Grand Prize.....	1¼	1¼	1¼	1¼	1¼	1¼	1¼
Hale & Nor.....	5¾	5¾	5¾	5¾	5¾	6	5¾
Hillside.....	13-16	13-16	13-16	13-16	13-16	13-16	13-16
Indep'd nce.....	1¼	1	1	1	1	1	1
Jackson.....	4	4	4	4	4	3½	3½
Julia Con.....	1¼	1	1	1	1	1	1
Justice.....	1¾	1¾	1¾	1¾	1¾	1¾	1¾
Kentuck.....	21-32	21-32	21-32	21-32	21-32	11-16	11-16
Lady Wash.....	21-32	21-32	21-32	21-32	21-32	11-16	11-16
Leeds.....	21-32	21-32	21-32	21-32	21-32	11-16	11-16
Leviathan.....	11-32	11-32	11-32	11-32	11-32	2¾	2¾
Mammoth.....	2¾	2¾	2¾	2¾	2¾	2¾	2¾
Manhattan.....	11-32	11-32	11-32	11-32	11-32	1	1
May Belle.....	13-32	13-32	13-32	13-32	13-32	5-16	5-16
Mar. White.....	21-32	21-32	21-32	21-32	21-32	13-16	13-16
McClinton.....	14	13¾	13¾	13¾	13¾	13¾	14¾
Mexican.....	6¾	7¾	7¾	7¾	7¾	7¾	7¾
Mono.....	1¾	1¾	1¾	1¾	1¾	1¾	1¾
Navajo.....	17¼	16¾	16¾	16¾	16¾	17	17
North Belle.....	5-16	5-32	5-32	5-32	5-32	5-32	5-32
N. Bonanza.....	17¼	17¼	17¼	17¼	17¼	17	17
N. Standard.....	3½	3½	3½	3½	3½	4	4
Noonday.....	17½	17½	17½	17½	17½	17	16
Ophir.....	2	1¾	1¾	1¾	1¾	2	1¾
Orig. K'se's.....	3¾	3¾	3¾	3¾	3¾	3¾	3¾
Overman.....	3¾	3¾	3¾	3¾	3¾	3¾	3¾
Potosi.....	11-16	11-16	11-16	11-16	11-16	9-16	9-16
Ray & Ely.....	1¼	1	1	1	1	1	1
R. de Monte.....	5¼	5	5	5	5	5¼	5¼
Savage.....	5¼	5	5	5	5	5¼	5¼
Scorpion.....	20¼	20	20	20	20	21	21
Seg. Belcher.....	13-16	11-16	11-16	11-16	11-16	¾	¾
Sierra Nev.....	6	6	6	6	6	5¾	5¾
Silver Hill.....	1¾	1	1	1	1	¾	¾
So. Bulwer.....	1¾	1	1	1	1	¾	¾
Summit.....	1¾	1	1	1	1	¾	¾
Syndicate.....	2¼	2¼	2¼	2¼	2¼	2¼	2¼
Tioga.....	4	4	4	4	4	4	4
Tip Top.....	3-32	3-32	3-32	3-32	3-32	3-32	3-32
Trojan.....	35¾	35¾	35¾	35¾	35¾	36¾	34½
Tuscarora.....	3¾	3¾	3¾	3¾	3¾	3¾	3¾
Union Con.....	8	7¾	7¾	7¾	7¾	8	8
Utah.....	8	7¾	7¾	7¾	7¾	8	8
Wales.....	8	7¾	7¾	7¾	7¾	8	8
Yel. Jacket.....	8	7¾	7¾	7¾	7¾	8	8

the marked decline in Belcher, which closed at \$3¾ yesterday, but opens to-day at \$3.80 per share, a decline of one third from the best prices recorded in our last. At this rate, the Belcher mine, with its 3000-foot shaft, with its \$2,000,000, nearly, of assessment work, with its "magnificent prospects," so said, may be controlled for less than \$200,000. It is said that not a prospect has been lost in the deep workings of this mine. On the 2760 level, a vein carrying good ore in bunches has been followed in all 150 feet north and south. It is bordered on the east by a clay seam and appears to make down. Neither is the encountering of hot water regarded with such great expectation of ore strikes as formerly and on the whole we can not but infer that the outlook in the deep Comstock is gloomy. A San Francisco paper of March 20th exclaims: "There will not be a dollar for stockholders in the Comstock lode this month. Taken as a whole, the claims on that lode are not paying expenses just now, and but for assessments, work would have to stop in some cases."

We extract the following as being of interest just now:

"Mr. E. C. Thomas, of the Hale & Norcross (Comstock) mine, has been appointed Superintendent of the Suro Tunnel Company in place of Adolph Suro, who resigned at the last annual meeting, on the 1st inst. The report that Mr. Suro had, early last winter, disposed of his entire interest in the property is not true, as he still owns about two-thirds of his original shares. The principal reason for his resignation was the fact that he had devoted so many years to the work, and desired a rest. Besides, it is not an easy task to make the daily circuit of the tunnel, owing to the intense heat. Mr. Suro has purchased a \$150,000 residence in San Francisco, where he intends to reside, as well as a country-seat at Inwood, on the Hudson."

ECREKA, NEV., March 26.—The Eureka Consolidated Mining Company has brought suit against the K. K. Consolidated Mining Company to recover possession of a cer-

tain portion of the Eureka lode, which, it is claimed, the K. K. Company has for a number of months been working and extracting therefrom large quantities of silver-bearing ore, and sues for \$100,000 damages.

This stock is one of the liveliest on the San Francisco Exchange.

Unlisted Mining Stocks.—The Mining News, of the 2d inst. gives the following latest quotations of the leading stocks not as yet listed on either exchange:

	Bid.	Offered.
Alta Montana, Mont.	2	2½
Barcelona, Nev.	2	2
Basick, Col.	17	17
Big Pittsburg, Colo	12	12
Breece, Colo.	26-10	26-10
Bald Mountain, Colo.	1.70	1.85
Bull-Domingo, Colo.	7¾	8
California Water, Cal.	3	3
Carbonate, Colo.	1½	1½
Carbonate Hill, Colo.	1¼	1.45
Chrysolite, Colo.	26¾	26¾
Cherokee, Cal.	1¼	1.40
Colorado Central, Colo.	2½	2½
Del Monte Con., Colo.	4	4
Duncan, Idaho	4	6
Dunkin, Colo.	3	3½
Dunderberg, Colo.	2.90	3
Durango, Colo.	.60	.90
El Capitan, Nev.	6¼	3¼
Empire, Utah.	8	20
Father De Smet, Dak.	20	20
Freeland, Colo.	5½	5½
Grand Duchess, N. Y.	20	25
Highland Chief, Colo.	20	25
Homer, Cal.	5	5
Horn-Silver, Utah.	17¾	18
Hortense, Colo.	1.90	1.90
Julian, Colo.	3½	5
Kit Carson, Nev.	2	2
Lewiston Hydr., Cal.	2½	2½
Little Chief, Colo.	12	12¾
Madre, Nev.	1½	1½
May Flower, Colo.	2	4½
Native Silver, Colo.	1¾	1¾
New Philadelphia, Nev.	2	2
Phoenix, Ariz.	1¼	2
Penobscot, Mont.	8	9
Plata Verde, Colo.	1.95	2.05
Red Elephant, Colo.	2½	2½
Riverside Tunnel, Cal.	1½	2½
Robinson Cons., Colo.	4½	4½
Rocker, Mont.	3	3
Rollins, Colo.	3	3
Sampson, Utah.	3	3
Silver Chord	3	3
Sir Roderick Dhu, Dak.	1.90	1.90
Standby, Dak.	4	4
Stormont, Utah.	70c	85
Silver Nugget, Ariz.	3¾	3¾
Trinity Hydr., Cal.	2	2
Van De Water, Nev.	1½	2
Winnabago & O. K., Colo.	1½	2

Assessments, with dates when delinquent: North Bonanza, 25c., April 24th; Navajo, 10c., April 23d; Tioga, 20c., and Monte Cristo, 10c., May 8th; Empire (Tulare County), 5c., April 23d; Rainbow (Sierra County), 10c., April 28th; Equitable Tunnel (Utah), 10c., April 30th; and Kennedy (Amador County), \$1, April 26th; Martin White, 50c., April 28th.

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 1st inst.:

Stocks.	Open-ing.	High-est.	Low-est.	Final.	Sales Shares.
Argenta.....	\$1.35	\$1.45	\$1.30	\$1.30	7,060
Bechtel.....	1.80	1.90	1.75	1.90	1,800
Bockeye.....	.55	.57	.54	.54	4,200
Bodie.....	7.50	9.00	7.25	9.00	4,700
Belle Isle.....	1.00	1.05	.95	1.00	3,100
Buena.....	.50	.50	.50	.50	3,750
Cons. Imperial.....	.48	.50	.41	.43	2,600
California.....	3.05	3.10	2.90	2.90	2,200
Cons. Pacific.....	2.15	2.15	2.00	2.00	1,500
Cons. Virginia.....	3.40	3.40	3.40	3.40	200
Danlness.....	.50	.50	.45	.45	2,100
Dahlonega.....	.17	.17	.17	.17	100
Eureka.....	18.10	18.15	18.10	18.15	300
Findley.....	.60	.62	.61	.62	7,300
Girard.....	2.15	2.15	2.10	2.15	2,300
Gold Placer.....	.82	.85	.82	.83	1,200
Granville.....	.30	.30	.29	.30	4,000
Hukill.....	3.00	3.05	3.00	3.00	700
Iowa Gulch.....	1.00	1.05	.90	.90	28,900
Independence.....	.95	.95	.93	.93	1,700
Lucerne.....	.23	.23	.23	.23	300
Leadville.....	3.15	3.25	3.15	3.25	600
Lacrosse.....	.48	.48	.48	.48	100
Martin White.....	.40	.45	.35	.35	1,800
Mount Sheridan.....	.95	.95	.95	.95	100
Navajo.....	.22	.24	.22	.22	100
Orion.....	2.25	2.25	2.00	2.00	1,450
Rara Avis.....	.60	.65	.60	.60	3,500
So. Hite.....	2.30	2.30	2.20	2.30	1,400
Shamrock.....	1.05	1.20	1.50	1.05	1,300
Sutro Tunnel.....	2.90	3.00	2.85	3.00	300
Tioga.....	2.50	2.50	2.50	2.50	300
Total sales.....					88,260

Copper and Silver Stocks.

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

Boston, April 1.

The market for copper stocks ruled dull and heavy during the early part of the week, with a decided decline in prices, owing to the lower quotations for ingot, combined with the state of the money market, which had a tendency to frighten weak holders, who threw their stock upon the market, and thus aided the decline. The market recovered somewhat yesterday and closes up strong to-day, with an advance in nearly all the leading specialties, and we feel confident that higher prices will prevail during the present month.

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of \$100. Philadelphia prices are quoted, so much per share.

NAME OF COMPANY.	Capital Stock.	SHARES.		Last Dividend.	Rate per Ann.	Quotations of New York stocks are based on the equivalent of \$100. Philadelphia prices are quoted, so much per share.												SALES.
		No.	Par Val.			March 27.		March 29.		March 30.		March 31.		April 1.		April 2.		
						H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am. Coal Co.	1,500,000	60,000	25	Mo. Y. R't.	Per cent													
Buck Mt. Coal	100,000	100	50															33
Col. C. & I. Co.	10,000,000	100,000	10		4½	40½	42½	40½	42½	41	40¼	40						4,065
Ch. & O. RR	15,000,000	150,000	100		23½	23½	23½	23½	23½	23½	23½	24	23¾	24	24¼	24		6,527
Consol. Coal	10,250,000	102,500	100	Jan. 77	2½							35	35	35	35			450
Cumb. C. & I.	500,000	5,000	100									60	62	60	60			109
Del. & B. C.	20,000,000	200,000	100	Aug. 76	4	9	8½	8½	80	85	83½	86	85	86	85½	86	85½	15,905
D. L. & W. RR	25,000,000	250,000	50	July 76	2½	5	62½	62½	94½	93	94½	93	94½	94	93½	94½	93	81,619
Lehigh C. & N.	10,148,550	208,971	50	Sept. 76	1½	5	27½	27½	37	37½	37½	37	37½	37½	37½	37½	37½	3,907
Leh. V. Y. R. R.	27,228,855	540,858	50	Sept. 79	1	4	51¾	51¾	51¾	51	51¾	51	51¾	51¾	51¾	51¾	51¾	2,193
Mary'd Coal	4,400,000	44,000	100	Jan. 76	1½	1½												30
Montauk C.I.	2,500,000	25,000	100			50												400
Morris & Es'x	15,000,000	300,000	50	July 79	3½	7	108	108	107¾	108		108		108	107¾	108		1,385
New Cen. C.I.	5,000,000	50,000	100	Jan. 70	2	3	34	33½	36	34	34							3,400
N. J. C. R. K.	20,000,000	200,000	100	Apr. 76	3½	85½	84	85	84½	85½	84½	85½	84½	85½	85½	84½	85½	12,678
Penn. Coal.	5,000,000	100,000	50	Oct. 79	3	210												61
Penn. R. R.	68,870,200	1,337,404	50	Nov. 79	2½	10	52	51½	52	51¾	52	51¾	52	52	52	52	52	27,228
Ph. & E. R.	31,278,175	685,563	50	Jan. 76	2½	10	69½	68½	69½	69½	70		70	70	70	70	69¼	38,090
Spring Mt. C.I.	1,500,000	30,000	50	Dec. 79	3½													
Spruce H. C.I.																		

* Of the sales of this stock, 25,250 shares were sold at the Philadelphia Stock Exchange, and 12,840 at the New York Stock Exchange.

Total Sales..... 198,116.

BOSTON MINING STOCKS.

NAME OF COMPANY.	Shares.	Par.	March 26.		March 27.		March 29.		March 30.		March 31.		April 1.		SALES.
			H.	L.	H.	L.	H.	L.	H.	L.	H.	L.			
Allouez, c.	Mich.	20,000	\$25		19	18½	18						17½	205	
Atlantic, c.	Me.	40,000	\$25		21								22	800	
Atlas	Mich.														
Aztec					1¾				1½				1¾	400	
Blue Hill, c.	Me.	50,000	10		10	10¼	17		17½	17	18	17½	18	350	
Brunswick	Me.													692	
Cal. Hecla, c.	Mich.	100,000	25											20	
Catalpa	Colo.				23-16	2½	21-16	2½	21-16	2½	21-16	2½	21-16	2	5,075
Central, c.	Mich.	20,000	25												
Chrysolite, Colo.															
Copper Falls, c.	Mich.	20,000	50		12¼	12	11½				12			185	
Copp'r Harbor, c.	Mich.	20,000	25												
Dana, c.	Mich.	20,000	25		75c.		75c.							200	
Douglas, c.	Me.	100,000	5												
Duncan, s.	Ont.	60,000	20								3		3	100	
Franklin, c.	Mich.	20,000	25		19	18	19	18	19	18½			21	1,725	
Great Western	Mich.	20,000	25												
Hanover	Mich.	20,000	25												
Harshaw	Ariz.	100,000	100				21							100	
Humboldt, c.	Mich.	20,000	25												
Hungarian, c.	Mich.	20,000	25												
Huron	Mich.	20,000	25		7½	7	8	7½	8	7½	8½		9	8½	1,081
International, s.	Ont.	60,000	20												
Madison	Mich.	20,000	25												
Manhattan, c.	Mich.	20,000	25												
Mesnard, c.	Mich.	20,000	25										2½	100	
Minnesota, c.	Mich.	20,000	25										3¼	100	
National, c.	Mich.	20,000	25										3¼	100	
Orford	Can.	50,000	20												
Osceola, c.	Mich.	40,000	25												
Pewabic, c.	Mich.	20,000	25			28			28½				25	850	
Phoenix, c.	Mich.	20,000	25												
Phatic, c.	Mich.	20,000	25												
Ridge, c.	Mich.	20,000	25			6½		6½			6½		7½	7	350
Rockland, c.	Mich.	20,000	25			62½c							75c.	200	
Quincy, c.	Mich.	40,000	25			35			34¾	34	35¾	34¾		835	
Superior						82½c								100	
Silver Islet, s.	Mich.	40,000	25			12½		14	12	13	12¾	13¾	14½	14	348
So. Hite, g.	Cal.	100,000	25						2½	2¼			2½	200	
Star, c.	Mich.	20,000	25										2½	225	
Sullivan, s.	Me.	50,000	10			12		12½		12			12	115	
Sutro Tunnel	Nev.		25												
Union L. & C. Co.	Mich.														
Washington, c.	Mich.	20,000	25												
Waukeag						7½								200	

c. Copper. s. Silver. * 2,000,000.

Calumet & Hecla declined from 246 to 237, closing at 237½.

Central sold at 40, closing at 35 bid; none offered.

Copper Falls declined to 11½, but closed in demand at 12½ bid, 13½ asked.

Franklin declined from 19½ to 18 on the 29th. At this point the market rallied, and all the stock offered was freely taken, advancing the price to 21 to-day, closing at 20½@2

the same as those of the preceding week; the transactions in this market have amounted to 12,840 shares, at 70 1/2 @ 68 1/2.

There have also been sales of 4095 shares of Colorado C. and I. at 42 1/2 @ 40; 450 shares of Consolidation Coal at 35; 100 shares of Cumberland C. and I. at 60 @ 62; 3400 shares of New Central Coal at 36 @ 33 1/2; 61 shares of Pennsylvania Coal at 21; and 30 shares of Maryland Coal at 22.

In the Philadelphia market, the principal transactions have been in Pennsylvania Railroad and Reading. In the former, the dealings have amounted to 27,234 shares at 51 1/2 @ 52 1/2, and in the latter 25,250 shares.

Our attention has been called to the efforts of the Maryland Union Coal Company to secure a position on the list of the New York Stock Exchange. We should regret to see the committee having the matter under consideration admit this stock, as we believe that it will be detrimental to our coal-mining interests. In the first place, the company is capitalized far beyond its actual value. According to the best information obtainable, the company has but about two hundred acres of the large vein, and, although it may own additional lands containing smaller veins, yet they will not be available until the other companies have practically exhausted their large vein. The company claims to have a capacity at the present time of 450,000 tons per annum, and say that at a little expense, they would be able to increase the output to 750,000 tons per annum. As the large vein in the Cumberland region carries but 10,000 tons to the acre, the company would have but 2,000,000 tons of this coal, or but a three-years' supply. Although the company claims to have a capacity of 450,000 tons per annum, during the last ten years the average product of its mines has been about 129,000 tons. We are told that some parties have been admitted to the deal at \$30 per share, which is called "hard pan." As this is at a rate of 50 per cent higher than the present market price of the Maryland Coal Company, we think the "insiders" are getting about as badly punished as they expected the public to be, and we hope that the stock will stick where it now is. It has also been intimated that it was the intention to put this stock on the market at \$50 per share, equal to \$2,500,000 for the property, which, in point of valuation, would be among the highest in the Cumberland region, while in fact it should be almost the reverse.

Gas Stocks.

NEW YORK, Friday Evening, April 2.

The market for gas stocks is strong and active, and we advance the quotations of many of the companies, notably the Manhattan, whose stock shows an improvement of 5 per cent. The stock of the Municipal Company is now selling ex privilege of new stock.

The Baltimore Sun of to-day says of the market in that city:

"Gas stocks are firm, under a more active demand. Late on Wednesday, Baltimore Company's stock sold at 180, and closed yesterday nominally at 176 @ 185, though 180 was freely bid before the Board assembled. People's was steady at 24 1/2 @ 24 3/4, with sales at the inside figure, and Consumers' stock sold at 7 1/4, closing at 7 1/2 @ 7 3/4."

The following list of companies in New York and vicinity is corrected weekly by GEORGE H. PRESTISS, Broker and Dealer in Gas Stocks, No. 24 Broad street, New York.

Table with columns: COMPANIES IN NEW YORK AND VICINITY, Capital Stock, Par, Rate per ann., Am. of last, Date of last, Bid, As'd.

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 1st inst., are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

Table with columns: STOCKS, Par Value, High'st, Lowest, Closing, Sales: Shares.

Table with columns: BONDS, Princ'l. When Due, Int'est. When Due, High'st, Lowest, Amount.

THE BULLION MARKET.

NEW YORK, Friday Evening, April 2.

The market has varied very little during the past week, and seems steady at present figures, but without any indication of importance.

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

Table with columns: DATE, Pence, Cents, DATE, Pence, Cents.

BULLION SHIPMENTS.

We give below a statement showing the latest published bullion shipments, in addition to those announced in our issue of March 27th:

Table with columns: Mch. 1. Alley mine, 11. Dutch Flat, 35 tons ore, 13. Brooks, 2 cars; Morgan, Old Telegraph 2; Germania, 3; Brooks, 1; Utah, 17,580, etc.

Table with columns: Mch. 18. Hickey mine, 19. Christy, 20. Richmond, 20. Union Consolidated, 20. Consolidated Virginia, etc.

ARIZONA. The superintendent of the Tombstone Mill and Mining Company (Arizona) reports that the production of the ten-stamp mill for the month of February was \$38,662; expended \$17,468; net yield, \$22,194. He started fifteen more stamps on the 20th. He reports by telegraph that an important strike has been made in the Good Enough mine.

The gross annual yield of the Tiger mine, with present appliances, is estimated at over half a million of dollars.

CALIFORNIA. The superintendent of the Standard Con. mine, Bodie, reports that the total bullion shipment for the first 21 days in March were \$68,103.

On March 22d, Wells, Fargo & Co. shipped the following quantities of bullion from Bodie: Standard Consolidated, \$22,703; Bulwer, \$8620; Bodie, \$5317; Miner's Mill (old Bodie dump), \$3329; total, \$39,971.

Table with columns: Standard Consolidated, Bodie Consolidated, Bulwer Consolidated, The Noondays, Mono County Bank.

The shipments of Bullion from Bodie from March 1st to March 22d were as follows:

The shipments from the Mono County Bank were principally the product of the old Bodie dump.

A recent dispatch from Bodie states that the Standard shipped \$44,500; Bulwer, \$7800; Bodie, \$6500; and Noonday, \$3800. The Bodie, in the incline on the fourth level, struck a vein two feet wide, giving average assays of \$229. This strike is 80 feet below the 700 level.

COLORADO. Ore that runs only \$50 per ton is conveyed 150 miles to Denver, and smelted at a good profit.

The Caribou Consolidated Mining Company, of Grand Island District, Boulder County, has resumed its regular weekly shipment of silver bullion. This company, it will be remembered, sustained great loss in the forest fire which swept over its property last September.

The Caribou Mining Company received notice on March 30th of the shipment of 5000 ounces of silver bullion, making a total shipment of about 20,000 ounces in March.

The La Plata mine is producing about ten tons daily, and the smelting works are handling from 125 to 140 tons per day. For week ending March 24th, the value of bullion shipped amounted to over \$92,000.

The Little Chief, on the 25th ult., shipped 105 tons of ore, and the Chrysolite 138 tons; total, March 1st to March 25th, 3376 tons.

The Morning Star mine, Leadville, in 1878 received from ore a net return of \$747.70. In 1879, it was \$283,591. Other claims now included in consolidation returned about \$80,000. The net cash receipts for the year have been \$215,000.

The average daily output and shipment of ore to the Leadville smelters is very nearly 700 tons from the local mines and those who market their ore to the Leadville smelters, or a weekly production of nearly 5000 tons. Among the mines contributing to this production are the Chrysolite, 150 tons; Little Chief, 115; Dunkin, 7; Robert E. Lee, 40; Climax, 20; Carbonate, 25; Morning Star, 60; Colorado, Prince & Ely, 5; Crescent & Ely, 5; Long & Derry, 10; Penderly & Glass, 10; Iron mine, 40; Evening Star, 15; Catalpa and Luella, 5 each; Virginus, 3; Smuggler, 8; Silver Wave, 10; Little Ella, 5; Highland Chief, 20; Argentine, 10; Little Giant, 15; Oro La Plata, 20; Lulu and Miner Boy, 5 each; Double Decker, 3; Tuscan, 10; and Robinson, 30. Others, small producers, are not mentioned as only bringing the aggregate up to nearly the figures above mentioned. Thirty furnaces were running during the third week in March, a large increase. The larger smelters are all busy and the output will be greater. With the exception of the Little Pittsburg, all the leading mines are doing fully as well as at any time, while the Chrysolite is doing better. In a short time, the Iron mine will largely increase the output, and, as soon as the snow disappears, the Breece and Long & Derry hills mines will add no inconsiderable quantities. The Grant Smelting Company has accumulated an im-

menes reserve of ore, about 9000 tons, and although the capacity of the works has been greatly increased, and now, when in full blast, fully 230 tons are treated in twenty-four hours, the company receives enough to keep the entire works occupied, without calling upon its reserve. Other smelters are also accumulating large amounts of ore.

It is reported that a large body of ore has been struck in the Plata Verde. The Gray Eagle, at Silver Cliff, has struck ore.

DAKOTA.

The Black Hills mines are turning out a large amount of bullion. The product follows: The gold from the Father de Smet for 25 days in February was \$61,000, from only 80 stamps, and the yield for the past year from this mine was something over \$500,000. The Homestake is also producing about \$110,000 per month; the Deadwood, \$45,000; the Golden Terra, \$60,000; the Highland, \$15,000, but the new 120-stamp mill will run this up to \$80,000; the Caledonia, \$0,000; Gopher, \$10,000; High Lode, \$30,000; Durango, \$0,000; Esmeralda, \$10,000; Roderick Dhu, \$12,000; and other mills about \$50,000. Larger mills than have ever before been put up in any country have been ordered for other mines. The Homestake people now have two mills larger than any in the world, but even these 120-stamp mills are to be out-ranked; though the quartz mills of the Hills are now producing about \$6,000,000 per annum.

The bar, valued at \$36,880, representing the first Homestake clean-up for March, has been received in this city. The Durango reports its last clean-up as \$3400 from 500 tons, or \$6.40 per ton. The monthly yield is about \$10,000.

NEVADA.

A regular shipment of 5 tons every other day is being brought in to the Richmond Reduction Works, Eureka District, from the Bay State, and there are at present 25 tons lying on the dump. The ore supply still remains good, and the usual quantity is extracted.

The Belmont is looking better, and cleaned up \$5000 recently as the result of ten days' run. The yield of the Eureka Consolidated mine for the month of February was as follows:

Table with 2 columns: Item (Gold, Silver, Lead) and Value (\$34,800, \$52,200, 34,400).

Total \$121,400

This mine shipped, during the week ended March 22d, bullion to the aggregate amount of 177,335 pounds, or an average of 25,334 pounds per day.

The mill at the Grand Prize mine, Tuscarora, began crushing on the 15th ult. The average sulphure pulp is \$107.71, and the chloride pulp \$33.45 per ton.

The following mines are making regular shipments to the Richmond furnaces: K. K. Williamsburg, Connelly, Dunderberg, Bay State, Hamburg, Silver Connor, and Home Ticket.

The Richmond Consolidated, during 1879, yielded \$1,554,000, of which the shareholders received \$377,500 in quarterly dividends. The stock is selling in London at from \$47.50 to \$50 per share, of the par value of \$25. Work has been recommenced on the Robinson Copper Mining and Smelting Company's property at Robinson, near Ward, Nev. The furnace will shortly be fired up.

Fifteen tons of antimony ore were shipped from Mill City, Humboldt County, Nevada, on March 25th. Antimony ore is now in demand.

UTAH.

SILVER REEF.—The shipments of bullion from Silver Reef, Utah, during week ended March 20th, amounted to \$16,336.

The Barbee & Walker mine is located at Silver Reef, Utah. It has only a five-stamp mill, but is working 35 to 40 tons per day, and producing \$1000 per day of silver from 925 to 970 fine, as per assays made at U. S. Assay Office.

On the 20th, 22,373 pounds of bullion from the Horn-Silver mine was received at Salt Lake City. On March 24th, received 25,888 pounds of Horn-Silver bullion at Salt Lake, Utah.

The Horn-Silver mine now has about \$200,000 worth of bullion in the yard at their smelter, and about \$200,000 more in transit or at the refining works in Chicago. The estimates of value are based upon prices at the mine.

About \$60,000 will be the bullion turn-out of the Stomont mill for the present month. The Silver Reef Miner asks: "How is this for 10 stamps running on sandstone?"

The Salt Lake Ore Market.—The Inter-Ocean's correspondent, under date of March 22d, writes: "The shipments of ore and bullion for the week ending March 22d are as follows: Seven cars of Mingo bullion to Pittsburgh, two cars French Company's bullion to Pittsburgh, two cars French Company's bullion to Omaha, two cars Morgan bullion to Omaha, seven cars Horn-Silver (Frisco) bullion to Omaha, four cars Germania bullion to Omaha, twelve cars Germania bullion to New York, one car Mackintosh lead ore to Omaha, one car Conklin lead ore to Omaha, one car Loomis lead ore to San Francisco. Bullion, 773,563 pounds; ore, 61,464 pounds; total, 835,027 pounds. The bullion and ore market is dull in consequence of the falling off in the price of lead—which is nominally \$55 per ton against \$70 per ton three weeks since. Notice has been served on General Connor and the President and Directors of the Great Basin Mining Company, at Boston, by Franklin Reed and H. C. Goodspeed, that they are the owners of one twelfth of the Great Basin mine, and holding them to an accounting and making them responsible for any misapplication of their one-twelfth interest. This, of course, is but the beginning of a long and costly lawsuit that will involve the title of the Great Basin Mining and Smelting Company to the Great Basin and other mines. The Great Basin mine is in Rush Valley District, and has a large body of ore exposed."

United States Mint Coinages for March.—The following is a statement of the coinage executed at the United States mints during the month of March:

Table with 3 columns: Denomination, Pieces, Value. Rows for Gold (Double-eagles, Eagles, Half-eagles) and Silver (Dollars, Half-dollars, Quarter-dollars, Dimes).

MINOR COINAGE table with 3 columns: Item (Five-cent pieces, Three-cent pieces, One-cent pieces), Quantity, Value.

WASHINGTON, April 1.—The Treasury Department to-day purchased 315,000 ounces of silver for the Philadelphia and San Francisco mints.

Exports of Gold and Silver from New York.

Table with 3 columns: Item (Week ending March 27th, Corresponding week last year, Since January 1st, Corresponding period last year), Quantity, Value.

Gold Interest paid out by the Treasury.

Table with 3 columns: Item (Week ending March 27th, Corresponding week last year, Since January 1st this year, Corresponding period last year), Quantity, Value.

METALS.

NEW YORK, Friday Evening, April 2.

Metals still continue to be considerably demoralized, and although there is a feeling in the trade that a change for the better will take place soon, there are no positive indications of it yet.

Copper.—Sales of about 250,000 lbs. of Lake at 22 @22 1/2c. are reported. At the close 22 1/2 is asked. London advices of March 19th say:

"Chili bars opened at a slight reduction from yesterday's prices, but the decline in values seems at best to have attracted buyers, and we closed with a decidedly firmer market. On first change, a speculative sale was made at £66 net, for delivery three months hence, with power to seller to double the quantity, the quantity so disposed of being 100 tons; shortly after, £66 was accepted for cash parcels, and at this figure about 300 tons were taken. The demand having proved sufficient to absorb all the low-priced metals offering, buyers found it necessary to pay £66 1/4 cash, at which we closed rather takers. Business was also done in G. O. B.'s at £66 1/2 net, six weeks, £67 1/2 and £68, three months, usual terms, but only to a limited extent. In best brands we note a small sale at £67 cash. The total transactions of the day we estimate at about 600 tons.

"Burra Cake, nominally £80; Wallaroo, £81 per ton; Tough Cake rules £72 @ £74; Select Ingots, £74 @ £76; India sheets, £76 1/2 @ £78; Y. M. sheets, 6 1/2 @ 6 3/4 per pound."

Tin.—The business amounts to about 200 to 250 tons at 21 @ 20 1/2c. The quotations now are Straits, 21 1/4 @ 21 1/2c; L. & F. 20 1/2 @ 20 3/4c; Refined, 20 3/4 @ 21c. Straits in London advanced from £84 to £87 10s., and has since declined to £86. Singapore quotes \$28.50 with exchange at 3s. 10 1/2d. The shipments from the Straits for the last half of March to this country were as follows: By steam 225 tons, and sail 100 tons. Mr. E. P. White furnishes the following statistics:

FIG-TIN STATISTICS.

NEW YORK, April 1.

Table with 3 columns: Item (January 1st, 1880. Stock in hands of dealers, arrivals in New York and Boston, consumption, stock April 1st, etc.), Quantity, Value.

Tin Plates.—These are very much depressed. We quote per box as follows: Charcoal tins, third cross, Melyn grade, \$9 @ \$9.12 1/2 and Allaway grade, \$8.87 1/2 @ \$9; ternes, Allaway grade, \$7.75 @ \$8; coke tins, B. V. grade, \$6.87 1/2 @ \$7; and ternes, \$7.12 1/2 @ \$7.25.

Lead.—There is a business of about 300 tons of common at 5 65c, and 200 tons of corroding at 5 1/2c. reported. At the close 5 1/2c. is asked for common and 6c. for corroding, and prices are firm and advancing, both here and abroad.

Spelter and Zinc.—Both are quiet, the former held at 6 1/2 @ 7c., and the latter at 8c.

Antimony.—There is no Cookson's in stock; it has ruled at 24 @ 25c. Hallett's is held at 20c and Johnson's at 19 1/2c.

PRICES OF IRON.

Baltimore. March 30.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

Table with 3 columns: Item (Balt. Char., Va., Anth. No. 1, Anth. No. 2, Anth. No. 3), Price, Value.

Buffalo. March 29.

[Specially reported by Messrs. PALEN & BURNS.]

Table with 3 columns: Item (No. 1 Ex. Foundry, No. 2, No. 3 Forge, etc.), Price, Value.

Columbus, O. March 30.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

FOUNDRY IRONS.

Table with 3 columns: Item (No. 1 Hanging Rock Charcoal, No. 2, etc.), Price, Value.

MILL IRONS.

Table with 3 columns: Item (Gray neutral, Mottled and white neutral, Gray cold short, etc.), Price, Value.

Chicago. March 29.

[Specially reported by Messrs. WILLIAM M. COX & Co.]

Table with 3 columns: Item (Lake Superior Charcoal, Car Wheel & Mal., Pennsylvania Anthracite, etc.), Price, Value.

Louisville. March 30.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

FOUNDRY IRONS.

Table with 3 columns: Item (Hanging Rock Charcoal, Southern Charcoal, etc.), Price, Value.

MILL IRONS.

Table with 3 columns: Item (No. 1 Charcoal, Cold-short & Neutral, No. 1 Stc'l & Coke, etc.), Price, Value.

CAR-WHEEL AND MALLEABLE IRONS.

Table with 3 columns: Item (Hanging Rock, Cold Blast, Alabama and Georgia, Cold Blast, etc.), Price, Value.

Milwaukee. March 29.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRONS.

Table with 3 columns: Item (No. 1 Lake Superior per gross ton, No. 2, No. 3), Price, Value.

CAR-WHEEL AND MALLEABLE IRONS.

Table with 3 columns: Item (No. 5 Charcoal, Lake Superior, No. 6), Price, Value.

ANTHRACITE IRONS.

Table with 3 columns: Item (No. 1 E. & L. S. ores per gross ton), Price, Value.

STONE COAL AND COKE.

Table with 3 columns: Item (Ohio Silvering, Eglington Imported Scotch, Summerlee), Price, Value.

Philadelphia.

[Specially reported by Messrs. JUSTICE COX, JR., & Co.]

Table with 3 columns: Item (No. 1, No. 2, Long Forge, All at furnace), Price, Value.

Per lb.

Table with 3 columns: Item (Bars, Tank and common plate, Best Bloom), Price, Value.

Per ton.

Table with 3 columns: Item (Old Rails, Muck Bars (at mills), Wrought Scrap, Cast), Price, Value.

Pittsburg. March 30.

[Specially reported by A. H. CHILDS.]

Table with 3 columns: Item (No. 1 F'dry, No. 2, Gray Forge), Price, Value.

Richmond, March 30. [Specially reported by ASA SNYDER.] Scotch Pig-Iron... Amer. Scotch Pig-Iron... American... Va. Cold Blast Charcoal Pig-Iron, neutral... Old Rails... Wrought Scrap No. 1... Cast Machinery Scrap... Richmond Refined Bar Iron... Horseshoes (Tredgar)... Mule-shoes... Old Dominion nails (according to size of lots)...

St. Louis, March 28. [Specially reported by CARD & HOFFER.] HOT BLAST CHARCOAL... COKE AND COAL... MILL IRONS... CAR WHEEL IRONS... IRON ORE...

FREIGHTS. Coastwise Freights. Per ton of 2240 lbs. Representing the latest actual charters to April 2d, 1880.

Table of Freights with columns for Ports, From Philadelphia, From Baltimore, and From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.

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

PRICES OF COAL. New York.

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

Table of Coal Prices for Wyoming Coal, Lehigh Coal, Schuylkill Coal, and Hard White Ash, listing prices for Lump, Steamer, Grate, Egg, Stove, and Chestnut.

* Fifty cents per ton additional for delivery at New York. Wholesale Prices of Bituminous Coal. MANUFACTURING AND STEAM COALS...

Table of Domestic Gas-Coals, listing prices for Westmoreland and Penn., Kanawha at Richmond, and others.

Table of Foreign Gas-Coals, listing prices for Newcastle at Newcastle-on Tyne, Liv. House Orrel, Ince Hall Cannel, etc.

Retail Prices. Per ton of 2000 lbs. Anthracite. G. & Egg. Stove. Chest. Pittston coal delivered... Lack. oal, delivered below 59th St. 5.00 5.00 5.00

Baltimore, March 31. [Specially reported.] Wholesale Prices per ton of 2240 lbs. In cars at Depot N. C. R. R.

Table of Hard White Ash, Free-Burning White Ash, Shamokin, etc. Lump and Steamboat... Broken... Egg... Stove... Chestnut...

LYKENS VALLEY RED ASH. Broken... Egg... Stove... Chestnut... From yard or wharf to trade, 50 cents additional.

Buffalo, March 30. [Specially reported by Messrs. LEE & LOOMIS.] ANTHRACITE.

Table of Lackawanna and Shamokin coal prices, listing prices for Grate, Egg, Stove, Chestnut and No. 4, and Lehigh Lump.

Connellsville coke, gas, steam, and Cannel coals are of...

ferred, for the present, at the following prices per ton of 2000 lbs., delivered:

Table of Coal Prices for Connellsville coke, Brookfield Coal, Brier Hill, Youghiogeny, Monterey, Catfish, Stoneboro, Sterling Cannel.

Terms, equal to cash in New York City funds. Cleveland, March 30. [Specially reported by F. A. BATES, Esq.] Per ton of 2000 lbs. f.o.b. vessels.

Table of Retail Trade Coal Prices for Brier Hill lump, Massillon and Mineral Ridge, Monday Creek, Straitsville Lower Vein, Hocking Valley, etc.

Table of Retail Trade Coal Prices for Brier Hill lump, Massillon and Mineral Ridge, Monday Creek, Straitsville Lower Vein, Hocking Valley, etc.

Hamilton, Ont., March 29. [Specially reported by H. BARNARD, Esq.] Retail prices delivered per ton of 2000 lbs. Pennsylvania Coal Co.'s Pittston Coal.

Table of Hamilton Coal Prices for Grate, Egg, Stove, Chestnut, Pea.

Louisville, March 30. [Specially reported by Messrs. BYRNE & SPEED.] Wholesale.

Table of Louisville Coal Prices for Pittsburg, Kentucky, etc.

Milwaukee, March 31. [Specially reported by Messrs. R. P. ELMORE & Co.]

Table of Milwaukee Coal Prices for Lackawanna stove, Brier Hill, Straitsville, Morris Run Blossburg, Altoona, Cumberland Forge, Lehigh Lump.

Montreal, March 29. [Specially reported by Messrs. ROBERT C. ADAMS & Co.] Anthracite at retail, per 2000 lbs., delivered.

Table of Montreal Coal Prices for Stove, Chestnut, Egg.

New Orleans, March 29. [Specially reported by Messrs. C. A. MILTENBERGER & Co.] PITTSBURG COAL.

Table of New Orleans Coal Prices for At wholesale (by boat-load), To steamboats, etc.

At wholesale... retail... ANTHRACITE COAL Per ton of 2000 lbs.

At wholesale... retail... ALABAMA COAL.

At wholesale... nominal... ST. BERNARD (KY.) COAL.

To families... VIRGINIA CANNEL COAL.

Sandusky.		March 29.	
[Specially reported by Messrs. BLACK & CLARKE.]			
Per ton of 2000 lbs.			
ANTHRACITE.			
	On cars		Retail delivered.
Grate and Egg	\$4.55		\$5.50
Stove	4.75		5.50
Chestnut	5.00		5.50
Straitsville	3.00		4.00
Shawnee	3.00		4.00
Piedmont	4.35		5.50
Connellsville Coke	8.25		9.00

St. Louis.		March 29.	
[Specially reported by Messrs. LEWIS P. HARVEY & Co.]			
ANTHRACITE.			
Lackawanna	\$6.30@6.50		
Wilkes-Barre	6.30@6.50		
Schuylkill	6.30@6.50		
Lehigh Lump	6.30@6.50		
Connells. Coke	6.30@6.50		
Blossburg	6.30@6.50		

BITUMINOUS.		March 29.	
Illinois	\$2.50@2.75		
Big Muddy	3.00@3.25		
Indiana Block	2.75@3.00		
Piedmont	5.00@5.25		

COKE.		March 30.	
[Specially reported by Messrs. GOSLINE & BARBOUR.]			
Ton of 2000 lbs.			
Connellsville	\$9.25@9.50		
West Virginia	7.50@8.00		
Carbondale, Ill.	6.50@6.75		
Equality, Ill.	5.25@5.50		

Toledo.		March 30.	
[Specially reported by Messrs. GOSLINE & BARBOUR.]			
Ton of 2000 lbs.			
Lackawanna	Grate	Egg	Stove
On cars	\$4.60	\$4.60	\$4.75
Retail delivered	6.00	6.00	6.00

BITUMINOUS—WHOLESALE ON CARS AT TOLEDO.		March 30.	
Ton of 2000 lbs.			
Straitsville lump	\$3.35		
" nut	2.60		
Hocking Valley lump	3.35		
" nut	2.60		
Card & Upson Coal Co.'s Coal, lump	3.35		
" nut	2.60		
Fall Brook or Morris Run or Blossburg Coals	3.75		
Cumberland and Blossburg	4.50		
McIntyre Blossburg Coal	3.75		
Card & Upson Lehigh Coal, f. o. b. vessel at Sandusky or Toledo, \$3.10 per ton of 2000 lbs.			

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 March 27th, and years from January 1st:

Tons of 2240 lbs.	1880.		1879.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co.	47,978	703,838	50,689	635,058
D. L. & W. RR. Co.	59,113	742,229	56,742	733,764
Penn. Coal Co.	15,086	162,199	28,592	246,367
L. V. RR. Co.	14,380	215,383	20,078	200,286
P. & N. Y. RR. Co.	439	3,157		4,770
C. RR. of N. J.	26,229	311,772	52,498	388,664
	163,225	2,138,578	208,599	2,208,909
Lehigh Region.				
L. V. RR. Co.	48,130	563,469	48,338	557,338
C. RR. of N. J.	32,477	392,022	55,859	444,684
S. H. & W. B. RR.		8,841		7,914
	80,607	964,332	104,197	1,009,936
Schuylkill Region.				
P. & R. RR. Co.	93,716	1,072,010	123,470	1,358,890
Shamokin & Lykens Val.	22,003	138,027	19,979	136,381
	115,719	1,210,037	143,449	1,495,271
Sullivan Region.				
St Line & Sul. RR. Co.	868	10,014	868	12,984
Total	360,419	4,322,961	457,113	4,727,100
Increase				
Decrease	96,694	404,139		
Total same time in 1875			2,284,626 tons.	
" " " " 1876			2,163,127 "	
" " " " 1877			3,509,001 "	
" " " " 1878			2,742,931 "	
" " " " 1879			4,727,100 "	

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.

Receipts and Shipments of Coal at Chicago, Ill., for the week ending March 27th, and year from January 1st:

	Week.	Year.
	Tons.	Tons.
Receipts	37,025	514,413
Shipments	9,585	151,673

Belvidere Delaware Railroad Report for the week, and years ending March 27th:

	Week.	Year.	Year.
		1880.	1879.
Coal for shipment at Coal Port (Trenton)	731	862	
Coal for shipment at South Amboy	5,344	90,367	85,427
Coal for distribution	11,224	109,683	79,425
Coal for company's use	1,993	24,259	24,890

The Production of Bituminous Coal for the week ending March 27th was as follows:

Tons of 2000 lbs., unless otherwise designated.	Week.	Year.
	Tons.	Tons.
Cumberland Region, Md.		
Tons of 2240 lbs.	†	352,878
Barclay Region, Pa.		
Barclay RR., tons of 2240 lbs.	8,794	105,319
Broad Top Region, Pa.		
Huntingdon & Broad Top RR.	4,909	40,943
*East Broad Top	2,028	15,799
Clearfield Region, Pa.		
*Snow Shoe	1,609	16,527
*Tyrone and Clearfield	4,290	325,476
Alleghany Region, Pa.		
*Pennsylvania RR.	8,245	76,280
Pittsburg Region, Pa.		
*West Penn RR.	7,748	62,297
*Southwest Penn. RR.	1,226	14,472
*Penn & Westmoreland gas-coal, Pa. RR.		251,424
*Pennsylvania RR.	11,736	98,103

*For the week ending March 14th.
† This report was not received this week.

The Production of Coke for the week ending March 14th:

Tons of 2000 lbs.	Week.	Year.
	Tons.	Tons.
Penn. R.R. (Alleghany Region)	1,533	14,897
West Penn RR.	3,146	22,045
Southwest Penn. RR.	24,333	206,018
Penn. & Westmoreland Region, Pa. RR.	2,978	30,504
Pittsburg, Penn. RR.	11,209	136,614
Total	43,197	410,078

THE NEW YORK MINING AND DEVELOPING CO.

OFFICE: 74 CEDAR STREET, NEW YORK.

Capital Stock, \$1,000,000. 40,000 Shares, of \$25 Each.

OFFICERS.

CLARK BELL, President.

J. E. LEWIS, Secretary.

E. O. PRESBY, Treasurer.

DIRECTORS.

- CLARK BELL, Esq., Attorney at Law, Equitable Building, New York.
- L. M. BATES, Esq., Bates, Reed & Cooley, Merchants, 345 Broadway, New York.
- T. C. DURANT, Esq., 20 Nassau street, New York.
- J. E. LEWIS, Esq., Lewis & Comegys, Financial Agents, 74 Cedar street, New York.

- A. B. GIBBS, Esq., Merchant, 172 Pearl street, New York.
- E. A. MERRITT, Esq., Collector Port of New York, New York.
- E. O. PRESBY, Esq., 74 Cedar street, New York.
- H. PENNINGTON, Esq., Pres. National Bureau of Engraving, Philadelphia, Pa.

ENGINEERS.

- Col. N. B. LORD, M.E., Denver, Colo.
- Col. THEO. H. LOWE, M.E., Leadville, Colo.

- Maj. H. D. WHITEMORE, M.E., Lake City (San Juan), Colo.
- ARTHUR HAYNE, M.E., Tombstone, A. T.

SPECIAL AGENTS.

J. H. JONES, Esq., Denver, Colo.

G. L. HAVENS, Esq., Leadville, Colo.

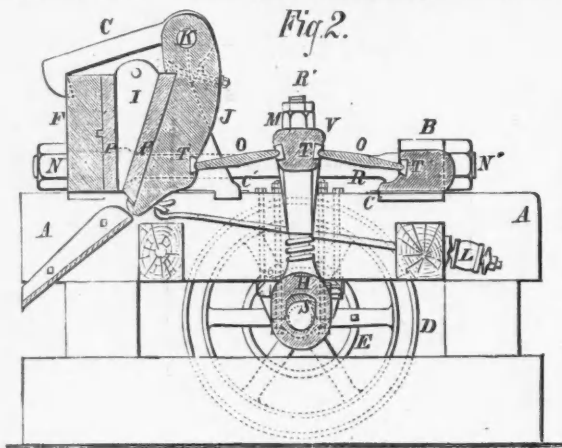
A. H. STEBBINS, Esq., Tombstone, Arizona.

This Company has for its principal and immediate object the acquiring, working, and disposing of mining properties in Colorado and Arizona. Contracts will be made with prospectors and others owning promising claims, to open up and develop their properties, the Company receiving in return an interest in the properties worked. From one half to three quarters of a property is customarily given for development. Representatives of the Company have recently visited the mining districts of both Colorado and Arizona, and a considerable number of contracts and proposals are now awaiting the action of the Company. A careful selection from these will be made, entertaining, however only such as have been favorably reported by its engineers and attorneys, the former passing upon the merits of the property, and the latter on the validity of the titles. Several properties have already been accepted, and work has been commenced upon them. The Directors fully appreciate the great importance of employing the highest engineering ability for determining the actual value of the properties placed before them for inspection. The experts they have selected are gentlemen of undoubted experience and ability and of the highest standing. The Company will commence work upon several other properties immediately on the completion of the necessary preliminaries, and will increase the number of its investments from time to time, as favorable opportunities occur. By vote of the Board of Directors, 5000 shares of the treasury stock of the Company, of the par value of \$25, are offered to subscribers at \$10 per share, the sale of which will yield all the capital at present desired. As the Company is organized under the laws of the State of Connecticut, and its stock issued full-paid in purchase of property, subscribers incur no liability. Applications for stock by mail should be addressed to the Treasurer, and should be accompanied by a certified check or draft on New York.

Compound Dry Air Compressors.

THE NORWALK IRON WORKS CO., SOUTH NORWALK, CONN.

IMPORTANT TO MINE - OWNERS, RAILWAY COMPANIES, AND CITIES.



LONGITUDINAL SECTION OF BLAKE'S CRUSHER.

BLAKE'S Challenge Rock-Breaker, OR Sectional Cushioned Crusher.

Patented Nov. 18th, 1879. Will be found the most economical and Reliable Crusher ever offered to the public for Crushing Railway Ballast, Road Metal, Stone for Concrete, Quartz, Flint, Emery, Corundum, Feldspar, Baryta, Manganese, Plaster, Soapstone, etc., etc. This machine dispenses with cast-iron frame and pitman of our old forms. All strains are on wrought-iron or steel. Awarded medal of superiority at American Institute Fair, December, 1879, where it was exhibited in competition with our old form of crusher. Address

BLAKE CRUSHER CO., Sole Makers, NEW HAVEN, Conn.

ELMORE & RICHARDS,

Importers and Dealers in

CHEMICAL APPARATUS,

ASSAYERS' ARTICLES, CRUCIBLES, FURNACES, SCORIFIERS, MUFFLES, ETC. RELIABLE C. P. SULPHURIC, NITRIC, AND MURIATIC ACIDS. MERCK'S PURE CHEMICALS, ETC.

AGENCY OF THE BATTERSEA WORKS, LONDON, 4 MURRAY STREET, NEW YORK.

MINING ENGINEERS, ASSAYERS, AND ANALYTICAL CHEMISTS are respectfully informed, that we have the largest stock of fine chemical apparatus, and pure and rare chemicals to be found in America, combined with which we have established the lowest prices possible and the greatest reliability in every particular. JOHN N. ELMORE. H. E. RICHARDS, M.D.

CHRYSOLITE SILVER MINING COMPANY.

DANIEL S. APPLETON, President. L. M. LAWSON, Treasurer. DRAKE DE KAY, Secretary. Rooms 51 to 57 Boreel Building, No. 115 Broadway, New York. WINFIELD SCOTT KEYES, Gen'l Manager, Leadville. JOHN W. MARDEN, Financial Agt., Leadville. THE BANK OF LEADVILLE, Bankers. Counsel: BENJAMIN WILLIAMSON, Ex-Chancellor of New Jersey. HENRY C. GARDINER, Bankers and Registrars: CENTRAL TRUST CO. of New York.

TRUSTEES.—Sen. John P. Jones, of Nevada; Wm. Borden, of Chicago; L. M. Lawson, of Donnelly, Lawson & Co., Bankers, New York; Daniel S. Appleton, of D. Appleton & Co., N. Y.; Gov. H. A. W. Tabor, Lt.-Governor of Colorado; Arthur Sewall, President National Bank of Bath, Me.; Chas. A. Whittier, Banker, of Boston; Geo. D. Roberts, of N. Y.; Ulysses S. Grant, Jr., of N. Y.; Wm. S. Nichols, Banker, of New York; E. B. Dorsey, M.E., of New York; H. A. V. Post, of Post, Clark & Martin, Bankers, New York. Location of Mines—FRYER HILL, Leadville, Colo. Capital Stock, \$10,000,000; Shares, 200,000; Par, \$50. Character of Ore, Silver and Lead, Smelting Ores. Regular dividends, \$200,000 per month.

LITTLE CHIEF MINING COMPANY.

CYRUS H. McCORMICK, President. GEORGE D. ROBERTS, Vice-President. DUMONT CLARKE, Treasurer. DRAKE DE KAY, Secretary. Rooms 51 to 57 Boreel Building, No. 115 Broadway, N. Y. WINFIELD SCOTT KEYES, General Manager, Leadville. JOHN W. MARDEN, Financial Agent, Leadville. THE BANK OF LEADVILLE, Bankers. Counsel: BENJAMIN WILLIAMSON, Ex-Chancellor of New Jersey. HENRY C. GARDINER, Bankers and Registrars—Central Trust Company, of New York.

TRUSTEES.—Jonas H. French, of Boston; Gen. Anson P. K. Safford, of New York; Jesse Spaulding, of Chicago; Gen. Adelbert Ames, of New York; John R. Hall, of Boston; Hon. Richard C. McCormick, of New York; Abel D. Breed, of New York; Cyrus H. McCormick, of Chicago; George A. Bruce, of Boston; Luther R. Marsh, of New York; Edward H. Potter, of New York; George D. Roberts, of New York; Dumont Clarke, Cashier Am. Ex. Nat'l Bank. Location of Mines—Fryer Hill, Leadville, Colo. Capital stock, \$10,000,000. Shares, 200,000. Par, \$50. Character of Ore, Silver and Lead, Smelting Ores. Regular dividends, \$100,000 per month.

Winnebago & O. K. Mining Co. J. W. Davis, Superintendent, Central City.

Wm. F. Buckley, President. Thos. T. Buckley, Vice-President. Henry W. Ford, Treasurer. Drake de Kay, Secretary. Rooms 51 to 57 Boreel Building, No. 115 Broadway, New York. Charles Buckley, Financial Agent, Central City. The First Nat'l Bank, Of Denver, Bankers. Counsel: BENJAMIN WILLIAMSON, Ex-Chancellor of New Jersey. HENRY C. GARDINER, Bankers and Registrars, Nat'l Bank of the Republic, N. Y.

TRUSTEES.—Wm. F. Buckley, Pres. Balance Dock Co.; Henry W. Ford, Pres. Nat. Bank of the Republic; Thos. T. Buckley, Vice-Pres. Nat. Bank of the Republic; Charles J. Martin, Pres. Home Ins. Co.; Arthur Sewall, Pres. Nat. Bank of Bath, Maine; George R. Eager, Merchant, of Boston; William Borden, Mine Owner, of Chicago; Wm. H. Guion, Steamships; John D. Prince, of Prince & Whiteley, Bankers. Location of Mines—Central City, Gilpin Co., Colorado. Capital Stock, \$2,000,000; Shares, 200,000; Par, \$20. Character of Ores—Gold, Silver, and Copper, Smelting and Milling Ore.

CALIFORNIA WATER AND MINING COMPANY,

FREDERICK E. GIBERT, President, New York. EDWARDS S. SANDFORD, Vice-President. DUMONT CLARKE, Treasurer. No. 115 Broadway, New York. AUDINET GIBERT, Secretary, New York. THOMAS FINDLEY, Managing Director, Georgetown, Cal. ANDREW B. FORBES, Financial Agent, California. Counsel: H. C. GARDINER, SIDNEY DE KAY. Bankers—American Exchange National Bank, of New York. Registrars—The Mining Trust Company, of New York. TRUSTEES.—Frederick E. Gibert, of New York; Jno. Hoey, of Adams Express, New York; Wm. R. Garrison, of New York; Hon. Thomas Findley, ex-State Treasurer of California; George D. Roberts, of New York; Edwards S. Sandford, Adams Express, New York; Luther R. Marsh, of New York; George T. Hope, Continental Ins. Co., New York; Thomas Dana, Railroads, of Boston; Gen. Adelbert Ames, of New York; Drake de Kay, of New York. Capital, \$10,000,000. Shares, 500,000. Par value, \$20. Full paid and unassessable. Location of property—El Dorado County, Cal. Water supplied for hydraulic, gravel-mining, saw-mills, irrigation, and other purposes. MINES—Gravel, Seam and Gravel, and Quartz.

LOWLAND CHIEF Consolidated Silver Mining Company.

OFFICES: Boreel Building, 115 Broadway, New York. CAPITAL, \$10,000,000; SHARES, 200,000; PAR, \$50. REGISTRARS OF STOCK: THE FARMERS' LOAN AND TRUST COMPANY, NEW YORK.

OFFICERS: S. W. DORSEY, President. JOHN STANTON, Jr., Vice-President. T. W. TORREY, Secretary and Treasurer. TRUSTEES: José F. de Navarro, Joseph H. Parsons, D. B. Barnum, H. C. Dickinson, Stephen B. French, A. Arango, George A. Hoyt, John Stanton, Jr., J. F. Alexander, D. W. C. Wheeler, S. W. Dorsey.

BULL-DOMINGO Consolidated Mining Company, OF COLORADO.

Offices: Boreel Building, 115 Broadway, New York. Mines at Silver Cliff, Custer County, Colorado. Capital Stock, \$10,000,000; Shares, 200,000 Par, \$50.

OFFICERS: W. H. BARNUM, President. S. W. DORSEY, Vice-President, N. B. STEVENS, Secretary. TRUSTEES: W. H. Barnum, S. W. Dorsey, Wm. Dorsheimer, H. C. Dickinson, J. B. Dutcher, T. C. Eastman, W. H. Robertson, Charles Wright, Wm. M. Lent, B. F. Montgomery, and Seth G. French.

BALD MOUNTAIN MINING COMPANY. Organized under the Laws of New York. Location of Mines: LAKE, PARK, and GUNNISON COUNTIES, COLORADO.

CAPITAL STOCK, \$10,000,000; 1,000,000 shares; par value \$10. STOCK UNASSESSABLE. J. E. PEYTON, President; JAMES HAVEMEYER, Vice-President; EDWARD P. COE, Treasurer; CHARLES WENDELL, Secretary. Trustees—J. E. Peyton, Wm. G. Vermilye, Edward P. Coe, Gordon L. Ford, J. S. Andrews, Edward A. Abbott, N. D. Wendells, James Havemeyer, B. W. Spencer, Charles A. Sherman, James D. Fish, R. H. Rochester, R. M. Pulsifer. Manager and Mining Engineer in Colorado, H. B. Bearce. Bankers in Colorado, First National Bank, Denver; Bankers in New York, Mechanics' National Bank; Bankers in Boston, Tower, Giddings & Co.; Registrar of Transfers in New York, Central Trust Company. Attorneys and Counsel—Ward & Jenkins, New York; B. M. Hughes, Denver; S. P. Rose, Leadville.

PRINCIPAL OFFICE: 21 NASSAU ST., NEW YORK.

THE COAL TRADE JOURNAL.

Published every Wednesday. Established April 21st, 1869. It is the only paper in the United States entirely devoted to the interests of the coal trade. Subscription price, \$2.50 a year. F. E. SAWARD, Editor and Proprietor, 111 Brodway, New York.

Send for sample copy, and mention this paper.

TEKNISK TIDSKRIFT, Is devoted to MINING AND METALLURGY, MECHANICAL AND ARCHITECTURAL ENGINEERING: SUBSCRIPTION..... \$3.25 per annum. 1.75 for six months. ADVERTISING RATES..... 1) cents per line. W. HOFFSTEDT, Stockholm, Sweden. Subscriptions taken by the SCIENTIFIC PUBLISHING CO., 27 Park Place, New York.

CARPENTER'S MINING CODE,

A compilation of all the existing mining, water, pre-emption, and homestead laws of the United States and the State of Colorado, mining decisions in the courts and Department of the Interior, articles of incorporation and by-laws for mining companies, comments, forms, etc., etc., by M. B. Carpenter. Price \$1.25. Address

THE SCIENTIFIC PUBLISHING COMPANY, P.O. Box 4404, 27 Park Place, N. Y.

COLORADO: ITS GOLD AND SILVER Mines, Farms, and Stock Ranges, and Health and Pleasure Resorts in and near the Rocky Mountains by Frank Fossett. \$2. Address THE SCIENTIFIC PUBLISHING COMPANY, 27 Park Place, P. O. Box 4404 New York.