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THE World's Fair office of the ENGINEERING AND MINING JOURNAL is in the beautiful Montana pavilion in the Mining Building. When it was mentioned to a few exhibitors that the Scientific Publishing Company desired space on the main floor for an exhibit of the ENGINEERING AND MINING JOURNAL, and its other publications relating to the mineral industry, the representatives of the great State of Montana with characteristic hospitality and courtesy offered the choicest place in their magnificent pavilion, the most attractive in the entire fair. Our friends are cordially invited to visit us there.

STOP the gambling in silver certificates on the Stock Exchange in this city. It is absurd as well as disgraceful that the interests of a great industry should be dependent on the gambling quotations for a few thousand ounces of silver. The total stock represented by these certificates is but 200,000 oz., and yet these wild quotations secured by the "bears" are cited throughout the world as the market price of silver here. Let the Exchange stop this outrage at once.

ONE of the first results of the completion of the Norfolk & Western Railroad to the Ohio River and the opening of a through rail line from southwestern Virginia to the Northwest has been the placing of an important contract for Pocahontas coke, which is hereafter to replace, to some extent at least, the Connellsville product in the extensive works of the Illinois Steel Company. For a long time the coke region of Southwest Pennsylvania has had a practical monopoly of the Western markets, but it is evident that this is at an end, and that the Western mills will have the benefit of competition. The price fixed for Pocahontas coke is not stated.

THE forest fires, which have worked much damage and destruction in the mines of the Vermillion and Mesaba ranges in Minnesota, have practically stopped the shipments of iron ore from those ranges, for a time, while the closing down of the Norrie and other large mines on the Gogebic Range have restricted shipments in that quarter also. For the present, therefore, the iron ore traffic promises to be light, while such shipments as are made from the Lake Superior ports and from Escanaba will be principaly from the stock piles. Receipts at the lower lake ports have been light so far this season and the stocks on hand there are not very heavy. In an ordinary season the effect of this would be to send up the price of iron ore, but in the present condition of affairs there is not likely to be much change in this.

THE success of the test experiments at Sandy Hook with the Justin shells carrying high explosives, introduces a new element into the contest between guns and armor plates. It is true that the Zalinski pneumatic gun has carried such shells, but its range is very limited, and the Zalinski projectile is practically an aerial torpedo which is available only at short distances and under very much the same conditions as the submarine torpedo. Ordnance officers hitherto have not considered the use of high explosives in a high-powered gun of long range practicable, an opinion which will have to be changed if the further tests of the Justin shell prove as successful as those which have just been made. The armor-plate makers, who after long efforts and experiments have succeeded in producing a plate which will resist the impact of an ordinary shell, will now have to revise their work and study the shattering effect of the high explosives rather than the penetrating power of the shell itself.

ACCORDING to reports from London, negotiations are in progress between the Standard Oil Company on the one hand and the NOBEL and ROTHSCHILD syndicates on the other for an agreement under which the petroleum markets of the world will be divided and the entire petroleum output of the world may be placed in the hands of a trust composed of the three parties mentioned. Under this agreement it is said the Russian producers will abandon their efforts to introduce the Baku oil into the markets of Germany and western Europe, leaving that field entirely to the Standard Oil Company with its American oil. In return the Standard will withdraw from the Asiatic markets, leaving them entirely to the Russian producers. The agreement further provides, it is said, that the NOBEL syndicate shall supply the Russian market and the ROTHSCHILDS shall have the monopoly of the export of petroleum from Russia. What will be done with the depots which the Russian producers have already established in England is not decided, but it is said to be probable that they will continue in use and that some Russian oil will still continue to be sent to England, but the price in that country will be fixed entirely by the Standard. These arrangements, it is said, were completed at a meeting held recently in Paris, and a further meeting was to be held about July 1st, at which the agreement would be finally executed.

The more recent oil discoveries in Burma, Java, Sumatra and eastern Siberia may affect the operations of this great "trust" hereafter; but at present they are not sufficiently developed to furnish any considerable supply.

THE STOPPAGE OF SILVER PRODUCTION.

The Western mine and mill owners have acted with that promptness and courage which are characteristic of them. They have closed nearly every silver mine and smelter in this country, and will await the results of the silver slump. This course will in the end be the best, for it will bring a solution of the problem more quickly.

We feel the deepest sympathy for all engaged in this industry as workmen, as owners or investors. We have no illusions on the subject, as our columns have long shown, but we believe that a general appeal to the President to negotiate with foreign governments for an international commission with powers to settle the question on some such lines as proposed in our clearing-house plan would meet with success, and result in an unexampled period of prosperity throughout the world. Without some such international agreement, such a general financial collapse and universal distress as the world never saw seem to be inevitable.

EFFECT OF THE STOPPAGE OF FREE COINAGE IN INDIA ON THE FUTURE OF SILVER.

The stoppage of the free coinage of silver by India, announced on June 26th, is the heaviest blow the white metal has ever received, and promptly brought its market price down to 64 cents per ounce, at which rate the silver in our dollar is worth only 49.5 cents. The Indian Government has established "provisionally," we should say momentarily, a value of 16 pence for the silver rupee, which rate is equivalent to about 20¾ silver to 1 gold, making it therefore extremely probable that any ratio between the metals to be established hereafter by international agreement will not be above 20 to 1.

The action of the Indian Government will have a very decided, if not conclusive, influence upon some questions in the silver problem.

1st. It renders absolutely certain the repeal of the Sherman Act, and will thus stop the purchases of silver in this country, and this will undoubtedly be followed at an early day by the stoppage of free coinage in the remaining silver basis countries.

2d. It will probably stop at once and for ever the wild advocacy in this country of free silver coinage which, always senseless and infinitely harmful, will now be such transparent folly that no rational man will be found to propose it. To this foolish agitation and the forced purchases of unneeded silver have been due the loss of foreign confidence in our ability to maintain gold payments and the withdrawal of foreign capital which we so much need. No one will pretend for a moment that this country can alone carry the silver of the world and maintain its price.

While India has thus settled the question of free silver coinage and has decided the fate of the Sherman Act, it has not solved the silver problem or made a permanent new ratio between the metals. It has forced not alone 45,000,000 ounces a year which, India took last year, on the already greatly overstocked market, but it will start the sales of India's hoarded hundreds of millions, and it has thus given increasing velocity to the downward course of silver prices. Where will these now stop? At 50 cents or 25 cents an ounce? Who can tell? The price is no longer based on cost of production, but only on the necessities or sentiments of sellers on an overstocked market. If the price of siver should decline to 50 cents an ounce, or to the ratio of 41·3 to 1 of gold, how long could or would the Indian Government accept rupees at 16 pence, or on the ratio of 20¾ to 1?

This act has made still more apparent the necessity for an international agreement by which the values of the world's money will be rendered stable or its changes made so gradually as not to interfere with the prosperity, industry or commerce of nations. Let every intelligent man consider this vital question, and use all his influence to induce our Government to propose the appointment of an International Monetary Clearing-House, composed of one or more representatives of each country, to act through the mints of the several countries as depositories, and with power:

1. To ascertain periodically the amount of money, that is, of gold, silver and uncovered notes, held by each country; these amounts to form the basis for the proportions in which the several nations will join in the purchase of all the gold and silver offered in excess of that specifically called for by those wanting the metals.

2. To determine at what ratio the purchases of gold and silver are to be made, and, from time to time, what, if any, change in this value-ratio is called for by the changed conditions of production.

3. To purchase, for common account, such an amount of silver from each of the silver-basis countries as is necessary to put it on the bi-metallic basis.

4. To issue international certificates, redeemable in gold or silver at holder's option, for the gold and silver purchased.

5. To clear every national transaction in the purchase or sale of money.

6. To publish the transactions of the Monetary Clearing-House daily, weekly or monthly.

It is now estimated that India would require only £15,000,000, or $75,000,000, to put it on the bimetallic basis.

Should gold ultimately be found to suffice for the monetary needs of the world and to be the most desirable money, as the advocates of a single gold standard contend, then, under the Clearing-House plan, this would be brought about by a gradual reduction in the relative value of silver without panic or disarrangment of the business of the world. If, on the other hand, as some silver advocates claim, the white metal should prove the most desirable standard for money, its sole adoption would come about through this plan without sudden or disastrous change. In every case the absolute stability of the money of the world would be assured, and the loss from the decline necessitated in the value of either metal would simply require the writing off by each nation (not by the individual holder of the coin or certificate therefor) of a certain amount of its assets in the cheapening metal and increasing by so much its assets in the appreciating metal as the change would involve. If nothing is now done, not only will the value of silver decline enormously and all the business based upon it be disturbed or destroyed, but gold will as certainly appreciate, bringing with it a series of financial disasters as great as those caused by the decline in the value of the white metal. India has destroyed the last support for the value of silver, and started it on its down grade with fearful velocity, and it has started gold climbing, initiating, or at least greatly stimulating, a movement which must disarrange and injure to an incalculable extent the commerce and industry of the world. Let every man now exert his influence to induce our government to propose a rational plan far universal bimetallism.

NEW PUBLICATIONS.

MONEY: ITS ORIGIN, ITS INTERNAL AND INTERNATIONAL USE AND DEVELOPMENT. By J. C. Leaver, London, England. Effingham, Wilson & Co. Pages, 32. Price (in New York) 40 cents.

REVIEW OF THE RT. HON. LEONARD COURTNEY'S ARTICLE ON "BI-METALLISM ONCE MORE." By J. C. LEAVER. Pages, 10.

In his article on "Money" Mr. Leaver seeks to prove, first, that gold "fulfills much more nearly all the conditions required to constitute it the best of all metals for use as money, especially owing to its greater steadiness in value"; second, that owing to the development of banking and clearing balances the necessity for actual coin has decreased, and that there is enough gold; third, that gold has depreciated, and, finally, that it would not be an advantage to increase the metallic currency of the world by artificially raising the price of silver. The argument presented is more or less familiar, with the exception of that part relating to the depreciation of gold. Here Mr. Leaver takes the stand that gold has actually depreciated in value, basing his opinion on a consideration of the increased or decreased supply compared with an increased or decreased need. He holds that "it is ridiculous to say that gold has appreciated because the mills in Lancashire had, by improved machinery and intelligence, produced cottons at half the expenditure of labor previously required." "It is absurd to quote the lessened price of manufactured articles as evidence that gold has appreciated." Following this he says: "To demonstrate that gold has or has not appreciated or depreciated we must not merely judge by the price of articles produced, but by the cost of obtaining the labor, hour by hour." When this is done and "the values of permanent investments are compared, it is found that gold has depreciated, and that this depreciation has been in operation for a considerable time."

The argument here advanced that investment securities are a measure of the value of gold, and that the increased value of such securities is indicative of a depreciation of gold, is ingenious but fallacious, fully as much so as that the value of gold is to be measured by the average price of commodities.

Mr. Leaver claims that the increased value of securities is due to the increased stock of the world's currency, from which it follows that "the price of those securities whose soundness and stability is assured is a certain indication of the appreciation or depreciation of the metals which form the initial figure of that currency." The answer to this is that wealth is here confounded with currency. Accrued wealth has in recent years increased very rapidly owing to mechanical or industrial inventions, the consequent growth of civilization and aggregation of men in cities, and the ability of every man to put his labor in the best paying market. The increase in accrued wealth has led to the development of a class unwilling to work and possessing wealth, who are desirous of investing it where it will bring them a return, without the expenditure of labor. This motive, we take it, has been more influential in raising the price of securities than the mere increase of currency. On the other hand, it should be observed that a redundant currency will cause, first, inflation of prices, and then contraction, and that this movement occurs independently of the underlying metallic base of such currency. As proof of this we cite the present financial situation in the United States and England.

In his review of Mr. Courtney's article Mr. Leaver is by no means fair. He sets up men of straw and easily knocks them down. As an example of this we quote as follows: "Mr. Courtney states that an 'ideal' standard of money should be 'some such substance that a given weight should always be exchangeable for as nearly as possible the same bundle of mixed commodities.'" We agree with Mr. Leaver that this is an extraordinary ideal of a standard, and we think that Mr. Courtney would say so also. What Mr. Courtney really did say was: "The common answer (to the question, 'What is an ideal standard?') would probably be that we should choose some such substance that a given weight should always be exchangeable for as nearly as possible the same bundle of mixed commodities." Mr. Courtney then shows that such a standard would be not only impossible, but valueless, and expresses his own views as follows: "A standard should be something which, as far as possible, involves the same labor and the same sacrifice in obtaining it." This answer Mr. Leaver does not discuss, and in this we think his review unfair.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review in another page of the Journal.

Codigo de Minas y Vocabulario, 1893. Caracas, Venezuela: National Printing-House. Pamphlet, 76 pages.

Wholesale Prices, Wages and Transportation. Senate Report No. 1,394, *Finance Committee. Parts* 1 *and* 2. Washington: Government Printing Office.

Present Development of Heavy Ordnance in the United States. By W. H. Jaques. Philadelphia; Reprinted from the "Journal" of the Franklin Institute. Pamphlet, 36 pages; illustrated.

Mines de Nickel, Cuivre et Platine du district de Sudbury, Canada. By Jules Garnier. Paris, France. Reprinted from Proceedings of the Société de Ingenieurs Civils. Pamphlet, 24 pages; illustrated.

Ninth Annual Report of the Inspector of Mines in the State of Kentucky: for 1891-92. Charles J. Norwood, State Inspector. Frankfort, Ky., Public Printer. Pages, 284; illustrated by maps and diagrams.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

Uses of Molybdenum.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Can you inform me through your columns what the principal uses of molybdenum are? also where a market could be found for an ore carrying 20% molybdenum as molybdenite?

NEW YORK, June 22, 1893. HUNT & ROBERTSON.

(Can any of our readers answer these questions?—Ed. E. and M. J.)

Moissan's Experiments in Reducing Oxides.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Mr. Moissan's publications in "Comptes Rendus" toward the end of last year, and especially the abstracts from his papers in numerous scientific and technical journals, are apt to give room to the impression that Mr. Moissan was the first who succeeded in reducing heretofore unreducible oxides. To correct any error as to the priority of this discovery, I may be permitted to direct the attention of metallurgists to pages 61-63 of my book on "Elektrometallurgy" (published by Harald Bruhm, Braunschweig, Germany, 1891). They contain a report on my experiments, proving that "every metallic oxide is reducible by electrically heated carbon."

DUISBERG-AM-RHEIN, Germany, June 17, 1893. W. BORCHERS, PH. D.

The Treatment of Zinc-Lead Sulphides.

EDITOR ENGINEERING AND MINING JOURNAL

Sir: In your admirable work, "The Mineral Industry," page 316, under the head "Modified Smelting," Mr. S. H. Emmens, speaking of the Bartlett process for treating zinky ores, says that we commenced operations in 1891, and that if our work had been successful the results would have been widely published before this. He then goes on to say that our scheme for the reduction of zinky ores involves too many operations, namely, "a preliminary roast, a crude fume smelting, a refinery smelting, ignition of crude fumes, etc."

It is very evident that Mr. Emmens has confounded my process, as many others have, with that of the well known Lewis-Bartlett process as worked at Joplin, Mo. The F. L. Bartlett process and the Lewis-Bartlett process are entirely different. The process as carried on at the American Zinc-Lead Works, Canon City, Colo., requires but two treatments of the ore at most; on some classes of ore only one. There is no "preliminary roast," no "crude fume smelting," no "ignition of the fume."

The "Engineering and Mining Journal" for August 3d, 1889, contained a complete description of the processes employed at our works, to which I would respectfully refer Mr. Emmens. The reasoning that, because we have worked two years and have not published our results, or allowed them to be published broadcast, we must necessarily have made a failure, is extremely curious. One would suppose that steady work, with a constantly increasing output, would be indicative of success. The fact stands that we are still running and that we treat all kinds of zinky ores successfully. While the profits have been small and the additions to our plant have absorbed much more money than we could spare from our working capital, the actual results have been extremely good, and the cost of treatment well within the bounds of ordinary smelting.

F. L. BARTLETT,
General Manager.

CANON CITY, Colo., June 21, 1893.

"The Mineral Industry" for 1892.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have perused with much pleasure your Vol. I., "Mineral Industry" statistics, which I consider a most valuable book of reference.

J. JAMESON TRURAN.
Secretary Frontino & Bolivia Gold Mining Company, Limited.

LONDON, E. C., England, June 7, 1893.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: As a work of reference the "Mineral Industry: Its Statistics, Technology and Trade," for 1892, is indispensable to the student, the scientist and the commercial man. It reflects unbounded credit upon its editor and is invaluable to the common-sense man who keeps in touch with the industry of the age. Such enterprise deserves substantial recognition, and you have my sincere wish for financial success.

A. G. BROWNLEE,
Agent Spokane & Great Northern Mining Company.

CHICAGO, Ill., June 20, 1893.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: With pleasure I confess that my expectations of the statistical number of the "Engineering and Mining Journal" have been surpassed, as I had not expected to get such a large volume full of information of very high value to anybody taking an interest in any branch of the mineral and metal line of the world. Knowing, myself, what trouble it is to gather information, I am in a position to appreciate what you have done. I am surprised to have it now, so full of information up to the end of 1892.

FRANKFORT ON-MAIN, Germany, June 7, 1893. H. E. BANDELL.

THE SOLUTION OF THE SILVER QUESTION.

The following are extracts from an editorial which was lately published in the daily "Times-Republican" of Marshalltown, Ia., of which Mr. Walker Given is editor, and show the opinion of a complete stranger who judged the plan on its merits:

"Somewhat unexpectedly the congress of financiers at the World's Fair has produced an eminently practicable solution of the silver question in the proposition of Richard P. Rothwell for an international clearing house to adjust balances and difficulties as between the leading nations. The papers read previously by leading bankers and financiers had not prepared the public for a practicable and reasonable proposition like this. Most of them were ardent gold-bugs and took a position in favor of gold monometallism such as the people of this country cannot and should not accept. On the other hand, a few extreme silver men were introduced to make things even by advancing wild ideas on that side.

"Mr. Rothwell, however, took medium ground, and in discussion of the subject international bimetallism outlined a plan for doing away with the difficulties which are constantly arising under the present complex system. * * * *

"Mr. Rothwell's plan is not without great difficulties, but it is far ahead of any other yet presented both as to practicability and as to the beneficial effects certain to result from it. The Rothwell plan is the one valuable thing that has come from the bankers' congress at the World's Fair. It represents a method by which bimetallism can be preserved to the great benefit of all leading nations and the threatened gold scarcity and contraction avoided."

STOPPAGE OF FREE SILVER COINAGE IN INDIA AND ITS IMMEDIATE RESULTS.

The chief details of the report of Lord Herschell's committee, which was appointed in the early part of 1892 to examine into the currency question of India, were made public simultaneously in England and India on Monday, June 26th. For some time it has been known that the committee would recommend that the coinage of silver for private account be stopped, and during the latter part of last week it was rumored that the report also recommended the imposition of a tax upon silver imported into India and governmental regulation of rupee exchange. These rumors were made certainties on the following Monday. On that day the Earl of Kimberley, Lord President of the Council and Secretary of State for India, stated in the House of Lords that the India Council had passed an act for the immediate closing of the Indian mints to the free coinage of silver; that arrangements were being made to issue rupees from the mints in exchange for gold at the rate of 16d. per rupee, and for receiving sovereigns and half sovereigns at the treasuries in payment of dues at the same rate. The Earl of Kimberley further said that it was intended to introduce the gold standard in India, but that gold in the meantime would not be made a legal tender.

In the House of Commons Mr. Gladstone gave information similar to that given in the House of Lords by the Earl of Kimberley. Regarding the silver now on the way to India, Mr. Gladstone said that the Government of India had been instructed that it was open to it to admit this silver to the mints if it thought fit. In answer to a question from Mr. Goschen, Mr. Gladstone said he assumed that the Indian Government would not make discriminatory arrangements to the disadvantage of the natives holding uncoined silver, most of which was in the form of ornaments worn by the natives.

The history of Lord Herschell's Committee and the steps leading to its appointment and of its recommendations was briefly outlined in the Commons as follows: During March, 1892, the India Council wrote urging the home government to aid in the settlement of the silver question by an international agreement, failing which, not to defer determining upon an Indian policy, as, if an international agreement should not be obtained, the United States might suddenly stop the coinage of silver, leaving India unprepared. Other communications were sent discussing the fall in rupee values and the fluctuations in the rates of exchange. The Council, in a letter written in June, 1892, advised that if the International Monetary Conference at Brussels failed, and a direct agreement between India and the United States could not be attained, the mints of India be closed to the free coinage of silver, and a gold standard be introduced.

In a minute Mr. Barbour, Financial Secretary of India, opposed the stoppage of free coinage until it became evident that the United States would not adopt free coinage. Mr. Barbour estimated that the total active circulation in India amounted to 115,000,000 rupees, while a much larger proportion is hoarded. To establish a gold currency, with a full legal-tender currency composed entirely of gold, it would be necessary to withdraw from circulation 1,150,000,000 of rupees, replacing them by £77,000,000 sterling gold. He, therefore, contended that with a gold standard in India a large proportion of the circulation must continue in silver, with silver a legal tender to any amount. If both metals be maintained in circulation, a gold coinage to the amount of £15,000,000 would suffice.

Mr. Long, in a minute to the Council in August, 1892, discussed the adoption of the gold standard, and concludes by suggesting that the ratio of conversion be about 1 to 20.

In advising the Indian Government to exchange gold at the ratio of

16d. to the rupee, the commission said that the object is to guard against a sudden considerable rise in exchange. Hereafter the ratio ought to be raised if circumstances make it advisable.

On the following day, June 27th, explanations of the plan were made in India and England as follows: At Simla, India, the Viceroy, in explaining the provisions of the bill to the Council, said that the keynote of the scheme was rather to prevent a further fall in exchange than to raise the value of the rupee. The fixing of the provisional rate of exchange at 1s. 4d. provided an automatic means of preventing the closing of the mints and the violent disturbing of exchange rates. The rate of exchange had been fixed high enough to relieve the Government of its most pressing necessities, while it was well within the limits of the recent fluctuations.

In London, June 27th, there was further debate in the House of Commons, chiefly on the point of compensation for individual losses due to the closing of the mints; any such action, the Government thought, would establish a bad precedent. It was stated that the Indian Government had power to coin rupees if needed.

Although this action of India had been expected, it yet took the world by surprise when it came. On Tuesday bullion silver fell from 38d. to 36d. in London and from 81c. to 77c. per oz. in New York. On Wednesday it suffered a further drop to 34d. in London and 69c. in New York; on Thursday to 31½d. in London and 62c. in New York. The surprising thing about these quotations is the fact that the New York price is from 5 to 6 cents per oz. lower than the London price.

Another result of India's action has taken place which is of far greater importance to this country than a break in the bullion market, namely, the crystallizing of the sentiment of the country into an almost unanimous call for the immediate repeal of the Sherman bill. From one end of the country to the other meetings of business men, chambers of commerce, bankers and miners are being held and resolutions passed urging the President to call an immediate session of Congress to repeal the Sherman bill. The editors of many Southern papers, formerly in favor of the bill, are now demanding its repeal in no uncertain terms.

On the other hand, a few Congressmen, who do not, however, carry any particular weight, continue the old cry for free coinage in spite of the fact that the bullion value of the silver dollar is only 49 cents. These Congressmen are headed by Warner and Newlands, of Ohio. It is needless to say that Senators Jones, Peffer and Stewart still maintain that the only remedy is free coinage.

Although the President, as has been indicated, is constantly receiving telegrams and petitions from all over the country urging him to call Congress together immediately, he has not yet announced his intention to do so. It is said, semi-officially, that the delay is due to the fear that the Senate would oppose the repeal, several of the Senators who were formerly known as sound money men having, it is said, changed their opinions, and now hold that this country must do what it can to hold up silver. The futility of this idea is made evident by the downward march of the metal during the last two years in spite of our heavy purchases.

Upon silver miners the break in silver has naturally been disastrous, for there are but few mines in the country that can produce silver at a profit with bullion at 60c. per ounce.

The first outcome of the silver excitement in Colorado was a meeting of silver miners and smelters held in Denver June 29th. Although called on very short notice the meeting was largely attended, all the prominent silver producers of the State being represented. Ex-Governor J. B. Grant, of the Omaha & Grant Smelting Company, was made chairman of the meeting. The proceedings were short and to the point, few or no speeches being made. The Committee on Resolutions, consisting of J. J. Hagerman, D. H. Moffatt, R. C. Brown, M. W. Thatcher and B. M. Hyman—all well known men—reported a series of resolutions which were unanimously adopted, and which are given below:

"Whereas, It appears from the continued attacks on silver by the mono-demetallists of the United States, England and other nations that there exists in their minds (induced, probably, by the product of an exceptional or phenomenal mine) the idea that the metal is so abundant, and the cost of production so little, as to justify the depreciation of its value; and,

"Whereas, From years of experience in mining, milling and smelting we are in a position to more thoroughly and correctly know the actual cost of producing silver, and have, in the hope that its market value would more nearly approximate its intrinsic value by its rehabilitation on some equitable basis, kept our men employed in our mines, mills and smelters, though at a loss to ourselves in general; and

"Whereas, From the present price and the condition of affairs and tendency of events it is evident this hope is dissipated for the present; now, therefore, be it

"Resolved, That it is the unanimous sense of this meeting of mine, mill and smelter owners that we put a stop to our further losses by an immediate and complete cessation of all our silver mining, milling and smelting operations in the State of Colorado, in the full belief that the monometallist element will finally appreciate three vital points:

"First—That the world cannot transact its business without the use of silver as money.

"Second—That the actual cost and value of the metal far exceed the incorrect views which they have formed.

"Third—That the inevitable course of events will quickly demonstrate that the enormous sums of money invested in railroads, loans and other property will so depreciate in value that the monometallists will also be convinced that some action must be taken with silver to restore it to its legitimate use which it has held from time immemorial; and be it further

"Resolved, That we deprecate and condemn the intemperate opinions and statements of unreasonable men, which have been telegraphed to the East, that Colorado has any intention of repudiating her obligations, public or private. On the contrary, we think ourselves as well able as any other part of the world to meet whatever may come in this emergency."

The meeting adjourned immediately after the adoption of these. Mr. D. H. Moffatt, the largest individual mine owner in the State, at once gave orders to shut down the mines which he controls at Leadville, Creede, Rico, Cripple Creek and other points. The order also included the closing of the Holden smelting works at Leadville, the lixiviation plant at Aspen, and other works. The Mollie Gibson and the Smuggler mine at Aspen, the former the largest silver-producing mine in the State, have been closed down, and it seems probable that the resolutions given above will be generally complied with, and that for a time at least there will be almost a complete stoppage of the silver industry in Colorado.

Idaho reports indicate that very much the same action will be taken in that State. The mine owners in the Wood River district have decided to suspend. In the Coeur d'Alene trouble in relation to wages, which threatened to result in a strike, is complicated by the new conditions which have arisen. It is very possible that these may prevent a strike, or rather convert it into a lockout by the shutting down of the mines; although, on the other hand, it is possible that the miners may withdraw their claims for an increase, realizing the impossibility of obtaining it under present conditions, and that some arrangement may be made by which work will go on.

The stoppage of the mines of course affects the smelting works at Omaha, St. Louis and other points, which have been working on silver ores, and they will probably have to stop also for a time. In Montana, while there may be a stoppage of silver production, the extensive copper and other interests will prevent a general stoppage of mining such as is threatened in Colorado, and will make the situation much less difficult.

In Utah and Nevada all the prominent companies have already closed down. Among them may be mentioned the Diamond, Daly-West, Jordan, Galena, Bullion-Beck, Crescent, Anchor and Yosemite.

In Montana the Alice, Moulton, Lexington and Gagnon have given notice to their men that work will stop with the week.

The effect on mining stocks at New York and other points has, of course, been a general decline in all the silver stocks, and, strange to say, in stocks of gold mines also. To a great extent this decline seems to have been unreasonable. The decline in silver stock might, of course, be expected, but at the same time a gain in gold mining stocks might be looked for, but has not occurred.

According to the latest dispatches the Mexican Secretary of the Treasury has announced that there is no probability that the country will suspend the free coinage of silver. On the contrary, all of the Mexican mints will continue to work to their full capacity, and that of the chief mint in the City of Mexico will shortly be increased from $14,000,000 to $18,000,000 a month by new machinery which is now being put in. The Secretary claims that there is a scarcity of circulating medium in the country due mainly to the heavy export of Mexican dollars to Asia, where there has been for many years a steady market for Mexican silver. It is claimed also that the heavy fall in price will not be as injurious in Mexico as in the United States, owing to the low cost of production of many of the Mexican mines. This claim, however, will be disputed by our own producers, who are inclined to think that improved machinery and methods more than equal the advantages of cheaper labor enjoyed by the Mexican operators.

Dispatches from Valparaiso state that the fall in silver has caused much excitement in Chile and Peru, and there is a strong probability that many of the mines in those countries will be closed down, leaving at work only those which have exceptional advantages of position in aiding them to turn out silver at a low rate.

The Survey of Labrador.—Two engineers connected with the Geological Survey of Canada left Quebec June 23d on a long and perilous exploring trip into the wild and inhospitable territory known as the Labrador peninsula. The expedition will be absent from civilization for nearly two years, and before its return to Quebec hopes to have solved the enigmas of the great Lake Mistassimi and of the cataract of the Hamilton River, concerning which such fabulous tales have been told. It expects to traverse the interior of Labrador from south to north as well as from west to east, to visit Ungave Bay in the extreme north and Hamilton inlets in the extreme east.

Topographical Survey of New York.—At the last session of the New York Legislature an appropriation of $30,000 was made for continuing the topographical survey of the State. Of this sum $24,000 has been expended under the joint jurisdiction of the State Engineer and Surveyor and the Director of the U. S. Geological Survey, it being stipulated that the United States shall contribute an equal amount toward carrying out the project. The Director of the Geological Survey, Major Powell, has just completed arrangements with the State Engineer, under which work will be carried on during this summer and fall. It is provided that the work shall be based upon the triangulation of the Coast Survey, the Lake Survey and the New York State Survey, and when the triangulation is deficient it shall be supplemented by the Geological Survey. The scheme contemplates a scale of about 1 in. to the mile, with 20-ft. contour lines, being the same plan adopted in the joint surveys of the New England States and the Geological survey. It is proposed to make 22 sheets this year, each about 15 × 20 in., and each including 225 square miles of territory. Two of these sheets will be made from surveys near Rouse's Point, three in the eastern portion of the Adirondack region, three in the vicinity of Whitehall, Washington County; two on the Hudson, about Kingston and Catskill; two in the Mohawk Valley, near Fonda and Amsterdam; two about Oneida Lake in the vicinity of Syracuse; three in the neighborhood of Watertown, Jefferson County; two near Elmira and Ithaca, and three in the neighborhood of Buffalo and Niagara Falls. It is estimated that the entire work will occupy about ten years, and that the result will be a map composed of about 200 sheets and part sheets, each 20 × 15 in., which will give a complete topographical chart of the entire State of New York. The work is of importance, as at the present time the officials of the Geological Survey declare that with the single exception of Maine less is known of the topography of the Empire State than of any other State in the Union.

MINING AT THE COLUMBIAN EXPOSITION.

Specially Reported for the Engineering and Mining Journal.

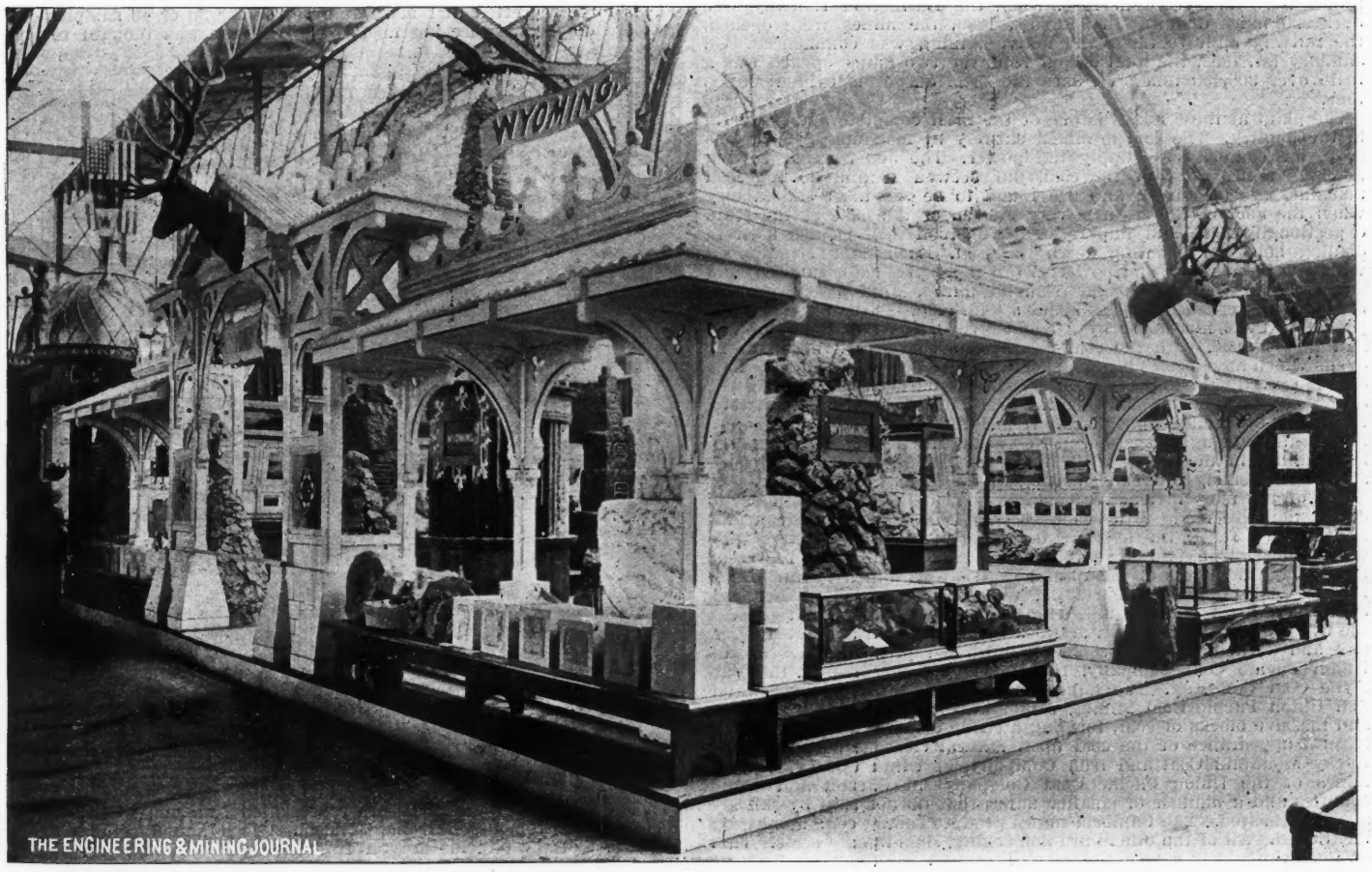
THE WYOMING STATE EXHIBIT.

The States and Territories of the Far West are popularly known as large producers of the precious and of the more valuable of the base metals. Little is known of the cheaper, but even more important, grades of minerals produced further than that they are to be found and are mined to some extent. Those States that do not make a good showing as precious metal producers are apt to be regarded as almost devoid of mineral wealth. The State exhibits in the Mines Building at the World's Fair largely remove this impression, and show that most of the States and Territories of the West possess a marked individuality, and they are each, along certain lines, rich in minerals and ores of value. One can see at a glance that silver and lead are the most important of the many and diverse mining industries of Colorado; that copper is pre-eminently the important factor in Arizona mining; and so it is to a less degree with many other States. No State, perhaps, possesses a greater individuality than Wyoming which in many respects more closely resembles an undeveloped Pennsylvania than it does the States that surround it.

This State early recognized the importance of representation at the World's Fair, and appropriated $30,000 for this purpose, a sum small compared to most appropriations, but generous when the population of the State is considered. One of the results of this appropriation is the mineral display, which is one of the most massive in the building. It contains in all about 50 tons of ore and coal, and is installed in an imposing and substantial manner. The illustration accompanying this article gives a general view of the exhibit.

The space, which is 30×42 ft., is completely covered with a raised platform. It is inclosed on the two sides facing aisles by a pavilion of somewhat elaborate design, painted in ivory and gold, and so arranged as to leave a space about 2 ft. in width on the outside. On this there are massive oak benches, on which building stones, cases of iron ore and other heavy specimens are shown. The other two sides of the space are inclosed by partitions, which are concealed below by flat topped cases of oak for small specimens, and, from the top of these, by three solid rows of handsomely framed photographs. Some of them are very large and impressive. They were all taken by W. H. Jackson, of Denver, Colo., who made a special trip across the northern portion of the State from the Black Hills to the Yellowstone Park to procure them. They include the best views of the National Park, and many others of superb mountains and lakes that are almost unknown to civilized man. These photographs are not only handsome in themselves, but they afford an excellent relief to the massive economic display.

The most unique exhibit is the samples of sulphate and admixtures of sulphate and carbonate of sodium which occur in large deposits in several widely separated localities. These salts occur in deposits known as lakes in the lowest portions of small basins that have no outlet for drainage. They undoubtedly arise through the evaporation of mineral waters. In the winter and spring they are covered with a foot or more of water. As the dry and warm season begins the water evaporates and leaves a superficial deposit of very pure crystals several inches thick. Beneath these there is always a layer of blue mud, that has a strong smell of sulphuretted hydrogen. The main deposit lies beneath this mud, is massive, and breaks with a coarse crystalline cleavage. It is almost always contaminated with thin layers and pellets of clay and other insoluble impurities, but otherwise is usually quite pure. The best known deposits, but not the most extensive, in the State are called the Union Pacific Lakes. They are about fifteen miles from Laramie, on the Union Pacific Railway, with which place they are connected by a branch. The lessees, Stephen Paddon & Co., of Chicago, worked the deposits last year, and calcined the natural soda, taken from the superficial crust, at Laramie. They shipped about 2,000 tons of the calcined soda to glass works in Illinois, and were so satisfied with the results that they intend to greatly enlarge their capacity. The soda is practically pure, and sells at a higher figure than the best English salt cake. That shipped East was largely used as a substitute for soda ash in the manufacture of plate glass. The most massive sample of soda on display, a cube weighing more than 6,000 lbs., is of the sulphate of sodium taken from the Union Pacific Lakes. The water on the lakes this spring prevented a cube being taken from the original deposits, and the cube was made artificially by dissolving the pure crystals, taken from the deposits last year, in hot water, and allowing the saturated solution to cool in a water-tight box. Owing to the fact that all mechanical impurities have been thus separated, this sample is nearly chemically pure. The thickness of this deposit varies greatly, but it is stated on good authority to be 40 ft. at one point.



THE WYOMING STATE EXHIBIT IN THE MINES AND MINING BUILDING.

The soda lakes belonging to S. W. Downey, of Laramie, are represented by a 3-ft. cube and a block 2 ft. square by 3 ft. high, which were cut from the solid deposit. Together, the two pieces weigh nearly 5,000 lbs. Smaller samples from six other deposits are built in a pyramid under a large glass case. Among them the Gill soda, taken from the main deposit beneath the blue mud referred to, is particularly noticeable on account of its purity. The following partial analyses, made by H. L. Hollis & Co., of Chicago, represent an average of some of the samples on exhibition:

	1.	2.	3.	4.	5.	6.
Water	51·52	40·60	53·71	51·32	59·67	41·96
Sulphate of sodium	47 13	51·71	14·80	16·99	9·11	52·20
Carbonate of sodium	·00	5·65	18·84	21·21	30·74	3·64
Insoluble residue	1·55	0·25	7·55	8·54	0·03	1·19

No. 1, Gill lakes, Natrona County, sample of main deposit. No. 2, Morgan Lake Fremont County, sample of superficial crust. Nos. 3 and 4, Dupont large and smal lakes, Natrona County, sample of main deposit. No. 5, Wyoming Syndicate Improvement Company, Natrona County, product attained by evaporating natura solutions. No. 6, Wyoming Central Association, superficial crust.

The insoluble residue of these deposits consists of pellets of clay and some gypsum, and in working them extensively it is probable that it will be found advantageous to dissolve the soda to a saturated solution in warm water, and, after the mechanical im-

purities have settled out, to allow the solution to cool and the crystals to separate. It is difficult to estimate the cost of mining and calcining the pure natural soda, as the work has not yet been inaugurated long enough, but it is estimated that the practically pure calcined sulphate can be made on an extensive scale for about $3 per ton in Wyoming. Accompanying the soda display there are a number of cylinders of very clear glass, some of which were made at Laramie, Wyoming, out of calcined natural soda and sand and limestone, excellently adapted to glassmaking, both of which occur in large deposits in the upper carboniferous measures just without the city limits. Others were made in Illinois out of Eastern sand and limestone, with Wyoming natural calcined soda.

The coal of the State is represented by a number of massive columns, all placed on a raised platform to the left of the main entrance. The central column is 24 ft. in height and represents the coal of the seam in Weston County operated by the Cambria Mining Company. This pyramid is divided into three sections of nearly equal height. The base is made of four massive blocks, 4×3 ft.×22 in. high. Together they represent about the thickness of the seam, as developed in the Jumbo mine, between 7 and 8 ft. The next section is built of lump coal, and the upper 9 ft. of coke made from the coal cuttings. These mines are situated in the southwestern foothills of the Black Hills, in northeastern Wyoming. Unlike all other coals of the State, it occurs at the base of the Dakota group of the cretaceous formation. The seam outcrops on the sides of canyons, and is nearly horizontal. Both the roof and floor are sandstone. The mines were discovered in 1888, when the Burlington Railway was over 200 miles distant. In January, 1890, the mines were opened, the railway built to them and active mining was commenced. On January 1st, 1893, the total output from the two mines opened was a little over 900,000 tons. To date the total output is over 1,000,000 tons.

The plant at these mines is one of the most complete and powerful in the country. The coal is mined entirely by machinery. Four 250-h. p. air compressors supply the power. The Jeffrey coal cutting machine mines most of the coal, but betwen 20 and 30 Ingersoll machines are also used, and are found to be the most satisfactory when the floor of the seam is very uneven or the base of the seam expectionally hard and impure. The Ingersoll drill is also used in drilling holes for shooting down the coal. Each mine is equipped with a very complete and powerful tail rope system for underground haulage. The coal, as brought from the mines, is all passed through breakers and crushed to pass about a 6-in. ring. Part of the slack is passed to the boiler-house by a belt conveyor; part of it is shipped; and the balance, with the coal cuttings, is coked in a bench of 25 ovens which have been put up a short distance below the mines. This coal is exceedingly important on account of its location, it being the only really good steam coal thus far found in the Northwest, between Iowa and the Yellowstone Park. It is largely used as a locomotive fuel on the Burlington system, in Nebraska and Wyoming, also at the large mines in the Black Hills in South Dakota. The coke is used almost exclusively for lead smelting in the Black Hills.

One of the most instructive columns is made of a series of seven cubes, that are made to a scale, so that each 2 in. of their height represents 1 ft. of the average thickness of the seam where they were mined. The two lower cubes, 32 and 24 in. high, represent the average thickness of the 16 and 12 ft. seams mined by the Union Pacific Coal Company, at Hanna, Carbon County. The other five cubes have a 21, 14, 12, 8 and 6 in. edge, respectively, and represent the five seams of coal mined at Rock Springs, which average 10½, 7, 6, 4 and 3 ft., respectively. The first three represent mines of the Union Pacific Coal Company, the last two the seams of the Van Dyke Coal Company. The mines of the Rock Springs, Sweetwater and Union Pacific Coal Mining companies are represented by large and massive blocks of coal, forming a rustic column and showing the natural appearance of the coal upon natural clearage surfaces. The Rocky Mountain Coal and Iron Company, of Uinta County, various mines of the Union Pacific Coal Company in Carbon and Uinta counties and a number of smaller mines that do not ship by rail are also represented. The Cambria mines produce coking coal, as already mentioned. All of the others are non-coking, semi-lignate coals. That of Rock Springs is a good steam coal and one of the best domestic fuels produced in the West. It is used extensively in Colorado, Nebraska, Kansas, Utah and Montana. Over 1,000,000 tons are now mined at Rock Springs annually.

The cost of mining coal in the State necessarily varies. Machines are only used in the Cambria and one of the Union Pacific Rock Springs mines. The price paid miners for coal loaded on cars varies, but probably averages 75 cents per long ton, with one-fourth off for slack. Last year lump coal f. o. b. at the mines on the Union Pacific Railway sold for $1.75 per ton. This spring the price was reduced to $1.50 per ton. The freight charged varies, as other coals compete in the market. Throughout Wyoming, Utah and Idaho the Union Pacific freight charges are about 1 cent per ton per mile. The rate is somewhat less to Butte, where the Rock Springs coal is extensively used in roasting and matting. The rate to points in eastern Nebraska and Kansas and in California does not exceed ½ cent per ton per mile.

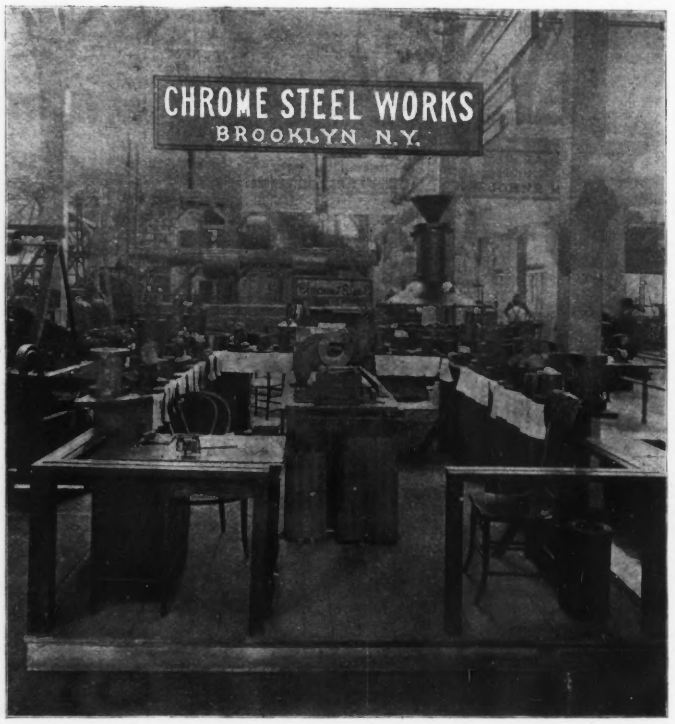
The growth of the coal mining industry in the State from 1870, when the output was 50,000 tons, is very satisfactory. The production during the past ten years, shown in the following table, is taken from "The Mineral Industry," where is given the production yearly from 1870:

Calendar year.	Short tons.	Calendar year.	Short tons.
1883	779,639	1888	1,481,540
1884	902,620	1889	1,388,276
1885	807,328	1890	1,870,366
1886	829 355	1891	2,327,841
1887	1,170,318	1892	2,322,787

The display of iron ores is especially massive and complete, the most important ores being hematites. These are represented by samples from eight of the claims of the Wyoming Central Association in Carbon County. Two samples are from the public domain in Crook County; samples of the almost chemically pure hematic from near Rawlins, Carbon County, and other specimens, including a very complete series of hematites from the numerous claims of the Wyoming Railway and Iron Company, in Laramie County. One pyramid of about ten tons of hematite is made up of ore from four of the deposits of the latter company. Other samples of both the hard and soft ores from their claims are represented in lots ranging from 50 to 400 lbs. These ores occur in great lenticular masses in chloritic and micaceous schists. At least five different lenses have been discovered. The width of the ore masses has been developed in but one case, where it is from 150 to 200 ft. wide. In several other cases the ore bodies are known to be more than 90 ft. thick, although both walls have not been found. Many samples of the ores of these deposits have been taken by various mining engineers, and the fact is demonstrated that much of this hematite is very superior Bessemer ore; and while the deepest shaft is but 120 ft. and the developments comparatively small, all unite in saying that there are many hundred thousand tons of ore in sight already. As far as developments go, the district probably shows more ore on the same area than any other district in the United States. The following partial analyses show the composition of three grades of this ore:

	No. 1.	No. 2.	No. 3.
Metallic iron	69·15	63·70	67·15
Silica	1·62	7·90	3 64
Phosphorus	0·0·7	0·046	0·082
Sulphur	0·006	0·004	0·001

It is to be regretted that more analyses of the 30 or 40 samples of iron ore displayed were not made. The expense was thought to be too great.



The petroleums of the State are represented by some 15 samples, chiefly from Fremont, Natrona, Johnson, Crook and Weston counties. Most of the oilfields are far from the railroads, and there are as yet no facilities for transporting it. While there has been some drilling, most of the samples come from springs or seepages. However, four of the samples come from the following wells: From the three Murphy wells near Lander, the well near Bonanza, Fremont County, the wells of the Pennsylvania Oil Company on Salt Creek and the Anglo-American Oil Company on Powder River. Johnson County. A fine display comes from the seepages on the undeveloped properties of the Wyoming Central Association. Most of these samples represent heavy lubricating and fuel oils of a specific gravity of from 23° to 25° B. Two of the samples, however, have a gravity of over 30° B.

Many other mineral products are represented in the exhibit, including some newly discovered gold ores and some fine samples of copper ore and asbestos. Many samples of building stones, gypsum and the plaster made from it, sulphur, clay and brick, tin ores, stream tin, polished agates and marble, and many other substances are represented and worthy of representation. Altogether this young State has a very massive and creditable display, especially when it is remembered that, with the exception of the coal display, almost every specimen had to be gathered and shipped from 20 to 200 miles to the nearest railroad point by wagon. The Board of Managers are to be congratulated for their energetic work, which has secured for Wyoming an exhibit to be proud of, and the greatest credit is due to Mr. Louis D. Ricketts, the well known mining engineer, of Cheyenne, Wyo., who has had charge of it.

SOME MACHINERY EXHIBITS.

The fine exhibit of the Chrome Steel Works, in the northeast section, Column 14 S, Mines Building, is certainly a unique one. It is far from what may be termed attractive at first sight, but mining men and others who know the products of this company will find there as in-

teresting an exhibit as any in the building. The exhibit consists of chrome steel castings, which are particularly adapted for use where extra durability, strength and toughness are required. Among the castings are battery shoes and dies, cams, tappets, etc., for stamp mills; spinning and stamping dies used by tinware manufacturers; gear wheels, hammer dies, and also the company's combination plates of welded chrome steel and iron used in the construction of burglar-proof safes, vaults and prison cells. The specimens displayed are chiefly worn-out castings; in fact, the company have made this a feature. The specimens as named above are the contribution of mines throughout the United States, and almost every mining district has its representation. Each specimen is labeled with a report from the mine superintendent under whose management they were used, stating the length of service, quality and quantity of ore crushed, and other information of value and interest to the mining community. The castings show remarkable evenness in wear and longevity before being finally discarded. The display of combination plates used in the construction of safes and vaults in some of the largest financial institutions in the country is particularly interesting. The exhibit is in charge of Mr. John B. Power, who is ready to give information to all who call. The exhibit is shown in the accompanying engraving, from a photograph.

THE COOSA COAL FIELD IN ALABAMA.

Written for the Engineering and Mining Journal by W. M. Brewer.

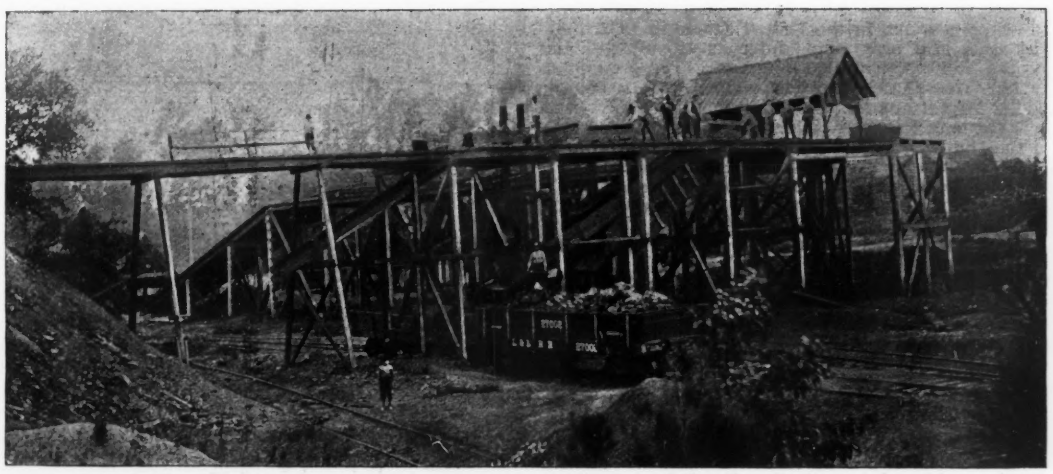
This field, taking its name from the Coosa River, which drains it, is situated in St. Clair and Shelby counties, in Alabama. The extent in the first named county is estimated by geologists at about 150 square miles; but only about 30 square miles have been thoroughly prospected, and systematic mining operations at present are only being conducted at two points in that county. The fact that a large portion of this field lies at a distance from a railroad is the reason for this. This field belongs to the great Appalachian coal field, as also do all of the deposits in Alabama. The mountain range in which the coal seams of St. Clair County are found is in the southern extremity of the Blue Ridge, the course of which, from northeast to southwest, can be easily traced across northwestern Georgia into Cherokee County, Alabama, thence in the same direction across the Coosa River into St. Clair County, near the northeastern boundary. The great fault, as it is locally denominated, which divides the carboniferous from the silurian formation, can also be easily traced from the Coosa River at Greensport in an almost due westerly direction, thereby showing that Ragland is near the northeastern extremity of this section of the field, and Coal City or Broken Arrow, twelve miles distant, near the southwestern extremity; in fact, three-quarters of a mile south of Coal City the extreme southern outcrop of workable coal of this field, or rather that section lying in St. Clair County, is encountered, so far as present developments have demonstrated. In the northeastern portion of this field only one workable seam has been discovered which shows an average thickness of about 32 inches. The workings here consist of a slope run in on an angle of about 15° for 550 ft. in a course 50° east of south with the pitch of the coal seam. At that point the seam flattens to a 5° angle, and the slope has been extended in the same course 150 ft. to the present face. Six side entries have been made. Three of these are run toward the east and three toward the west. In all of these the seam of coal preserves its average thickness, with but an inch or two variation at any point. The dimensions of these entries are as follows: No. 1, 300 ft. from mouth of slope, in 578 ft., worked out; No. 2, 120 ft. from No. 1, in 578 ft., 15 rooms working; No. 3, 110 ft. from No. 2, in 80 ft.; West No. 1, 330 ft. from mouth of slope, in 575 ft., 15 rooms working; No. 2, 120 ft. from No. 1, in 326 ft., 8 rooms working; No. 3, 150 ft. from No. 2, break being made.

Rooms are broken in at intervals of 36 ft. along the entry, being broken 12 ft. wide, and the coal taken out for 24 ft. at the same width; at this point the room is widened out to 24 ft., and the coal taken out from that width to the air course above, which is run 16 ft. below each entry. By this system pillars of solid coal are left to support the roof of the mine, and upright timbers are added in the rooms to prevent any danger from its falling in. In this mine the roof or hanging wall is a very hard and solid slate, no bituminous shale nor other detriment to a solid roofing having been encountered. Below the coal is a stratum of fireclay averaging from 18 to 24 in. in thickness, then sandstone. By a system of carrying the steam pipes in one of the air courses and exhausting in the same the temperature of the underground workings is kept quite cool.

Washing machinery is being erected at the mouth of the slope, so that in future the run of mine will be screened and washed there instead of being only screened at the slope, and the slack hauled to the coke ovens at Ragland, transferred by elevators to the washers, and reloaded for blacksmiths' consumption or elevated into the bins to supply the coke ovens. The new machinery will have a capacity for handling, or rather elevating, and washing 200 tons of slack coal per day. At Ragland the works consist of 10 Thomas coke ovens, with a capacity of nearly 40 tons per day of 72-hour coke, and coal washers which were erected here some three years since when the coal was mined and hoisted from a vertical shaft directly connected with the washers and elevators.

Mining operations are at present carried on about three-quarters of a mile west of these works, but on the same seam. The analysis of coke manufactured from the slack coal from this mine, as given by Wm. Makemson, chemist for the Woodstock Iron Company at Anniston, is as follows: Fixed carbon, 80·30%; sulphur, 0·768; ash, 15·80; volatile matter, 1·13. At the Atlanta Water Works, where St. Clair coal is used, the average pumping capacity to 100 lbs. of coal is 18,4⅜6⅜ gallons of water. By careful computation the actual shrinkage in the manufacture of coke from this coal is 33%.

The workings at Coal City or Broken Arrow are more extensive, consisting of two slopes, the one shown in the illustration, No. 1 having been run in on an angle of about 20° in a course south 40° west for a distance of 300 ft., at which point a local fault was encountered in the formation, and a change was necessary in the course of the slope to a direction south 10° west, in which direction the slope was continued to the bottom, 830 ft. from the mouth. Four side entries have been made from the slope, each running south 10° east. No. 1 is in 2,200 ft.; No. 2 in 2,445 ft., run through to the outcrop; No. 3 in 1,700 ft., and No. 4 in 1,050 ft. The seam of coal exposed in these workings holds an aver-



SLOPE NO. 1, COAL CITY MINING COMPANY, COAL CITY, ALABAMA.

age thickness of about 3 ft. 8 in. In No. 2 slope about half-mile distant in a southwesterly course, the angle is about 21° and the course south 10° west. This slope has only been run in about 450 ft. to the face, and two side entries broken, one to the east, at present in about 50 ft.; the other to the west, 30 ft. The average thickness of this vein is also about 3 ft. 8 in. In fact, both the slopes are run in on the same vein of coal. The roof or hanging wall over this vein is composed of some 2 ft. of bituminous shale before the solid slate wall is encountered, and consequently the mining cannot be done so economically as where the solid slate immediately overlays the coal. Below the stratum of coal is one of fireclay some 3 ft. thick, then sandstone, as in other sections of this same field. The bituminous shale is only encountered in this section in the workings on this property. At this, the southwestern end of the coalfield, there are outcroppings showing seven workable veins of coal, but no work beyond prospecting with a churn drill to locate the general course has been done on any except on that described, which is known as seam No. 3 in the following list: No. 1 is 2 ft. thick, dip south 10° west; No. 2 is 250 ft. below and 3 ft. thick, dip the same; No. 3 is 275 ft. below and 3 ft. 8 in. thick, dip the same; No. 4 is 450 ft. below and 3 ft. 6 in. thick, dip the same; No. 5 is 75 ft. below and 14 in. thick, dip the same; No. 6 is 80 ft. below and 2 ft. thick, dip the same; No. 7 is 500 ft. below and 4 ft. 6 in. thick, dip the same; No. 8 is 500 ft. below and 3 ft. thick, dip the same. Local seam outcrops between Nos. 7 and 8 showing a thickness of 9 ft., with the same dip as the others. In the No. 1 slope the bottom has nearly reached the basin where the coal seams should be found in their original horizontal positions; this is demonstrated by the decrease of the angle in the dip of the vein. The coal basin toward which both slopes are headed is estimated to be about 1½ miles in diameter, and from the prospecting of Mr. Herbert, superintendent of the mine, the veins there appear to be dipping toward a common center at different angles from the circumference. This circle contains about 1,400 acres.

The coking capacity at present is 60 beehive ovens, but the Coal City Mining Company propose to add 50 Thomas ovens very shortly. The analysis of the coal at Coal City, taking an average of the whole seam, is as follows: Fixed carbon, 64·145; sulphur, 0·425; ash, 4·10; volatile matter, 31·33. The analysis of coke shows: Water (due to absorption)

expelled at 212° Fahr., 0·79; volatile combustible matter, 0·58; ash, 5·61; fixed carbon, 93·02; sulphur, included in the above, 0·74.

The actual mining operations at Ragland are being carried on by the Ragland Coal and Coke Company as successors to the St. Clair Coal Company, with Wm. Harris as superintendent of mines and J. R. Brown general manager. At Coal City operations are conducted by the Coal City Coal Company, with S. Noble, of Anniston, president; W. P. Laramore, vice-president and general manager; Chas. T. Freeman, secretary; S. E. Noble, Anniston, treasurer; Wm. Herbert, superintendent of mines. Both these companies lease the mines they operate, those at Ragland being the property of the Trout Creek Coal and Mining Company, which owns 500 acres, and those at Coal City the property of the Broken Arrow Coal and Mining Company, which owns 3,200 acres. Besides these, about 2,000 acres of coal land in this vicinity are owned by other corporations and individuals along the line of the East & West Railroad of Alabama, but no openings except for prospecting have been made besides those described. At one other point coal was mined before the War, but at present the workings cannot be examined.

The acompanying illustration shows the hoisthouse at Slope No. 1, Coal City, with tipple, chute and platform for handling trams; the mouth of the slope is in the background. The coal from both the slopes on this property is not at present washed, as at Ragland; but it is the intention of the company to add washing machinery when the Thomas ovens are built. The markets for the coal from both Ragland and Coal City are at Atlanta, Port Royal, Macon, Cartersville and Cedar Town, in Georgia, and in Alabama the city of Anniston consumes a large proportion of the coal and nearly all the coke. At present, however, the railroad facilities for shipping to Anniston are not as good as they ought to be on account of a break of gauge making necessary a transfer from the East & West Railroad to the East Tennessee, Virginia & Georgia Railroad.

MANGANESE PRODUCTION OF THE UNITED STATES.*

By R. A. F. Penrose, Jr. Ph. D.

The production of manganese ore in the United States in 1892, independent of manganiferous iron ores, manganiferous silver ores, and manganiferous zinc ores, was about 17,000 long tons. The production for the census year 1889 was 24,197 long tons, valued at $240,559, or $9.94 per ton; while the largest annual production in this country was that of 1887, when 34,524 long tons were mined. The total production of manganese ore in the United States from the time it was first mined, over 30 years ago, up to December 31st, 1892, has been almost 300,000 tons. As the United States consumes annually something over 50,000 tons of manganese ore in the various industries to which this material is applied, during the year 1892 it produced less than 50% of its consumption. The remainder came mostly from Cuba, Canada, Russia and Chile.

Manganese has been found in many places in North America, but it has been mined profitably in only a few of them. At present Virginia, Georgia, Arkansas, Colorado, and to a lesser degree California and the Canadian Provinces of New Brunswick and Nova Scotia furnish practically the entire output of the United States and Canada. Vermont has in the past produced a considerable amount of manganese and manganiferous iron ores, but at present its mines are idle. Small quantities have also been mined in Pennsylvania, Tennessee, North Carolina, South Carolina, Missouri, Michigan and Nevada, but the production of these States has been insignificant. Manganese occurs in Central Texas, but no ore has been shipped from that region; it has also been found in Alabama, though no important deposits have yet been developed.

Virginia, up to the present year, has always been at the head of the manganese producers of this country. Georgia has usually been second, with Arkansas third. In 1892, however, Arkansas produced probably more than Virginia, and considerably more than Georgia. The production of Virginia in 1892 was unusually small, being only about 5,000 tons. This was due to the fact that the principal producer in that State, the Crimora mine, was closed the larger part of the year. The production of Georgia was about 2,000 tons. In Arkansas there was unusual activity, and the production was about 6,000 tons, which is more than that State ever produced before in any one year. Colorado produced about 4,000 tons of ore, containing from 25% to 40% of manganese. In Canada, which usually furnishes an important quantity of the ore, only 85 tons were mined in 1892, and this amount came from the Provinces of New Brunswick and Nova Scotia and from the Magdalen Islands. The island of Cuba shipped about 18,000 tons in 1892.

The above six regions, therefore—that is, Virginia, Georgia, Arkansas, Colorado, Canada and Cuba—produced in 1892 about 35,085 tons of manganese ore, which quantity represents almost the entire manganese production of North America in 1892.

Manganese was first mined in the United States in Tennessee, in 1837, but the production was small, and the amount mined there and elsewhere in the United States previous to 1880 is very uncertain. The figures in the table given herewith were compiled from the best available sources; those for 1892 were specially collected by the writer. The chief market for manganese ores is found among the steel manufacturers.

The metal manganese occurs in nature in a great number of different forms, but the only ones that are, according to present standards, applicable to any considerable extent in the arts are the oxides and the carbonates. The latter, though of frequent occurrence in small amounts, are so rarely found in large quantities in America that the oxides represent practically all the ores of manganese now used in this country. Besides these, numerous other manganese-bearing minerals are found, which, on account either of their chemical composition or of their limited quantity, are not available as sources of manganese. In some special cases, where such minerals are worked as a source of other metals, their residue has been profitably used for its contents of manganese. This is the case with the zinc ores of northern New Jersey, which contain a considerable percentage of manganese, and, after the extraction of the zinc, the residue is used in the manufacture of spiegeleisen.

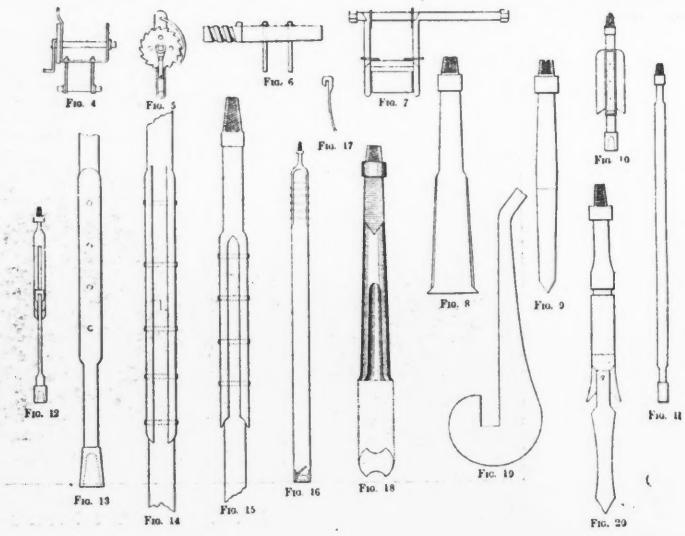
Among other recent uses, manganese steel, on account of its remarkable combination of great hardness with great toughness, recommends itself especially as a material for making car wheels. They must resist the abrasion of the brakeshoe and of the track, and should be at least moderately tough, so that they may endure safely the blows which they receive on striking frogs and crossings. Mine-car wheels, indeed, often strike other obstacles violently, and they are especially subject to abrasion, for in many mines they are set fast, or spragged, and slid down the whole length of the inclined road. Under these conditions cast iron wheels flatten quickly; thus far manganese steel wheels have never flattened. They excel cast iron wheels not only in toughness and endurance, but also in lightness, for manganese steel is so strong and the methods of casting it are so well in hand that wheels made of it are very much lighter than cast iron wheels can safely be. A little over a year ago mine-car wheels of manganese steel were set at work in a large Pennsylvania anthracite mine. They gave such remarkable results that their use is now spreading rapidly through the anthracite region, and should also extend widely in other mining regions, especially in remote ones, where the freight charges are severe, and where, therefore, both great endurance and lightness are important.

Making mine-car wheels is relatively simple; but in trying to make solid cast manganese steel railroad wheels serious difficulties were met. We understand that they have now been completely mastered, and that these wheels are soon to be offered in the market by the Taylor Iron and Steel Company, of High Bridge, N. J.

* From "The Mineral Industry" for 1892. Copyrighted by the Scientific Publishing Company. The article contains, besides the extract here given, a full account of the various ores of manganese and their occurrence.

PRODUCTION OF MANGANESE ORES IN THE UNITED STATES.

Year.	Virginia, Long Tons.	Arkansas, Long Tons.	Georgia, Long Tons.	Other States, Long Tons.	Total, Long Tons.
Previous to 1880	18,000	200	19,950	6,850	45,000
1880	3,661	....	1,800	300	5,761
1881	3,295	100	1,200	300	4,895
1882	2,892	175	1,000	375	4,532
1883	5,355	400	.....	400	6,155
1884	8,980	800	.....	400	10,180
1885	18,745	1,483	2,580	450	23,258
1886	20,567	3,316	6,041	269	30,193
1887	19,835	5,651	9,024	214	34,524
1888	17,646	4,312	5,568	1,672	29,198
1889	14,616	2,528	5,208	1,845	24,197
1890	12,699	5,339	749	6,897	25,684
1891	16,248	1,650	3,575	1,943	23,416
1892	5,000	6,000	2,000	4,000	17,000



TOOLS USED IN DRILLING OIL WELLS IN GALICIA.

Volatility of Manganese.—At a recent meeting of the Academy of Science in France, M. S. Jordan presented a note giving some experiments recently made by Messrs. Lorenz and Hoesler, which fully confirm the statement previously made by him that manganese could be volatilized at the temperatures obtained in metallurgical furnaces. The experiments mentioned were undertaken to ascertain whether manganese would combine with carbonic oxide, and were made with a gas furnace designed by them. The results proved: 1. That in a current of carbonic acid passed through a porçelain tube over metallic manganese heated to a white heat part of the gas was reduced by the metal, while at the same time a part of the metal itself was volatilized. 2. When the current was of carbonic oxide there was still volatilization of part of the metal, while the flame proceeding from the end of the tube showed in a spectroscope indications of the presence of manganese. 3. In a current of dry hydrogen identically the same phenomena were observed. 4. In a current of nitrogen, the phenomena of volatilization of the metal were repeated, but the manganese did not combine with the nitrogen as chromium does. From these experiments Messrs. Lorenz and Hoesler concluded that carbonic oxide does not act upon the manganese, but that it is volatilized from the metallic form at a temperature a little above its fusing point.

THE PETROLEUM INDUSTRY OF AUSTRIA-HUNGARY.*

By Arthur W. Eastlake.

In the Province of Galicia the oil springs have existed from time immemorial, but the active development of the industry dates only from the introduction of the Canadian system of drilling, in 1882, since which time it has made rapid strides. Previously the method of obtaining the oil was rude and primitive, even after the introduction of steam power, and it was considered a creditable achievement to sink a well to such depths as 200 ft. or 300 ft., an operation which took many months. The Canadian system of drilling may be said to have completely revolutionized the industry. It has now almost totally superseded all other methods of drilling, and wells of 1,200 ft. or even 1,500 ft. are constantly being sunk. The oil zone is situated on the northern flanks of the Carpathians, and extends from Neu Sandez in the west to Sloboda-Rungorska, near Kolomea, in the east, a distance of about 220 miles, the oil belt being about 40 miles in width. Its general direction is northwesterly and southeasterly. The oil industry in Austria-Hungary is protected by an import duty of 10 florins per 100 kilograms on refined oil, and 2 florins 40 kreutzers on crude petroleum. Galicia does not produce sufficient oil to supply the requirements (1,750,000 barrels) of the Austrian-Hungarian Empire, and the deficiency (750,000 barrels) is chiefly imported from Russia.

Common labor is plentiful and cheap in Galicia, 20 cents to 25 cents per day being the average wage. Skilled labor, however, is not so abundant; indeed, it is frequently difficult to obtain a really good smith, carpenter or machinist. The men working at the drilling rigs, as pole-wrenchers and scaffold-men, obtain from 40 cents to 50 cents per day of 12 hours. The wages of a good smith vary from $25 to $40 a month. Other men who have any claim to be reckoned as craftsmen get on an average about $25 a month. Galician drillers get about $50 a month, and often a certain small sum (generally a florin, or say 40 cents) for each metre drilled. The drilling is often taken by contract at prices ranging from $1.50 to $2 per foot, the contractor finding the labor required for the actual drilling, and the owner of the well providing the necessary plant, machinery, motive power and all other labor.

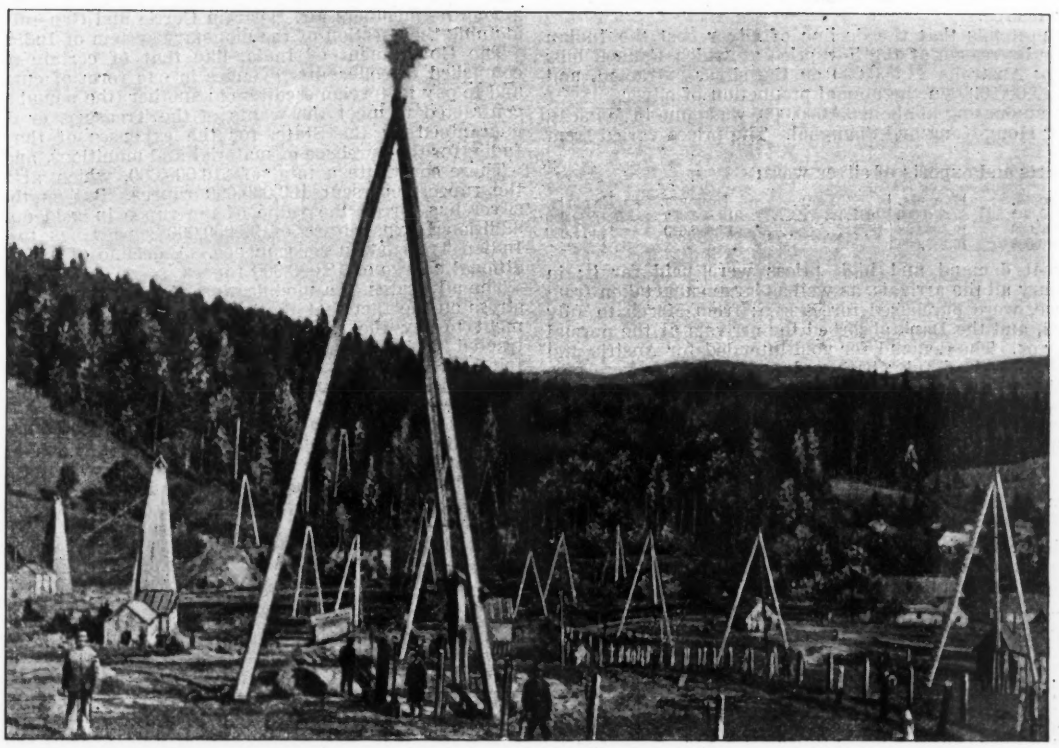
The quality of the petroleum obtained in Galicia varies considerably in different parts of the country, ranging from a heavy dark-green colored oil, with a specific gravity above 0·900 to a light reddish-brown colored oil with a specific gravity below 0·800. One of the petroleum properties, under the management of the author, yielded oil which burnt with ease in ordinary lamps without undergoing any process of refinement. This kind of oil is obtained at several places in Galicia, but has never been found in any considerable quantity, the wells sunk in this class of strata yielding as a rule only from half a barrel to two barrels per day. The specific gravities of the oil produced on the same property, and from wells close to each other, vary considerably. Refiners state that the percentage of burning oil varies from 40% to even as high as 70%. In the author's opinion the average would be about 50%.

Oil territories in Galicia are generally leased for 25 years, and the royalty payable to the lessor ranges from 10 to 40%, together with, in most cases, a certain amount in cash. The lessee has also to pay for any damage to crops, etc., and a small sum per annum for all land occupied by him. This statement applies chiefly to estates of large landowners. The small plots of land held by the peasants can be obtained much cheaper. In this case, as a rule, a small sum ranging from $25 to $100, and a royalty of a few dollars on each productive well sunk, paid to the peasant proprietor, will satisfy him for the grant of mining rights for 25 years, and in other cases a royalty of 1 to 5% is paid.

In locating wells it is the general custom to secure the services of the best-known geologist of the district. In commencing the development of a new territory, the best course to pursue is to ascertain the direction of the oil-belt by trial shafts, examination of outcrops, shows of oil and other indications, and then to sink wells across it about 75 to 100 ft. apart. A property would not be considered as properly tested if less than four or five wells had been drilled.

Many systems of drilling have been tried in Galicia, but the Canadian system, adapted and modified to suit the requirements of the country, has now practically superseded all the others. For this the derrick and engine employed are very similar to those used in America. The tools used are shown in the accompanying illustration; they include poles, jars, sinker-bars, guides, bits, chisels, sand pumps, reamers, wrenches, fishing tools and others, which oilmen will readily recognize. The larger engraving is a view in the oil regions showing several drilling rigs.

In drilling a well the work is done in 12-hour shifts from noon until midnight, and from midnight to noon. The average time in which a well of 1,000 ft. is drilled in Galicia on the Canadian system with Canadian drillers is about 58 days, although many wells are sunk in six weeks or even in less time. In the Sloboda-Rungorska field a well has been put down 680 ft. in 18 days, and at Kryg a well of over 600 ft. was finished in less than a week.



OIL WELLS IN GALICIA, AUSTRIA.

There are very few pipe lines in Galicia, the oil being mostly carted in barrels from the wells to the nearest station, a tedious, wasteful, and therefore costly and inefficient way of dealing with it—the roads on the lower slopes of the Carpathians being, except during a few months of the year, either covered with 3 ft. or 4 ft. of snow or knee deep in mud.

* Abstract of a paper entitled "Observations on Petroleum in Eastern Europe, and the Method of Drilling for It," read before the Federated Institution of Mining Engineers.

Low Prices for Steel Rails.—A contract for 12,000 tons of steel rails for the Imperial Chinese line was recently taken by Bolckow, Vaughan & Co., of Middlesborough, England, at about $18 per ton f. o. b. at the works. Belgian and German makers competed for the order.

Mining in Newfoundland.—Sir Terence O'Brien has forwarded to the British Colonial Office a report on the condition of Newfoundland during the year 1891, in which it is stated that mining statistics for the year show an increase in value of double that of the previous year. The shipments of copper and other ores were in 1891: Ingots, 1,139 tons; regulus, 3,626 tons; green, 7,060 tons, valued at $565,850; antimony, valued at $1,250; iron pyrites, 19,150 tons, valued at $57,900; selenite, 250 tons, valued at $1,200. Asbestos properties inland from the west coast have been worked by local and foreign capital. No shipments of that mineral were made during the year, but the reports from the several mines were encouraging. The geological survey for the year revealed the existence of valuable deposits of coals and other minerals in the vicinity of Grand Lake. In connection with the coal there are extensive clay-iron deposits of good quality, that freestones, grindstones, and whetstones are abundant among the coal measures, and that a great number of fireclay beds occur within the section. Marble is also met with near the upper end of the Grand Lake, and immense deposits were discovered on the Upper Humber, not far from the shores of White Bay.

THE PRECIOUS METALS IN 1892.

By Arthur Raffalovich.*

The following paper, translated from the French of Mr. Arthur Raffalovich, has been courteously communicated by Mr. Preston, Acting Director of the Mint:

The year 1892 was not a fortunate one for the producers or holders of the white metal. The average price of the year, 39 13-16d. London, was 5¼d., or 11½%, lower than that of 1891, which, in turn, was 4½% lower than the average price of 1890. At the beginning of 1892 silver was worth 43¾d.; the price gradually weakened until the end of March, when it touched 39d.; this was the lowest point of the first six months; the decline accompanied the rejection of the Free Coinage Bill in the United States, the passage of which was seriously believed in by few, but the failure of which, nevertheless, caused the price of silver to fall from 41d. to 39d. Low prices brought purchasers; orders from Spain and an improvement in exchange in India caused a reaction, and during the three following months the price fluctuated between 39½d. and 40½d. At the end of July another decline occurred, which reached its extreme point, 37⅞d., in the middle of August. Prices remained stationary between 38¼d. and 38½d. At the end of October the market became a little firmer, the idea of a solution by the Brussels International Conference having exercised an influence on the bankers and speculators of India; purchases brought the price up to 39d.; when the conference adjourned, December 20th, the price of fine silver was 37 15-16d. The year closed at 38 5-16d.

During the last weeks of 1892 there was quoted only disposable silver by the first steamer to sail for India; the reserve of purchasers was explained by this uncertainty as to the restrictive measures which the Government might decree.

Mr. A. del Mar pretends that the decline of silver cost the Indian Treasury £5,000,000 by reason of the low price at which Council bills are sold in London; Australia £1,500,000 on the silver extracted, and the United States £5,000,000 on the annual production of silver.

A large business, amounting to about £4,000,000, was done in Mexican dollars required for Hong-Kong and Shanghai. The prices varied from 42 3-16d. to 36⅞d.

The English imports and exports of silver were:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1888.....	£6,000,000	£7,8'0 000	1891.....	£10.500.000	£11,800,000
1889.....	9,00',000	10,500,000	1892.....	12,386,000	14,075,000
1890.....	10,300,009	10,5'0,000			

Gold was in great demand and high prices were paid for it; in January and February all the arrivals, as well as large sums taken from the Bank of France, were purchased for Russia; from March to July this demand ceased, and the Bank absorbed the arrivals at the normal price, £3 7s. 9d. per oz. The demand for gold intended for Austria and Russia revived at the end of July; bars and foreign pieces were purchased at from 1d. to 3d. above the Bank price. Although less gold came from the United States, £2,000,000 more came from Africa, and £4,000,000 more from India, China and Japan. I here give the movement of gold in England:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1888.....	£15,000,000	£14,250,000	1891.....	£29,500,000	£25,000,000
1889.....	17,500,000	14,000,000	1892.....	21,250,000	15,450,000
1890.....	23,900,000	14,250,000			

The following table which I borrow from Mr. Clement Juglar, has the merit of clearness and conciseness; it shows the divergences of the production of the white metal and the prices:

Years.	Number.	Silver production in ounces.		Price in pence.	
		Increase.	Annual Av.	Decline.	Ann'l Av.
1861-'73.....	12	27,800,000	3,000,000	2 25	0.18
1873-'76.....	3	5,500,000	1,800,000	6.50	2.18
1876-'78.....	2	5,700,000	2,800,000	6.50	2.18
1878-'83.....	5	15,700,000	3,100,000	6.25	0.44
1883-'89.....	6	36,300,000	6,000,000	7.75	1.29
1889-'91.....	2	18.100.000	9.000,000	5.00	2.50

From 1861 to 1873 the annual average of the increase was 3,000,000 oz., and the fall of the metal slight, although noticeable, and still no measures had yet been taken against silver; no part of this period was affected by a demonetization of the thalers in Germany, or a suspension of coinage of silver in the Latin Union. During the two following years the rate of increase was less rapid, but the influence of these two measures was felt. It is well to add that, beginning with the passage of the Bland bill, from 1878 to 1883, the production increased 3,000,000 oz. per annum, and that the fall became more marked. The two last periods show enormous increases, and the decline of prices was most marked. Whatever may be said to the contrary, the fall of silver is due to an excess of production of the mines of the United States under the influence of laws which stimulate it by furnishing it a privileged market. We must not fail to call attention to the agitation of English merchants who export to India and to the complaints of the Anglo-Indian officials who suffer from the continued decline of silver, in favor of the adoption of the gold standard. Sir John Lubbock delivered, in 1892, a speech on the decline of silver, of which we here paraphrase an instructive fragment:

The principal remedies which have been proposed to counteract this fall are: Bi-metallism, the closing of the mints of India, the adoption of the gold standard. With respect to bi-metallism it must not be forgotten that the annual production of silver during the last thirty years rose from £8,000,000 to £20,000,000, while that of gold fell from £27,000,000 to about £21,000,000. Hence, therefore, a decrease of gold, while the production of silver more than doubled. If, therefore, the annual production of two important metals has been so variable, it is scarcely possible to establish a fixed ratio between them by artificial arrangements. Neither must it be lost sight of that gold and silver are used for other purposes than coinage; their uses for other purposes are enormous. Is it conceivable that a fixed ratio can be maintained between two metals in their use in the arts? If not, it seems evident that it cannot be done in their use in coinage. Sir John Lubbock, therefore, does not believe that England will become bi-metallist. The adoption of a gold standard for India would not produce the desired effect, unless the rupee, at present a standard coin, were reduced to a simple divisional coin, like the fractional coin of England. This also would necessitate the closing of the mints to the coinage of silver. This measure would be opposed by all those who believed in the appreciation of gold, because its tendency would be to create a new and considerable demand for gold which would increase its value, i. e., in other words, lower prices in gold. Moreover, this question of the closing of the Indian mints should be discussed solely from the Indian point of view. Without closing its mints, it is well to inquire whether the Government of India might not impose a coinage duty, although not so high a one as exists in England. If this were done—if, for instance, a duty of 2s. were laid, and if silver remained at its actual level, the value of the rupee would rise gradually 10% and perhaps more. Even a higher duty would be less than that required in England for the coinage of silver. Evidently the rupee should not change, and a duty should be imposed on those who wanted to coin silver. In this way the Government would not only derive a profit from the coinage, but would be benefited by the improvement of the rupee. The fluctuations of exchange would likewise be stopped. This system would not give rise to the objections which other propositions would not fail to suggest, and, although the coinage of silver in England is only subsidiary, while that of India is of standard coins, nevertheless Sir John Lubbock does not think that a conclusive objection, and believes that the plan merits to be taken under consideration by the Government of India.*

A Royal Commission, presided over by Lord Herschell, and having among its members Mr. Bertram Currie and General Strachey, are examining the question of the monetary system of India.†

The Government of India, like that of certain other countries, is compelled to collect its revenues in one form of currency (the rupee), and to pay its foreign creditors in another (the pound sterling), for debts contracted to meet the wants of the Treasury, or debts for railways guaranteed by the State, for the expenses of the English army in India, for the purchase of material and munitions, and for pensions.

These constitute a total of £16,000,000, which, at the rate of 2s. to the rupee, represent 160,000,000 rupees. But as the depreciation of silver has forced the value of the rupee in gold down to 1s. 3d., an additional expenditure of 90,000,000 rupees has to be borne by the Indian Treasury in consequence. A decline of a penny means an additional charge of 18,000,000 rupees.

The advocates of a modification of the monetary system of India lay stress on the fact that the instability and the fall compel the Government to tax the ratepayers in order to meet the engagements contracted with the mother country. The loss in exchange is severely felt by the officials, who have to make remittances for life insurance premiums, for investments of their savings, the support of their families, the education of their children in England, and, it is claimed, that a lower grade of men will have to be found to fill their places. The difficulties of India arise in great part from the fact that its debt to the mother country—a debt covered by drafts of the Government on the Indian Treasury—has been on the increase.

The following table is very instructive in this connection:

Period.	Imports of silver into India.	Amount of Council bills.	Rate of exchange.
1855-56 to 1859-60.....	£50,300,000	Rs. 4,900,000	2s. 10⅛d.
1860 61 " 1864-65.....	49,700,000	23,600,000	1 11⅞
1865-66 " 1869-70.....	47,100,000	27,400,000	1 11⅛
1871 72 " 1874-75.....	15,900,000	56.800,000	1 10⅝
1875-76 " 1879-80.....	35,200,000	64,400,000	1 8⅛

As well as this other, giving the value of the trade in millions of rupees:

Period.	Merchandise exported to England.	Merchandise imported from England.	Merchandise exported to China and the extreme East.	Merchandise imported from China.
	Rs.	Rs.	Rs.	Rs.
1871-'2 to 1875-'6..	1,454,000,000	1,376,000,000	716,000,000	110,000,000
1876-'7 " 1880-'1..	1,419,000,000	1,642,000,000	832,000,000	134,000,000
1881-'2 " 1885-'6..	1,752,000,000	2,057,000,000	825,000,000	175,000,000
1886-'7 " 1890-91..	1,786,000,000	2,507,000 000	923,000.000	221,000,000

Stamping of English Manufactures.—According to the "Bulletin" of the British Iron Trade Association, a motion was introduced at the last meeting of the Board of Managers by Mr. Francis Bolling, to the effect that steps should be taken by the association with a view to having manufactured iron and steel regularly stamped as of British manufacture. The proposal was discussed at some length and was warmly approved of, and a committee was appointed to frame a suitable address on the subject.

Treatment of Refuse Pyrites.—In a series of experiments made recently and reported to the Industrial Society of the North of France, Messrs. Blattner and Koestner found that when they passed a current of chloral hydric acid in a gaseous form through the refuse of copper-bearing pyrites, heated to a certain temperature, the chloral hydric acid did not combine with the oxide of iron, but only with the copper, thus making it soluble in water; at the same time a notable proportion of the acid was decomposed by the action of the pyrites, setting free chlorine, the action being very similar to the copper bricks in the Deacon apparatus. This process, if it can be carried out on a commercial scale, will make it possible to extract all the copper remaining in the pyrites, and will serve also for the production of chlorine.

* Russian member to the Conference in Brussels.

* The above are not Sir John Lubbock's own words, but a re-translation from the French of what he has said in English.—Translator.

† This report has now been completed, and is referred to elsewhere.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Supreme Court of California.

Location of Mines in Agricultural Lands.

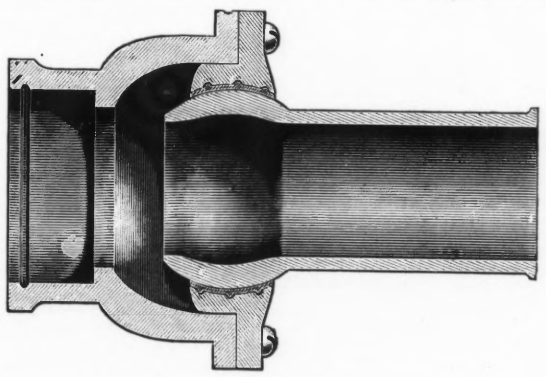
A location of a mine is not invalid, as against a subsequent location, because a portion thereof was made on agricultural land, which was afterward patented, where the agricultural land could be profitably worked only by commencing on the other portion of the location, and the money expended on such other portion was sufficient to make a valid location of the whole, the subsequent locator not connecting his claim with the holders of the agricultural patent.—Richard versus Wolfting, April 27th, 1893. 32 Pac. Rep. 971.

Duty of Managing Partner to Disclose.

An absent partner in a mining venture offered to sell his interest to the managing partner for a stated consideration, in the belief that the property was not valuable, and that there were no promising indications of paying ore. The managing partner had before this stated, in a letter to his brother, that the indications were very promising, and shortly after a local paper announced that a small quantity of ore had been, and more was expected to be, found. The same paper afterward announced that the expectation had been realized. Thereafter a contract was signed by the managing partner reciting that a "lode or vein is now by all believed to have been struck," and the managing partner cautioned his family by letter not to inform the absent partner of the discovery. It was the duty of the managing partner to disclose the true condition of the mine, and a sale on the terms offered by the absent partner, who continued ignorant of the discovery, could be rescinded by him in a bill in equity.—Patrick versus Bowman. 13 Supreme Court Rep. 866.

THE FALCON PLEXIBLE JOINT FOR PIPES.

The accompanying illustration shows a ball joint especially designed for pipes laid under water, which has been invented and patented by



THE FALCON FLEXIBLE PIPE JOINT.

Mr. Joseph G. Falcon, of Evansville, Ill. The arrangement and construction of the joint will be readily understood from the drawing, which shows it in section. The advantages claimed are that it is a strong joint; it does not close any of the opening; no matter at what angle it is set, the ball being large, there is plenty of room for water to pass; the lead packing covers a long space on the body of the ball, insuring its tightness; it is calked on both inside and outside. It is also easy to connect under water, and can be made to stand 200 lbs. pressure or over. This joint has been used in a number of cases with good results.

THE MINES OF NEW JERSEY.*

The Legislature of New Jersey, at its session in 1892, passed an act authorizing the appointment of a commissioner of mines. Under this act, Mr. Robert O'Hara, of Phillipsburg, was appointed commissioner, and he has submitted his first report, covering the period from his appointment, in March, to the close of 1892. The report states that the mines now in operation are in Warren, Sussex and Morris counties; they are 24 in number, 18 of which are producing iron ore, four zinc, one ochre for use in the manufacture of paint, while the remaining one has produced, but is not yet shipping, copper. In these mines 1,827 men are employed; 1,384 underground and the remaining 443 on the surface. In all 58 steam engines and 93 boilers are in use for hoisting and other purposes at the mines. The mines of New Jersey—at least those now in operation—are not as a rule very deep, and the commissioner says that in all of them natural ventilation is depended upon to clear the workings of impure air. During the period covered by the report seven accidents have occurred, five of them being fatal, most of them being caused by fall of rock or by mishaps to the hoisting apparatus.

The commissioner having been in office long enough to study the workings of the law, makes a number of suggestions, among which are the following: A second outlet to be provided at each mine; accurate surveys and maps to be provided at all mines; ladders and landings to receive more attention; safety appliances to be provided for hoisting apparatus to work in case of breakage of ropes or to prevent over-hoisting; a careful inspection of hanging walls and their supports to be made at frequent intervals. He also recommends that surveys and maps should be filed with the commissioner; that all new mine openings should be reported to him, and that prompt reports of all accidents should be required. As a further preventive of accidents abandoned workings should be securely covered and the storage of quantities of explosives in the mines should be prohibited. Some of the mines are well provided with hoisting apparatus of recent date and other modern appliances, but in others the plant is old and some of the appliances out of date. The commissioner has recommended a number of improvements during his visits to the mines, and reports that his suggestions have generally been complied with.

The iron mines now in operation in the State are the Crow, Champion, Fellows, Queen, No. 3, Shoemaker and Washington, in Warren County; the Hurd, Iron Hill, Mount Hope, Mt. Pleasant, Orchard, Upper Weldon, Lower Weldon, Lower Wood, Richard and Wharton, in Morris County; the Edison, in Sussex County. The zinc mines are the Passaic, Parker, Taylor and Trotter, all in Sussex County. The ochre mine is the Cambria, at Lapatcong, in Warren County, and the copper mine is a new opening recently made near Hamburg, in Sussex County.

* Abstract from report of Robert O'Hara, Commissioner of Mines of New Jersey.

PATENTS PUBLISHED IN GREAT BRITAIN.

The following is a list of the patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING JUNE 17TH, 1893.

10,354 of 1892. Galvanizing Apparatus. H. J. Walduck, Tipton, Staffordshire.
13,123 of 1892. Sorting and Loading Coal into Cars. W. Hay, Burton-on-Trent.
13,318-9 of 1892. Miners' Safety Lamps. J. Thorne, London.
13,399 of 1892. Molding Machines. W. Edgar, Sandford, Fla.
13,542 of 1892. Electrolytic Cells. F. E and A. S. Elmore, Leeds.
4,027 of 1893. Annealing Furnaces. A. J. Boult, London (C. Hencken, Aix-la-Chapelle).
6,922 of 1893. Electric Furnaces. W. Mitchell, Malden, Mass.
8,345 of 1893. White Lead. H. H. Lake, London (W. B. Browne, Cambridge, Mass.)

PATENTS GRANTED BY THE UNITED STATES PATENT OFFICE.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office:

TUESDAY, JUNE 27TH, 1893.

500,114. Mining Car. Hemlet Corrigan and Hardman E. Fulkerson, Smith's Mills, Pa.
500,124. Coal Drill. Charles Grotz, Ottumwa, Ia., Assignor to the Hardsocg Manufacturing Company, same place.
500,132. Electric Motor and Dynamo Electric Machine. Rudolph M. Hunter, Philadelphia, Pa., Assignor to the Thomson-Houston Electric Company, of Connecticut.
500,135. Electric Motor. Charles S. Jones, Chicago, Ill. Susan H. Jones, executrix of said Charles S. Jones, deceased.
500,137. Composition of Matter for the Extraction of Precious Metal from Ore. Edward D. Kendall, Brooklyn, N. Y.
500,112. Well Drilling Machinery. Joseph G. Lee, Dallas, Tex., Assignor of one-half to Robert E. Lee, same place.
500,194. Metal Sawing Machine. Gustave Eberhardt, Pittsburg, Pa.
500,206. Test-Tube. Edwin S. Hoare, Forest Hill, England.
500,213. Metal Drill. Francis H. Richards, Hartford, Conn., Assignor to Walter Wood, Philadelphia, Pa.
500,245. Cask for Petroleum. John D. Sprunt, London, England.
500,286. Bending Roll. Wilfred Lewis, Philadelphia, Pa., Assignor to the William Sellers & Co., incorporated, same place.
500,301. Electric Generator and Motor. William Stanley, Jr., and John F. Kelly, Pittsfield, Mass., Assignors to the Stanley Laboratory Company, same place.
500,302. Slate Picker. Frederick Stoeckel and Samuel Fahringer, Mahanoy City, Pa.
500,333. Gas Manufacturing Apparatus. William A. Koneman, Chicago, Ill., Assignor to the Chicago Heat Storage Company, same place.
500,340. Wind Engine. Samuel W. Martin, Springfield, O., Assignor to the Mast, Foos & Co., same place.
500,345. Shield for Metal Rolls. Theophilos D. Morgan, New Philadelphia, Assignor of one-half to John Ashton, Canal Dover, O.
500,386. Iron Notch for Blast Furnaces. John M. Hartman, Philadelphia, Pa.
500,387. Blast Furnace. John M. Hartman, Philadelphia, Pa.
500,400. Dynamo Electric Machine or Motor. Philip Lange, Pittsburg, Pa., Assignor to the Westinghouse Electric and Manufacturing Company, same place.
500,410. Furnace for Annealing Wire. James McConnell, Anderson, Ind.
500,424. Apparatus for the Manufacture of Gas. Henry M. Pierson, Brooklyn, N. Y.
500,445. Apparatus for Dredging and Pumping. Joseph A. Wade and John Cherry, Hornsea, England.
500,495. Asphalt Disintegrating Boiler. Alfonso Haskins, San Francisco, Cal., Assignor to the Jordan Bituminous Rock Company, same place.
500,507. Sectional Boiler. William H. Page, Norwich, Conn., Assignor to the Wm. H. Page Boiler Company, same place.
500,514. Superheater. Charles N. Scheetz and Jacob Ringle, Philadelphia, Pa.

DIVIDENDS PAID BY MINING COMPANIES DURING JUNE, 1893.

NAME OF COMPANY.	Paid in June.	Paid since Jan. 1st.	NAME OF COMPANY.	Paid in June.	Paid since Jan. 1st.
Alaska Tr'dw'll, Alaska	$150,000	$275,000	Lexington, Colo.....	3,000	18,000
American Turquoise...	.....	60,000	Maid of Erin, Colo....	.....	150,000
Aspen, Col.....	20,000	20,000	Mayflower Gravel, Cal.	10,000	60,000
Belden Mica, N. H.....	5,000	30,000	Minnesota Iron, Minn.	.....	420,000
Bimetallic, Mont	. ...	200,000	Mollie Gibson, Colo...	150,000	900,000
Calumet & Hecla, Mich.	.....	500,000	Morning Star D., Cal.	7,200	43,200
Centennial-Eureka,			Napa Cons., Cal..... .	.....	40,000
Utah.....	15,000	107,500	North Star, Cal.....	50,000	100,000
Champion, Cal.....	3,400	20,400	Osceola, Mich	.....	50,000
Cleopatra.....	37,500	225,000	Pacific Coast Borax...	.....	15,000
Colorado Central, Colo.	.....	27,500	Parrott, Mont.....	18,000	108,000
Colorado Fuel Co., Colo.	.....	67,120	Pharmacist, Colo.....	12,000	48,000
Cons. New York, Nev..	....	10,000	Plumas, Eureka, Cal..	.....	26,367
Copper Queen, Ariz.....	.....	200,000	Quincy, Mich.....	.....	150,000
Daly, Utah.....	.....	187,500	Red Cloud, Idaho	.....	10,000
De Lamar, Idaho..... .	.....	250,000	Rico-Aspen, Colo ...	.....	25,000
Elkhorn, Mont.....	65,625	153,125	Seven Stars, Ariz.....	.....	97,500
Enterprise, Colo.....	25,000	150,000	Sierra Butte, Cal.....	.....	15,318
Golden Reward, S. Dak.	5,000	30,000	Standard, Cal.....	.....	10,000
Great Western Quicksilver, Cal.....	12,500	75,000	Tamarack, Mich.....	200,000	200,000
Hecla Con., Mont.....	15,000	90,000	Trinity River Hydraulic, Colo.....	2,500	12,500
Homestake, S. Dak.....	12,500	75,000	Utah, Utah.....	.....	5,000
Hope, Mont.....	.....	125,000	Victor.....	10,000	50,000
Horn Silver, Utah.... .	87,500	137,500	W. Y. O. D., Cal.....	3,000	18,000
Idaho, Cal.....	.....	46,500			
Iron Mountain, Mont...	15,000	15,000	Total.....	934.725	5,699,025
Kennedy, Cal.....	.....	50,000			

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

PERSONALS.

Mr. Henry F. Lefevre, mining engineer, has gone to South America on professional business. Letters addressed to Panama, Republic of Colombia, will reach him.

Mr. Leo von Rosenberg, of New York, has gone West on a bnsiness trip relating to some mining properties. His address for the present will be at Browu's Palace Hotel, Denver, Colo.

Mr. M. S. Berray, foreman of the Old Dominion Copper Company, at Globe, Ariz., has been appointed superintendent, to snceeed Mr. A. L. Walker, whose resignation was noted in our last issne.

Prof. S. B. Christy, of the chair of mining and metallnrgy, at the University of California, has been inspecting the mining industry of Amador Connty, California, accompanied by a number of his stndents.

Mr. Wm. M. Curtis, mining engineer, of Detroit, Mich., who has been ill since last October, from typhoid pneumonia, and its after effects, contracted on a hard professional trip throngh Arizona, California and Washington, has now so far recovered that he is now able to attend to business.

Mr. A. G. Charleton, mining engineer, leaves Argeles, France, for England early in Jnly, having completed an elaborate survey, with plans and estimates for a large concentration plant for treating silver-lead and zinc ores, which he was especially commissioned to prepare for the New Pierrefitte Mining Company.

Mr. Victor M. Clement, mining engineer, lately general manager of the Bunker Hill & Snllivan Mining Company, of Wardner, Idaho, and formerly snperintendent of the Minas Nuevas Mining Company, of Alamos, Sonora, Mex., and mill superintendent of the Triumpho Mining Company, of Lower California, is now in this city en route to South Africa, where he will fill an important positiou for Barnato Brothers, the well known mining men of the Transvaal. Mr. Clement's long experience in the gold mines of Grass Valley will undoubtedly render him an important factor in the success of the South Africa gold mining indnstry.

OBITUARY.

George P. Bangs, of the firm of Bangs & Horton, well known coal dealers, of Boston, Mass., died in that city on Jnne 28th.

G. H. Brown, a well known iron merchant, of Pittsburg, Pa., died suddenly of heart failure at Chicago, on June 27th, aged 58 years.

George W. Bowers, one of the owners of the noted Harqna Hala mines, in Arizona, died at his residence at San Francisco, Jnne 17th. He was a native of New Hampshire, and at an early age went to the West, where he had a varied career as cattle speculator and miner. In 1868 he became identified with several mining enterprises in Arizona, among his fortunate investments being an interest in the Cliff silver mine, at Casa Grande, and the Tiger mine, at Prescott. In 1889, in conjnnction with A. J. Hubbard, he invested in the Harqna Hala mines, at that time regarded doubtfnlly by mining men, and had since reaped a rich reward for his foresight. Mr. Bowers was within a month of being 65 years of age, and leaves a widow to whom will pass his estate, valned at over $1,000,000.

SOCIETIES AND TECHNICAL SCHOOLS

American Society of Civil Engineers.—At the regular meeting, Jnne 21st, Mr. J. A. Ockerson read an interesting paper on the "Erosion of Banks of the Mississippi and Missouri Rivers." A brief discnssion followed.

General Mining Association of Qnebec.—The July meeting will be held at Sherbrooke, July 5th and 6th. On the first day there will be a bnsiness meeting in the morning, and an afternoon session at which several papers will be presented. In the evening there will be a reception given by the local authorities. The second day will be occupied by an excnrsion on Lake Memphremagog.

Engineers' Club of Cleveland.—At the regular meeting June 13th, the Committee on the Columbian Exposition made a report of progress, which was approved. A committee was appointed to make arrangements for the annnal picnic of the clnb. Mr. James Ritchie read a paper on "Preliminary Snrveys for a Railroad," which was discussed by a nnmber of the members present.

University of Pennsylvania.—A new building has jnst been completed for the mechanical and electrical laboratories, which is very completely equipped with apparatns in both departments. The main building is three stories in height and there is a wing one story high, containing the boilers. The engines are in the basement of the main building. The power is nsed to light the University buildings as well as for the purposes of the laboratory.

American Society of Mechanical Engineers.—At a meeting of the council, held June 22d, the following minute and resolution were adopted:

It having come to the knowledge of the council of the American Society of Mechanical Engineers, that the Iron and Steel Institute of Great Britain has recently bestowed npon a member and ex-vice-president of the Society the Bessemer medal for 1893, the connci avail themselves of this occasion to tender their congratulations to Mr. John Fritz on the receipt of snch a well merited and distinguished honor from his friends beyond the sea.

The connci desires to commend the excellent judgment of the Iron and Steel Institute in selecting for this honor one who by his genius, skill and indnstry throngh many years, has done so much toward the improvement of metallurgical processes, especially in the constrnction of the mechanical appliances now in nse in the mannfactnre of iron and steel in this country, as to have materially aided in making this industry the important one it now is.

That in conferring the Bessemer medal in this, the year of our Columbian Exposition, npon an American engineer, the Institute has in a pleasant way added fnrther evidence of the kindly feelings and hearty good-fellowship which in so many ways have of late marked the action of engineering societies, and engineers in this conntry and in Enrope; and we cannot bnt believe courtesies like this tend to a closer union of engineers in all lands; that while it is the mission of our profession to compel the rnde forces and materials of natnre to contribnte to the welfare and comfort of mankind, it is its mission as well to bring in closer touch nations and individuals, and in this way to aid, in a degree, in which it would seem no other profession can, to bring about those better days which in all ages past the world has hoped and struggled for.

American Institnte of Mining Engineers.—The 65th meeting of the Institute will be held at Chicago, Ill., beginning on Monday, July 31st, 1893. This meeting will be held in two sections, held separately and simultaneously (except when joint sessions will be deemed advisable), and constituting divisions C and D of the International Engineering Congress, representing, respectively, mining and metallurgy. Headqnarters will be at the Associated Engineering Headquarters, No. 10 Van Buren street, Chicago, where members attending the meeting are expected to register npon arrival, and will receive cards of admission to the sessions of all divisions of the said congress, and to the engineering quarters in the Mines and Mining Bnilding, at the Exposition, from Mr. Max Schmidt, secretary of the General Committee of Engineering Societies, Columbian Exposition. The Associated Engineering Headquarters, at No. 10 Van Bnren street, are open from 8 a. m. to 10 p. m. on week days, and from 12 to 2 p. m. on Sundays.

The congress comprises the following divisions:

Division A.—Civil Engineering, in charge of the American Society of Civil Engineers.

Division B.—Mechanical Engineering, in charge of the American Institnte of Mechanical Engineers.

Division C.—Mining Engineering, in charge of the American Institute of Mining Engineers.

Division D.—Metallurgical Engineering, in charge of the American Institute of Mining Engineers.

Division E.—Engineering Education, in charge of a special committee. Prof. I. O. Baker, University of Illinois, Champaign, Ill., chairman.

Division F.—Military Engineering, in charge of Mai. Clifton Comly, Governor's Island, N. Y.

Division G.—Marine and Naval Engineering, in charge of Commodore George W. Melville, U. S. N., Washington, D. C.

The opening general session of the congress will be held on Monday, July 31st, at 10 a. m., in one of the large halls of the Art Palace, Lake Front Park, Chicago. The sessions of the several divisions will be held in different halls in the same building, during the forenoons of Monday, Tuesday, Wednesday, Thursday and Friday of the same week (the Monday sessions following the general opening session). The congress will terminate with a general closing session on Saturday, August 5th. The afternoons will be devoted to visiting the Exposition, etc., or to extra sessions, if necessary. Programmes will be issued by the general committee in charge of the congress, and may be had at headquarters.

There will be no special hotel headquarters. Members may write for further information to Mr. Max Schmidt, secretary of the Associated Committee, No. 10 Van Buren street, or to Dr. David T. Day, secretary of the Institute Columbian Committee, 6235 Woodlawn avenue, Chicago, Ill. A large number of papers have been promised for this meeting.

INDUSTRIAL NOTES

The Braddock Wire Works, at Rankin, Pa., have shut down indefinitely. Over 700 men are thrown out of work.

The Union Malleable Iron Company is increasing its works at Moline, Ill., by a new foundry 82 × 94 ft. in size.

The two Bird Coleman furnaces at Cornwall, Pa., have been blown out. About 300 men are thrown out of employment.

William B. Pollock & Co., Youngstown, O., are working on several large orders for smelting machinery to go to Montana.

The Colorado Iron Works, at Denver, Colo., recently received an order for a 10-stamp mill and a complete plant to go to Arizona.

The Lloyd-Booth Company, in Yonngstown, O., recently shipped a set of rolls to the Durango Steel and Iron Company, Dnrango, Mex.

Emaus furnace, at Emans, Pa., has gone out of blast and is to be re-bnilt and improved by the additiou of a new blowing engine and boilers.

The Albany Iron Works, Troy, N. Y., are running the 14-in. and 18-in. trains and the axle hammers. The steel works are also rnnning full time.

The Shiffler Bridge Company, Pittsburg, Pa., is building a large dynamo and pnmp honse for the Yonngstown Bridge Company, at Youngstown, O.

The Edgar Thomson mill, at Braddock, Pa., is being enlarged by the addition of two new furnaces to the blooming mill, each having a capacity of 30 tons.

The Pittsburg Department of Public Works has let some large contracts for cast iron water pipe to the National Fonndry and Pipe Company, of Scottdale, Pa.

Jones & Laughlins are pntting up a new plate mill, at their plant, in Pittsburg, Pa. The new continuous mill is nearly completed and will begin operations in a short time.

The Hazard Manufacturing Company, Wilkes-Barre, Pa., recently shipped to the Citizens' Tractiou Company, in Pittsburg, a wire cable 25,800 ft. long, and weighing in all about 75,000 lbs.

The Bethlehem Iron Company has completed and shipped to the American line a spare crankshaft for the steamship "Paris." It is made of nickel steel and has the high tensile sterngth of 90,000 lbs.

The Ordnance Bnreau of the Navy Department is about to advertise for some 750 tons of steel forgings to be nsed in the constrnction of 12-in. and 8-in. guns, and of 4-in. and 5-in. rapid-fire gnns.

The Abendroth & Root Mannfacturing Company, New York notes a demand for the Root patent spiral riveted water pipe from foreign countries, and has just shipped a large supply of this pipe to Sonth Africa.

The M. C. Bullock Company has removed its Chicago office from South Canal street to its exhibit in the Mines and Mining Building, at the Exposition. The exact location is in the Sontheast Section, P. 21.

The Pittsburg Locomotive Works have recently received a contract for 20 locomotives for the Manhattan Elevated Railroad, in New York City. They are of the eight-wheel Forney pattern, which is the standard of the Manhattan company.

The Mecklenburg Irou Works, Charlotte, N. C., are just completing the shipment of a 20-stamp mill with all attachments, besides other mining material, and three chlorinators for the Theis method, to the Lnstre Mining Company, El Oro, Durango, Mex.

The B. F. Sturtevant Company, Boston, Mass., has printed a third edition of 10,000 copies of its 200-page general catalogne No. 61, which describes the uses of the blowers, exhausters, engines, forges, heating and ventilating apparatns, made by the company, and desires to place a copy in the office of every one nsing such machinery.

The Lidgerwood Manufacturing Company, New York, recently received an order from Sweden for one of its Miller patent transfers. This company recently shipped to the Sonth Gila Canal Company, near Sentinel, Ariz., the largest hoisting and conveying cableway ever built, it being 1,500 ft. span, or 150 ft. longer than the great cableway at the Anstin dam, in Texas.

In the suit brought by certain stockholders to compel William W. and Walter Scranton to pay into the treasnry of the Scranton Steel Company $350,000 bonds of the Lackawanna Iron and Steel Company, received by them, the court has decided in favor of defendants, holding that the bonds were paid to them individually, in consideration of their agreement not to enter into any competing business for 10 years.

Messrs. William Hoskins & Co. have issued an illustrated catalogue describing Hoskins' patent hydro-carbon blowpipe and furnaces. The latter include crucible furnaces of different kinds and muffle furnaces. The blowpipe has been used with excellent results. These furnaces are the only ones in use in the laboratory of the Mines Building, at Chicago. The makers applied for space as exhibitors, but the chief of the department desired to use the furnaces in the laboratory.

The sale at auction of the entire assets of the Ozark Onyx Company, at St. Louis, on July 10th, notice of which is given in another column, offers a chance to purchase one of the most thoroughly equipped onyx plants in America. The onyx mines of this company, the discovery of which created a great excitement in Missouri about two years ago, are still undeveloped, and in fact only partly explored. What they may contain has not been fully ascertained, as the Ozark company has never had sufficient means to test them.

The appeal in the case of the Pittsburg Reduction Company, of Pittsburg, against the Cowles Electric Smelting and Aluminum Company, of Cleveland, pending before the United States Circuit Court of Appeals, at Detroit, Mich., was recently dismissed on motion of the appellants for the Cowles company, at its cost. The patent at issue was the Hall patent, which covers the only commercial method at present used for manufacturing aluminum. The patent had been adjudicated and entertained by the United States Circuit Court for the Northern District of Ohio.

The American Casualty Insurance & Security Company carries a considerable amount upon mining companies, in all 21 companies footing up $4,692,000. Of this amount the Boston & Montana Consolidated Mining Company has $1,100,000. Nearly all the plants carry both employers' liability and contribution insurance. This latter form of policy provides for half, and in some cases three-quarter, wages to men who are injured while in the discharge of their duties, with additional benefits of free medical attendance, and in case of death ensuing from the injuries a sum equal to one-half or three-quarters of the annual income of the deceased paid to his legal representatives. These general policies can be written at rates below what individuals would obtain.

The Crum Creek Iron and Steel Company, of Chester, Pa., has made an assignment. The company estimates its liabilities at about $120,000, and its assets, including the capital stock, at $119,000, which would virtually make it solvent, but the assets include about $40,000 due the company from a former agent, which is doubtful. This heavy loss and the dullness of the iron trade made payments slow, and suits threatened by creditors led to the assignment. The plant will be sold. The officers of the company are D. Reese Esrey, president; H. B. Birtwell, treasurer and general manager; Walter L. Birtwell, secretary, and Jared Swanger, superintendent. All are residents of Chester. The failure seems to have been the result of a combination of unfortunate circumstances.

Messrs. Shepard & Searing, mechanical and electrical engineers, of Denver, Colo., have just completed the plans for the new lighting and power plant for the Omaha & Grant smelter, of that city. The smelter has been erecting a new engine, boiler and blower plant with a view of doubling its present capacity, and at the same time centralizing all its machinery in one building, all the smaller engines for driving crushers, hoists, fans, etc., being replaced by 500-volt electric motors operated by generators in the main blower-room. The capacity of the arc and incandescent plant will also be doubled. The whole electric plant when complete will consist of two 25-light arc machines, two 200-light incandescent machines, and two 65-H. P. generators, driven from a countershaft. The countershaft will be driven from the main blower shaft by rope belting. The whole plant, including countershafting, reserve engine, switchboards and free space around machines, occupies only 24 ft. by 43 ft.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs, he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods or any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

ALABAMA.

Cherokee County.

(From Our Traveling Correspondent.)

At the present time business in this county is very much depressed in the southeastern portion, which is a large producer and shipper of brown iron ore, because of the closing down of the Baker Hill mines, owned by the Tecumseh Iron Company, indefinitely. The company has increased the force at the State Line banks, working two shifts eight hours each, and paying 9c. an hour for all labor except shift bosses and engineers. The ore mined at these banks carries a very low percentage of phosphorus and high in metallic iron, consequently is more valuable and sought after even by the coke furnaces than the ore from Baker Hill, which is higher in phosphorus. At present, the shipments average from 75 to 125 tons a day. This ore is not encountered in the banks in solid bodies, as is the case in the Baker Hill, but is all contained in the gravel or clay which varies in richness, so that it is impossible to estimate with any degree of exactness what is ahead of the work, and besides the banks have been mined for years, the ore in the past having been screened, but now everything is washed through the new McLanahan & Stone washer, erected last year. The water supply being brought about two miles in iron pipes, and a settling dam to hold the waste mud being necessary, the expense of this plant has been nearly $20,000, including dams, engines, boilers, washer machinery, side track building and labor, before any ore was washed. Except a limited quantity of brown ore being mined at Dikes, for Bass furnace, the State Line is the only bank in Cherokee County at present producing and shipping.

In the bauxite banks, at Dikes, the force of miners has been increased; the wages paid, $1 a day for 11 hours' work, is the usual per diem in this section. The Republic Mining and Milling Company, of Hermitage, Ga., is the only shipper of bauxite from this county at present. The banks mined by this company at Dikes are leased from the Bass Furnace Company, and are the most extensively developed as well as the most systematically mined, of any in Alabama. Work is being carried on at two banks, known as Nos. 144 and 145, or "Washer" and "Bust-Up," situated in a direct line nearly northeast and southwest from each other, about one mile apart. The bank known as No. 144 is, so far as at present developed, the most extensive deposit of bauxite ore in the South; prospect holes sunk in such a manner as to cross-cut the ore body show it to extend nearly 400 ft. The face in the open-cut at present exposed shows 45 ft. in thickness of solid bauxite, and a new cut is to be commenced at once which will be run 10 ft. deeper than the present workings. Sheds with a capacity of 2,500 tons have been erected at the mines, and another of nearly equal capacity at the Bass furnace, three miles distant, to which the ore is hauled in wagons for transportation on the railroad to the Eastern markets. In prospecting for the bauxite ore it is usually found about 6 ft. below the surface, and overlaid by iron clay, but sometimes crops up above the surface in immense bowlders.

ALASKA.

(From our Special Correspondent.)

Alaska-Treadwell Gold Mining Company.—At the annual meeting held on Wednesday last the following directors were elected for the ensuing year: E. W. Hopkins, R. D. Fry, H. Smith, Jr., William Alvord and J. D. Fry. At a meeting of the directors the following officers were elected: W. Alvord, president; J. D. Fry, vice-president; A. T. Corbus, secretary and treasurer, and R. Duncan, Jr., superintendent.

ARIZONA.

According to James Finley, in the "Arizona Weekly Citizen," there is not a silver mine or mill in operation in the Territory of Arizona, owing to the low price of silver.

Cochise County.

Hermosa M.—A shipment of 4,000 oz. of bullion from this property was seized recently under a judgment against A. A. McGovney, of Colorado, who has been recently running a mill on the property.

CALIFORNIA.

Amador County.

Amador Gold Mine, Limited.—Judgment has been rendered against this company in the sum of $149,259, with interest and costs, in favor of William A. Wallace. Mention of the grounds for this suit has been made in previous issues of the "Engineering and Mining Journal."

Keystone Mining Company.—This company has brought suit against the South Spring Hill Gold Mining Company, alleging that the latter company has extracted ore from its territory, and that the apexes of a portion of the vein worked by the South Spring Hill Company lie within the limits of the Keystone claim. It is claimed that in the two years' work by the South Spring Hill Company on this portion of the property, some 10,000 tons of ore were extracted, having a value of $200,000.

Butte County.

Golden Feather Channel, Limited.—The water in the river is too high to permit of work at present. But it is expected that by July 1st the channel may be drained and the river diverted.

Calaveras County.

(From our Special Correspondent.)

An 11-ft. ledge of excellent rock is being worked three miles from Angels. The rich streak running through it ranges from 6 to 12 in. in width and is rich in free gold. A two-stamp mill is being erected.

Los Angeles County.

(From our Special Correspondent.)

In 1863 a party of miners prospected on Catalina Island, and discovered rich mineral. They took out 250 tons which was sold on the ground at $100 per ton, but shortly after an injunction was served by the owners of the island, which was then controlled by the Lick estate, and work ceased. In abandoning their find the men covered up all traces of the mine and for 30 years it has remained undiscovered despite the fact that it has been repeatedly sought for. It has now been relocated and is in Cherry Valley and quite easy of access. Originally the ore was taken out by tunnelling, but a shaft is being now sunk and at a depth of 12 ft. a small ledge was struck, which at first was only ¼ in. wide, but which now shows 6 in. of silver-lead ore, assaying $11.50 and 80% lead.

Mono County.

(From our Special Correspondent.)

Bodie Consolidated Mining Company, Bodie.—At the annual meeting held this week there were represented 54,512 out of 63,473 shares of stock, the balance of the 100,000 shares being in the treasury. The following officers and directors were elected: H. D. Walker, president; L. Osborn, vice-president; J. W. Kelly, E. P. Danforth, R. H. Linton, W. H. King and A. Herman, directors. The company has $9,069.41 in the treasury.

Napa County.

Development work has been prosecuted for some time on a quicksilver property, in the Oak Hill mining district. Some of the ore now extracted assays 30% quicksilver. There is plenty of wood and water in the vicinity of the works, so that work there will be economical. It is owned by H. Fraser, G. A. Sacry, J. B. Jamison and S. E. Shore.

Nevada County.

(From our Special Correspondent.)

The Coan Mine.—This property, which adjoins the Chapman ranch and is owned by the Coan Brothers, has been purchased by R. B. Colgate, of the celebrated firm of soap manufacturers, for himself and other Eastern capitalists. The purchase price was $12,000, and $4,500 is reported to have been paid for the Green property adjoining the Coan on the west.

Placer County.

Morning Star Gravel Mining Company.—This company has declared a dividend of $1 per share, aggregating $2,400. The place of operation is Iowa Hill.

San Bernardino County.

(From our Special Correspondent.)

A rich placer field is reported eight miles from the Dry Lake location, northeast from Mohave. The ground is said to be easily worked, and so soon as dry washers are received some rich finds are anticipated. Most of the good ground has already been taken up.

Sierra County.

Rising Sun Mining Company.—This company is preparing to put in an electric power transmission plant. The dynamo and water-wheel will be placed on the Middle Yuba 2½ miles from the motor.

Ruby Drift Gravel Mine.—Twenty-eight men are being worked on this property. An examination of the mine has recently been made by Mr. Ross E. Browne, of San Francisco.

Tuolumne County.

Kincaid.—This gravel property, on the Kincaid Flat, is worked by a monitor under 200 ft. head; the banks are 60 ft. high and the bedrock tunnel discharging into Sullivan Creek is about a mile long.

COLORADO.

Clear Creek County.

Ohio Gulch Mining and Milling Company.—This company is now building a mill to contain 15 stamps, one pair of rolls, six jigs and three buddles. It is said to have a large body of concentrating ore in its mines.

Custer County.

Geyser.—This property, which has absorbed the money of its stockholders for some years past, has levied another assessment of 10 cents a share. Statements are made at the same time that the ore is improving in quality and that a strike will shortly be made. This is an old story with the Geyser property.

Dolores County.

Atlantic Cable Mining Company.—Considerable ore of good grade is being stoped in this ground.

Rico Aspen Mining Company.—Two hundred men are now being employed in this property; large quantities of good grade ore are being shipped.

Southern Consolidated Mining Company.—The tunnel on this property is being pushed with activity; the vein will be struck, it is expected, at 100 ft.

El Paso County.

Calumet Mining Company.—The litigation between this company and Patrick Burns has been settled, the company having compromised by the payment of 83,000 shares of stock and due-bills equivalent to 232,000 shares which were claimed by Burns. The Pharmacist Mining Company has paid $5,000 to the Calumet company for trespass on the latter company's property.

Gilpin County.

Cleveland Mine.—Development work is being pushed rapidly on this mine. The pay streak is about 8 in. wide and averages about $78 a ton, net.

Gould Mining Company.—This property is being worked by leasers, who are stoping and drifting on a 150-ft. level. A pay streak 6 to 10 in. wide has been opened up here; the mineral is high-grade galena and gray copper.

Mountain Boy.—A rich strike has been recently made in this property at the depth of 30 ft. Specimens from the 8-in. pay streak have assayed as high as $8 a ton.

New Gregory Mining Company.—A body of milling ore running 6 oz. per cord has been opened between the 500 and 600-ft. levels in the Bobtail mine.

St. Louis-Gunnell.—This property is being drained prior to an examination.

Two-Forty.—Fifteen to 20 cords of milling ore and 10 tons of smelting ore are being shipped monthly from this property. The milling ore runs about 5 oz. gold to the cord, and the smelting ore from $80 to $200 a ton.

Yankee Hill Mining and Milling Company.—A 20-stamp mill is to be erected on this property shortly. Lately a 3-ft. body of free milling gold ore has been opened up.

Lake County.

(From our Special Correspondent.)

At the Mahala, the management have again brought the diamond drill into use to see what they can find at greater depth than the present workings. Although the Mahala people are down 900 ft., they have never explored or developed but one contact, but from this contact they have been for over a year shipping 1,200 tons per month.

A statement just issued by the Grey Eagle-Pocahontas-Penrose-Orion consolidation shows the work for May to be as follows: There were 350 net tons shipped from the Orion lease, yielding $26,925; from the Grey Eagle-Pocahontas, 1,045 net tons, yielding $25,931; Penrose, 140 tons, yielding $14,616. The expenses, however, would greatly reduce profits.

Sixth Street.—These people are preparing to close down on account of existing conditions. The pumps, however, will not be pulled out, so that the work can again be resumed whenever things look more favorable.

Star of Hope.—Attachments amounting to $40,000 have been issued against this property, but it is understood that a satisfactory settlement is being effected. At any rate, satisfactory arrangements have been made to continue working the mine. The attachments were made by the Carey Hardware Company and McCarty & Moore's iron foundry. Now that it has been decided to keep the mine operating, plenty of mineral will be mined, as these people have one of the largest iron ore bodies opened up west of the Pendery fault. Some very good carbonate ore is also being taken out. A certificate was filed at the county clerk's office this week signed by John P. Jones, president, and a majority of the directors of the Star of Hope Mining Company, showing that the whole capital stock of this company had been all paid in by the assignment and delivery of certain mining property in California mining district, this county.

Ouray County.

Raleigh.—Development work on this property, which was sold last winter to a Pittsburg syndicate for $45,000, has commenced. A cross-cut tunnel is to be run 300 or 400 ft., cutting the vein 700 ft. below the surface.

FLORIDA.

Alachua County.

Imperial Phosphate Company.—This company has been incorporated to operate phosphate works in this county, the incorporators being S. R. Pyles, Ocala, Fla.; J. H. Porter, Dalton, Ga.; W. S. Trimble, Atlanta, Ga.

Citrus County.

Globe Phosphate Mine.—This mine has been sold to Capt. William McKay, who is now building a branch railroad to connect the mine with the Silver Springs, Ocala & Gulf Railroad.

Marion County.

Central Florida Phosphate Company.—This company has bought part of the old Hopkins plantation, near Anthony, Fla., and will put up a large plant on the tract.

Ocala & Blue River Phosphate Company.—This company will issue $225,000 in bonds, $150,000 having already been placed. The money will be used to pay off the floating debt and to build a railroad to the company's mine.

Polk County.

Fort Meade Phosphates Land and Investment Company.—This company has started a river dredge at work in the river at Fort Meade, Fla. The dredge is fitted with a Morris centrifugal pump and a Dean duplex force pump. When in a drift it will easily raise from 10 to 11 tons an hour of clean pebble. The company is putting in a Clark rotary dryer, made by the Mahoning Rolling Mill Company, at Danville, Pa., which has a capacity of 300 tons per day. The phosphate is carried from the dryer to the shipping bins by a Jeffrey elevator.

GEORGIA.

White County.

Number Ten.—The Cleveland "Progress" reports the discovery of a new vein of rich gold ore on this property, now owned by J. R. Lumsden and J. H. Westmoreland, who have been at work prospecting for some time. It is believed to be an extension of the once famous Reynolds vein, which was first discovered some 60 years ago, and from which many thousand dollars were taken before the War.

IDAHO.

Alturas County.

Camas No. 2.—This property has been sold at sheriff's sale for $30,000, to St. Joseph, Mo., parties. The sale is subject to confirmation by the district court.

Idaho County.

(Reported for the "Engineering and Mining Journal."

Elk City mining district is situated on the South Fork of the Clearwater River, and embraces an area of about 140 square miles. It is situated about 120 miles from Lewiston, the Union Pacific terminus, and 135 miles from Genesee, the terminus of the Palouse branch of the Northern Pacific Railroad. The watershed of the South Fork of Clearwater is made up of Crooked River, Red River and American River. Placer diggings were discovered in this region in 1860, by prospectors from the Oro Fino County, on the north side of the main clearwater. The camp has produced many millions of dollars of gold dust, and is still an important producer. Very large bodies of auriferous gravel exist in the district which undoubtedly owe their origin to the deposits of ancient river channels and subsequent distributiou through the agency of glacial erosion; but the area of these deposits is so extensive and the district itself is so large that the laws governing their distribution are not yet understood. The gold production of the district heretofore is exclusively the result of individual energy. In the last few months representatives of many alleged wealthy companies have located large tracts of virgin ground with the avowed intention of exploiting the same on an extensive scale. The ground thus located usually consists of large flat meadows, of which there are many in the district. In one instance a Chicago company has established a dredge which started up satisfactorily this spring and from the latest reports is doing admirable work on the lower Red River meadows. If later results demonstrated the work of the machine to be profitable, a large field of gold production will be made available through the application of the dredge system to the large flat meadows which have lain idle for lack of dump. At a later date I will describe the workings of the machine. Outside of this company none of the other projected enterprises have materialized, but are probably held in abeyance on account of the existing financial stringency. There are many placer propositions of undoubted value awaiting investigation and investment in the district.

Until within the last two years quartz mining has been a side issue in Elk City, but the number and extent of recent discoveries have sufficiently demonstrated to practical observers the fact that it is destined to become, not only the leading industry of the camp, but that the camp itself will, with development, and in time, prove itself the banner gold producer of the State. The business of quartz mining in the camp is too young to permit of much development, but the few claims on which depth has been attained shows that the ledges go down and that the ore retains its value. The Buster, the Cleveland and the California are the three best developed mines in the camp at present, although the winter's work has improved the value of a good many others.

The veins vary in size from 1 ft. to 30 ft. in width. The ore will average in value from $8 to $20 gold per ton. Mineralogically, the ores of the camp consist of a quartz gangue, carrying free gold and iron pyrites. Quartz is the characteristic matrix, though other matrices occur. They are universally concentrating ores.

In the case of a large mill using several concentrators, the concentrates may be still further refined at the mill by roasting the sulphurets and treating them by the chlorination process.

The altitude of Elk City district is 4,000 above sea level. It is now 120 miles from a railroad, but the opening of the Nez Perce Indian reservation lands to white settlement insures railroad extensions in a few months to Grangeville. Living is cheap, timber, water and game are plentiful and the climate cannot be excelled for salubrity. The old-timers of 33 years ago are still robust and hearty. For the above information we are indebted to the courtesy of Mr. Aaron F. Parker, the editor of the Idaho County "Free Press."

Lemhi County.

Lemhi Placer Company.—Two giants are now in operation. The larger one is throwing 1,150 miners' inches through a 6¼-in. nozzle under 375 ft. pressure. The smaller giant is used merely to increase the amount of water. The grounds are lighted by electricity and work is carried on night and day.

Shoshone County.

There seems to be resumption of the labor difficulties in the Coeur d'Alene mine. Some of the carmen and shovelers at the Helena & Frisco Mining Company's property have struck for a raise of wages from $3 to $3.50 per day. The Gem mine has shut down; the Tiger has shut down on account of the hoisting engineers' strike for eight hours' work daily. Other mines are still running.

ILLINOIS.

Illinois Fuel Company.—This company, which has its headquarters in Chicago, and operates several coal mines, on June 27th confessed judgment for $28,000 in favor of the Commercial National Bank of Chicago. The total liabilities are said to be about $60,000.

Lemp's Mining, Milling and Educational Company.—This company has filed articles of incorporation with $500,000 capital stock; office in Chicago. The incoporators are C. P. Stringfield, John Higgins and John A. Donnelly. The objects are to mine and mill ores; what the educational part of the title is to cover is not stated.

Menard County.

Curtis Coal Company.—This company has been organized at Springfield, Ill., with $30,000 capital stock, to sink a shaft near Petersburg, on the Chicago & Alton Railroad. The officers are Thomas White, president; John W. Ryan, secretary; P. H. Giblin, treasurer.

MAINE.

Hancock County.

Croteh Island.—This granite quarry was bought last fall by Goss & Small, who have made many improvements, putting in a very large new derrick and a new 30-H. P. hoisting engine.

Waldo County.

Heagan Mountain Quarry.—At this granite quarry 175 men are now employed getting out building stone and paving blocks.

Washington County.

St. Croix Coal and Freestone Company.—This company has bought the mineral rights over an extensive tract of land in the towns of Perry and Pembroke, and is making arrangements to quarry the freestone, which is of fine quality. The company has also set up a drilling plant, and is using the diamond drill in exploring for veins of coal, which are said to exist. Some prospecting for coal was done in Perry as long ago as 1842, but without any practical results.

MARYLAND.

Montgomery County.

Huddleston.—Mr. L. W. Weed, who has been sinking a shaft on this place has, it is reported, found some rich ore. The ore is quartz, carrying free gold. Similar finds have been made in this county from time to time, but they have all been small pockets and no regular vein has ever been developed.

MICHIGAN.

Copper.

We take the following from a late issue of the Lake Linden "Native Copper Times": Drifting south on the Osceola amygdaloid from the cross-cut in No. 4 shaft Calumet is going on with vigor. Disclosures of value are being made. From this quarter resources of unquestioned value are beginning to appear. And the lode making north into Calumet & Hecla property from the Osceola bounddary is rich as mud, and that is about 10,000 ft. south of the cross-cut. This large tract of virgin ground, virtually known to be rich in mineral from surface to great depth, and all along the property from north to south, is territory enough to make another immense mine. But another cross-cut from the 12th level, South Hecla, is now being run over from the conglomerate to the Osceola lode and it must be getting pretty well into the belt; should it be found rich in this latest cross-cut it is very likely that extensive operations will be carried on in the course of a year or two on that vein in the Calumet & Hecla property.

Iron—Gogebic Range.

Press dispatches from Ironwood state that an epidemic of typhoid fever has broken out at that place. So many of the miners have been stricken that several of the mines are practically closed.

Norrie.—This mine, at Ironwood, closed down on June 22d. It had been working a half force of 650 men, but will stop everything except shipping from stock piles. Other big mines at Ironwood are reducing forces also.

Iron—Marquette Range.

Lake Superior Iron Company.—At the Lake shaft Lake Superior mine the management will put gangs of men at work exploring the ground above the 444-ft. level. Two rises will be started for this purpose. There is a large territory there that has not yet been thoroughly tested for ore. The new shaft at Section 16 has.

Republic.—A press dispatch from Ishpeming states that the owners of the Republic mine have sent orders to close down for two months, commencing July 1st. The Bond & Cleveland mine, employing 700 men, will also, it is said, be closed indefinitely.

MINNESOTA.

Iron—Mesaba Range.

(From our Special Correspondent.)

There has been added to the list of townships on the Mesaba, containing large quantities of good ore, that of 58-19. Some small finds have been made, but last week in Section 9 a large deposit of ore that has assayed 63·75% iron and 0·03% phosphorus was found. The ore is under an average surface of not over 2 ft.; in many cases the moss and leaves of the top of the ground alone cover it. Testpits have been sunk 20 ft. with no indication of a bottom to the ore body. This find lies about halfway between the Mountain Iron and Lowmoor mines and the Lake Superior company's property, and is about three miles north of the branch line of the Duluth, Missabe & Northern to the Lake Superior. The land is owned by the Duluth Iron Mining Company, and is leased on a 30-cent royalty to an Eastern syndicate.

Forest fires of the past week wiped out the flourishing village of Virginia, making homeless 2,500 people. The village of Merritt, 10 miles to the eastward, was also destroyed, throwing 600 people out of homes. Of the mines about Virginia the Missabe Mountain, the Moose, Lone Jack, Shaw, Great Northern, Great Western, Rouchebeau-Ray and others lost camps and mining equipment, the latter in most cases being of no great value. The Canton, at Merritt, lost its equipment, one of the best on the range. The loss by this fire to mining towns and companies cannot be less than $1,000,000. Shipping from the Mesaba will be materially hindered by the fires. At the

ore loading is going on directly from the ore body same time bridges on the Duluth & Iron Range Railroad, between Tower and Ely, 60 miles from Virginia, were burned by forest fires. Shipments from the big Chandler mine, at Ely, will be hindered for a short time.

At the big Biwabic mine, in Section 3, 58, 16, at the rate of a 24-ton car every four minutes. The ore is loaded by a steam shovel of two-ton capacity, which is working directly ahead into the end of a cut. When the shovel is able to work sideways the work will be easier, for there will be less distance to traverse. The shovel handles about four tons per minute, and is loading about 500 tons daily. This week it begins on an ontput 1,000 tons daily.

The ore is dry and fine grained, and is handled with much ease. The wisdom of stripping off the 30 ft. of surface over the ore in this property, which had been generally questioned, is now universally recognized.

Iron—Vermilion Range.

Minnesota Iron Company.—This company, operating the Minnesota and Chandler mines, has laid off over 900 men, and for the first time in the history of these mines since they became shipping properties they are mining with a day drift only, says the Tower "Iron Journal." The action of the company is due entirely to the depressed condition of the ore market. On the other hand, there is increased activity in the shipment of ore from the stock piles. The force has been nearly doubled within the week and 20 to 24 ore trains a day are now in service between Soudan and Two Harbors. The new ore crusher at No. 8, where is stocked 170,000 tons, is in operation and cars are being loaded from its pockets. The apparent intention of the management is a curtailment of further extensive mining operations, but increased activity in shipments of the ore already mined.

Zenith.—This mine, at Ely, has been closed down entirely and the pumps taken out. The latter fact is conclusive that the company anticipates no further operations this season. There are about 15,000 tons in stock.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

Joplin, June 26.

The mining operations of the past two weeks in this lead and zinc belt have been on a rapid decline, and the outlook is anything but encouraging. The zinc ore market has milled at an average of $20.50 per ton and the lead ore market closed Saturday at $18.50 per thousand; the average price for the past two weeks was $19 per thousand. The coal strike is still on and no prospects of an agreement being reached between the miners and operators. It has been hoped that enough of coal could be had to keep the zinc smelters mining, but the latest reports from eight of the smelters operating a total of 58 furnaces show that 24 furnaces were closed down last week. All may be closed in less than two weeks, which means the closing down of every mine in this belt. Following are the sales of ore from the different camps for the past two weeks: Ending June 19th: Joplin mines, 1,551,100 lbs. zinc ore and 233,970 lead, value $20,650; Webb City mines, 314,510 lbs. zinc ore and 27,660 lead, value $3,715; Carterville mines, 1,485,100 lbs. zinc ore and 112,000 lead, value $17,091; Zincite mines, 42,020 lbs. zinc ore and 3,520 lead, value $495; Galena, Kan., mines, 1,260,340 lbs. zinc ore and 190,660 lead, value $15,340; district's total value, $57,291; Granby mines, 286,180 lbs. zinc ore and 25,500 lead, value $6,459; Aurora, Lawrence County, mines, 1,435,940 lbs. zinc ore and 135,610 lead, value $14,174; Springfield mines, 51,610 lbs. zinc ore, value $567; lead and zinc belt's total value, $79,491.

Week ending June 26th: Joplin mines, 1,191,540 lbs. zinc ore and 301,200 lbs. lead, value $17,487; Webb City mines, 254,660 lbs. zinc ore and 13,470 lead, value $2,789; Carterville mines, 1,653,040 lbs. zinc ore and 56,140 lead, value $17,540; Zincite mines, 190,990 lbs. zinc ore, value $1,709; Oronogo mines, 92,840 lbs. lead ore, value $1,638; Wentworth mines, 89,600 lbs. zinc ore, value $851; Galena, Kan., mines, 1,075,500 lbs. zinc ore and 80,420 lead, value $9,100; district's total value, $51,114.

MONTANA.

Deer Lodge County.

Hope Mining Company.—This company has declared a regular quarterly dividend of 25 cents a share, payable July 1st.

Lewis and Clarke County.

Hubbard Tunnel.—This long tunnel has at last cut the vein. The ledge is said to be 5 ft. wide and rich.

Piegan Mining Company.—At the recent annual meeting of this company it was determined to resume work. A considerable amount of supplies have been purchased.

St. Louis Mining and Milling Company.—This company is shipping high-grade ore from its mine. This company has filed another suit against the Montana Mining Company, Limited, for the possession of certain premises, $10,000 damages and an injunction until the final termination of the case. It is virtually a re-opening of the suit which was decided against the plaintiff a few weeks since. The question again is one of the apex.

Silver Bow County.

American Development and Mining Company.—The office of this company has been removed from Marysville to 209 North Main street, in Butte.

Gambetta.—Sinking is still in progress on this property; it is thought that the 600 level will be reached shortly.

Glengarry No. 2.—The Montana Ore Purchasing Company has been paying $5,000 a month royalty on an ore extracted from this property, which is situated on the flat between the Silver Bow mill and the Parrot smelter. The first installment on the purchase of this property of $10,000 has been paid, however, and it is said that the mine will be taken over shortly by Mr. Heinze and his associates.

Indiana Mining Company.—Work will be resumed on this company's property, in Park Canyon, it is said.

Ophir Mining Company.—Work will be suspended on this property for an indefinite period.

NEVADA.

Churchill County.

(Reported for the "Engineering and Mining Journal.")

White Cloud Copper Mining Company.—This corporation is composed almost exclusively of New York capitalists, who about a year ago took up some nine claims lying in this county. These claims are situated on the East Range, which lies between the Humboldt and the Buena Vista valleys. The equipment consists of a wire rope tramway about a mile long, and a small smelting plant containing one 36-in. furnace. The prospects at present are very bright, and the company is contemplating increasing the capacity of the furnace plant. The nearest railroad station is Lovelocks, on the Central Pacific, distant 40 miles. Although this makes a long haul necessary, the company believe that, by the economical mining of its argentiferous ores, it will have a reasonably safe proposition. Although this company is working on most of its claims, there are only three claims that at present are looked upon as immediate producers. The most important of these is the Carbonate. The peculiarity of this claim is that the croppings can be traced in every direction over the entire surface of the claim. Like the mines in southern Arizona, the ore lies in the limestone near the contact of a siliceous rock. Ore taken right off the surface will assay 6% copper, and by sorting can be brought up to 20%. This property is right on the line of the tramway, which makes the handling of the ore economical in the extreme. The company, at present, has some men taking out ore at the surface; bnt the main efforts are directed toward tunneling in order to strike the ledge at a depth. The second claim in importance is known as the Stone Cabin, and lies about 1,500 ft. southwest of the Carbonate. The ore is the ordinary yellow sulphurets or chalcopyrites. The gangue is graywacke, and the walls are granite, running at times into porphyry. These sulphurets carry more silver than any of the other ores of the company. Up to the present the company has had to hoist all the ore from this property; but there will soon he completed a working tunnel to connect with the main drift. This mine is worked by overhand stopes. The third property in importance, though development may prove it to be the first, is the Red Oxide. This was so called from the fact that on the surface the red oxide of copper led to the discovery of the claim. The ore is principally a chalcocite, at times psendo-morphous. The gangue is a micaceous hematite. About 500 ft. below the croppings a tunnel has been run to tap the ledge, and is now over 400 ft. long.

One advantage is that the ores are self-fluxing. The limestone in the Carbonate ore and the hematite in the Red Oxide ore give just about the proportion of lime and iron to make an easily fluid slag that does not carry over 0·6% copper.

Nye County.

The Clementina & Keystone mines, at Yellow Pine, are said to be looking extremely well.

Magnolia Manufacturing Company.—This company has leased the Hiko mill for two years. It will be repaired and it is expected to start to-day.

Storey County.

Belcher Mining Company.—None of the exploration work in this property shows any sign of improvement. During the week 33 tons of ore have been taken out.

Consolidated California & Virginia Manufacturing Company.—Some fair grade ore is being extracted from various portions of the 1,650 level. On the 500 level a few tons of ore has been extracted that assayed $21 a ton. From all parts of the mine 277 cars of about 270 tons was extracted, the average assay value of which, per car sample, was $36.20 per ton. Ninety-one tons were shipped to the Morgan mill, which was to have commenced crushing June 17th.

Crown Point Mining Company.—A portion of the ore encountered in the west cross-cut on the 400 level is pay-ore. From No. 1 cross-cut, on the 700 level, 150 tons are being taken out for milling test. Stoping is going on on the sixth floor of the south raise of the 100-ft. level. Here there is a streak of ore from 2 to 3 ft. wide, assaying fairly well. During the past week 69 tons have been shipped to the Mexican mill, the average battery assay of which is $17.42.

Hale & Norcross Mining Company.—Work in the upraise in the west cross-cut on the south boundary on the 1,800 level has been stopped, as it failed to show anything of value.

Justice Mining Company.—The face of the south drift from the north drift on the 822-ft. level is at present in low grade quartz; 8 to 10 tons a day are being taken out from the north and south stopes on this level, which average $20 a ton; 81 tons have been shipped to the Washoe mill during the last week, the average battery assay of which was $19.09.

Potosi Mining Company.—The top of the raise on the north drift, 100 ft. north of the east cross-cut, on the 930 level, shows 2 ft. of good ore; the north raise from the 1,000-ft. level, has made connections with the north drift on the 930 level. The south stope is yielding the usual amount of fair grade ore. During the past week 652 tons raised from the 550, 1,000 and 1,150 levels were shipped to the Nevada mill. During the week 670 tons was milled. The average battery assay was $24.02; average car sample assay, $28.72.

Savage Mining Company.—Some fair grade ore is being extracted from the fourth floor to the twelfth floor of the 1,100 level. During the week 102 cars, averaging $37.50 per car sample, have been hoisted from this level; 135 tons of ore have been shipped to the Nevada mill.

Silver Hill.—Operations have been suspended on this property and the mine is shut down indefinitely.

Storey County—Comstock Lode.

(From our Special Correspondent.)

Crown Point Mining Company.—A shipment of 500 tons of ore has been made to the Mexican mine for a test run with the Frue concentrators recently put in the mill. The ore is low grade; and if results are satisfactory, further shipments of similar ore will be made.

Crown Point Mining Company.—Shipments of ore will commence this week. On the 1,100 level are stoping north from the raise, above the sixth floor of the south raise, on a streak of ore which ranges from 2½ to 3 ft. wide, yielding fair assays. There is now being taken out 150 tons of ore from No. 1 cross-cut, 700 level, for a milling test.

Yellow Jacket Mining Company.—The upraise from the ore body found in the east cross-cut, 1,100 level, shows the ore to be improving and the present indications are favorable for finding an ore body. Some of the assays have run into the thousands.

The following is the weekly tabulated statement of ore hoisted from Comstock mines and milled, with the car and battery assays, bullion shipments., etc.:

Mines.	Tons H'st'd	Av Car S'mple Assay.	Tons Mil'd	Av. Bat'ry Assay.	Bullion for Week.	Bullion shipped.
Belcher	[1]33	.....	.....	.....	.....	.....
C. C. & Va.	270	36·20	[2]91	.....	.....	.....
Crown Pt.	.....	.....	69	17·42	.....	.....
Justice....	70	20·00	81	19·09	.....	.....
Potosi.....	652	28·72	670	24 92	.....	[3]377lb
Savage ...	[4]102	37 50	[5]135	.....	.....	.....

[1] Good grade ore. [2] Commence crushing at the Morgan mill this week. [3] Crude bullion. [4] Cars. [5] Shipped preparatory to commencing crushing.

The Eureka mill will start up about July 1st. The pans and settlers have just been put in and all will be in readiness, it is expected, by that date. The mill will be lighted by electricity. It is understood that the mill will be about eight acres in extent, with a depth of from 6 to 8 ft. It has been estimated that with the mill working 100 tons per day there are enough sluice and tailings to keep it running for four years. It is difficult to fix any average value to these accumulations. Of course these are regarded as perquisites of the mill-owners, but a short calculation, with the above figures as a basis, will show what a valuable perquisite the tailings are likely to prove.

White Pine County.

Chainman.—Work has been discontinued on this property and it is stated that the development work prosecuted by Mr. D. H. Jackson did not make a favorable showing.

NEW HAMPSHIRE.

Grafton County.

(Reported for the "Engineering and Mining Journal.")

Dodge Mine.—A letter from Superintendent C. A. Warner gives the results of a week's run on ore from this mill with the Crawford mill. During the week samples were taken direct from feed (heads) and outlet (tails) every 30 minutes, each lot of samples for each 12 hours being carefully sampled down and from two to six assays made to get average of each lot, for each 12 hours' run. The assays of the heads showed from $8.01 to $10.15 per ton; those of the tails varied from nothing to $1.64 per ton. The average for the six days was: Heads, $9.06; tails, $0.976 per ton, showing a saving of $8.084 per ton, or over 89% of the assay value. The total value of amalgam, plus gold, after retorting mercury, added to assay value of concentrates from under disc, amounted to within $3 of the amount that the ore should have yielded at $8.08 per ton, proving the assay values correct. In running the mill the speed was 82 revolutions; 10¼ lbs. ore per minute was the average feed and 4·8 gallons water were used. During the week, the

speed, feed and water were changed but once, and that was Saturday, when speed was increased to 85 revolutions per minute, water decreased about 0·2 gallon per minute, and feed increased ¼ lb. per minute. Under these conditions a series of assays showed the tails to be entirely free from gold. In the Dodge ore the gold occurs in very fine particles, and it has always been considered impossible to save by stamps or otherwise over 50% of the assay value; the rock contained about 6% pyrites.

OHIO.

Belmont County.

Pittsburg & Wheeling Coal Company.—This company's mine, at Wheeling Creek, near Bridgeport, is now being operated in a seam of fine coal, averaging about 6 ft. in thickness. The wire rope system of haulage has recently been introduced and a number of new sidings put in for handling loaded and empty cars.

Muskingum County.

Christy Coal Company.—This company is making arrangements for the operation of its mine near Zanesville, O., and expects to begin shipments in a short time.

PENNSYLVANIA.

Anthracite Coal.

Green Ridge Colliery.—By an explosion of gas in this colliery, at Mt. Carmel, on June 28th, one man was killed and two others injured fatally.

Mid-Valley Coal Company.—The breaker of the company, near Mt. Carmel, which cost $100,000, was destroyed by fire June 16th.

Packer No. 3.—Work is progressing rapidly on the new slope on the Holmes vein, at Packer No. 3 colliery, which when completed will much increase the shipments, says the Scranton "Tribune." The slope is being sunk from the surface at a point about 500 ft. southwest of the Mammoth slope, and will go to a depth of 500 ft. The hoisting engines to be used during the progress of the sinking have been brought from Continental colliery, Centralia.

Truman M. Dodson Coal Company.—This company, with headquarters at Bethlehem, has been incorporated; capital, $150,000.

York Farm.—An airway has been just completed at York Farm colliery, which is considered an important mining feat. The opening was extended from the big tunnel on No. 1 lift to the surface on Sharp Mountain. The tunnel runs south 3,000 ft. from the slope and the airway was driven from its southern limit. It is 900 ft. long, and for the first 500 ft. pitches at an angle of 35°. For the rest of the distance the pitch is 75°.

Bituminous Coal.

Mr. John S. Newmeyer, the coke operator, of Dawson, is reported to be in financial straits. During the past week judgments aggregating $45,000 have been entered up against him, at Uniontown, and mortgages amounting to $126,225 are on record. Mr. Newmeyer owns 2,170 acres of coal lands in Perry Township, including 580 acres of surface, which cost about $2,100 an acre, and $55,000 have been expended in sinking shafts, opening mines, buildings and other developments of the property. Mr. Newmeyer's embarrassment is the result of overloading with coal lands which cannot be realized on in a tight money market. Some capitalists in Fayette County are organizing a company with $300,000 capital to take his holdings and complete the plant. tI is thought there are some large notes not yet entered up, and that the liabilities will exceed $200,000.

Forest Hill Mines.—At these mines, near West Newton, Ellsworth & Co. have 75 men at work pushing the opening. Work on the hoisting and other machinery is nearly completed. When the mine is fully opened it will employ some 300 men.

Ten-Mile Coal Company.—This company was organized at Brownsville, last week, by electing Samuel Pearsall, president; J. Holmes Patton, secretary, and Daniel Pearsall, treasurer. The following board of directors was also elected: J. D. Bakewell, D. M. Hart and C. L. Snowden. This company will soon develop and operate the large tract of coal recently purchased above Brownsville. It is about three miles square and has a river frontage of one and a half miles.

SOUTH CAROLINA.

Columbia Phosphate Company.—At the annual meeting in Columbia, S. C., June 12th, the following officers were elected: W. A. Clark, president; John C. Haskell, vice-president; C. M. Teed, secretary; John C. Haskell, Jr., superintendent. The reports show a satisfactory business for the past year.

Wando Phosphate Company.—At the annal meeting, June 12th, the following directors were elected: Francis B. Hacker, Charles Richardson and C. B. Richardson. At a meeting of the directors Francis B. Hacker was elected president; John W. Robinson, treasurer; J. P. Lockwood, secretary.

SOUTH DAKOTA.

Lawrence County.

Bristol Mining Company.—Development work is being resumed on this property.

Horseshoe.—A new shaft is being sunk on this property. Previous development work did not succeed in finding ore of any value.

TENNESSEE.

Campbell County.

Falls Branch Coal Company.—This company is preparing to put in an electric haulage plant at its mine, near Jellico.

Indian Mountain Coal Company.—This company's tunnel, near Jellico, has reached the main vein, which averages about 3 ft. 6 in. in thickness, and drifting on the vein has been begun. The erection of the engine-house, tipple and storage bins has been begun. This mine will be equipped with an electric haulage plant; the Jeffrey mining machines will be used and power will be transmitted by electricity from the generator outside the mine, which will be run by a 200-H. P. engine. The buildings and machinery will be sufficient for an output of 1,000 tons per day.

Proctor Coal Company.—This company, which already operates two coal mines, is now opening a new mine which will be known as the Grimstead, two miles from Jellico. The tunnel has already reached the vein and work is being pushed on the tipple and other buildings. Shipments from this mine will probably begin about August 1st.

VIRGINIA.

Spottsylvania County.

Powhatan Land and Mining Company.—This company is now getting out some ore of very good quality. The company has just completed a mill for working its ores.

FOREIGN MINING NEWS.

BRAZIL.

Dom Pedro Gold Mining Company.—It is stated that stoping has been commenced on the south of the 50 fathom crosscut, that the vein is rich, and a large output is expected.

Ouro Preto Gold Mining Company.—During April 3,002 tons of ore were raised, producing 774 oz. of gold.

Santa Barbara Gold Mining Co.—At the annual meeting held April 29th, it was stated that the result of the year's work was unfavorable, the mine working account showing a loss of $685. The ore treated during the year amounted to 8,970 tons, a decrease of 3,080 tons as compared with the preceding year. The average yield of the ore treated was 0·31 oz., against 0·38 oz. in 1891. The ore raised was 11,410 tons, against 15,159 tons in 1891; total value of output, £11,124, against £16,567, in the preceding year. Expenses in Brazil and England were £12,759 in 1892, against £15,806 in 1891. During the year a new shaft was sunk 13 fathoms, making a total depth below the deep adit of 164 fathoms. Limited explorations led to no discovery of importance. Mr. Treloar, the superintendent, ascribed much of the difficulty to the deficiency of labor, but it was hoped that the Brazilian Government would succeed in its efforts to introduce Chinese coolies into the country.

St. John del Rey.—The tram level west has passed through 62 ft. of mixed mineral, and the south wall has not yet been found. During March 842 tons were crushed.

BRITISH COLUMBIA.

New Vancouver Coal and Land Company.—This company has just received the fourth electric locomotive for its mines at Nanaimo. It was built in the shops of the Canadian General Electric Company, at Peterboro, Ont.

Kootenai.

Sampling works will be built at Kaslo with a capacity of 100 tons a day.

ENGLAND.

Dolcoath.—At the quarterly meeting of this company the statement of profits showed a net earning during 12 weeks of £10,771; total available balance, £16,498, and a dividend of £2 5s. per share was declared. Capt. Josiah Thomas stated that the mine was improving at the bottom and that it had most excellent prospects. The stockholders, in recognition of Capt. Josiah Thomas' services for the past 25 years, during which time he has had complete control of the mine, voted him a memorial piece of plate, to cost 100 guineas.

MEXICO.

(Special Correspondence of Richard E. Chism. Propriedad literaria reservada en la Republica Mexicana.)

MEXICO CITY, June 20.

Chihuahua.

It is greatly to be feared that the Palmarejo district in this State will be the scene of another fiasco on the part of an English mining company. It is due to our transatlantic cousins to say that as individuals they are very successful in mining in this Republic. English companies, however, are and always have been since they commenced to mine in this country, abnormally and phenomenally unsuccessful. They are frequently deceived in buying their mines and the properties are usually managed at this end without skill, economy or common honesty. The history of this company has been pretty fully given in the "Journal." According to the latest reports some $4,000,000 have been invested in one way or another in the property, while the monthly output of the latter is stated to be some $40,000, of which from 75% to 80% are consumed in expenses.

Durango.

A professional friend, who lately visited the famous gold placers of the Indé district, states that these lie some 16 kilometres to the southwest of the town of Indé, and comprise a large scope of country intersected by 20 or 30 dry or wet creeks of all sizes. The bottoms of all these streams carry more or less gold. The probable extent of the placers is from 20 to 30 square miles. Not all of this is gold bearing, but it contains placers of more or less value scattered all over. The country rock, as far as can be judged from outcrops and other superficial exposures, is mostly metamorphic or sedimentary of various kinds.

These formations are overlaid by a cap of cement boulders upon which rest the gravel beds that carry gold. The thickness of these latter vary from ½ in. to 6 or 7 in. Above the gold-bearing gravels there is a cap of alluvial soil, which varies from 1 ft. to 20 ft. in depth. This soil is entirely barren of gold and constitutes the greatest obstacle to the exploitation of the placers, as it must be either dug or washed away before the gold-bearing gravels can be got at. It is estimated that it would cost $500,000 to obtain enough water for the purpose, and the cost of excavation and removal by other means would probably be much greater. These placers have been exploited for generations by the Indians of the neighborhood and by some intuition they can detect in a moment, by mere inspection, the spots most likely to contain gold. Owing to the great extent of the region and the limited time at his disposal, my informant confined his explorations to the spots indicated by the natives, where, sure enough, gold was always found and washed out in bateas in a most satisfactory manner.

As these spots were always on the outcrop of the gravel bed at some place intersected by the creek beds above mentioned no estimate could be made of the extension of the placers back from the streams. Naturally, also, no estimate could be made of the average gold contents of the gravel; where the experiments were made the results were very valuable, from 10 cents to $5 per cubic meter being presented.

The silver mines in this same district have been rather numerous, but at present only three are producing. These are the Potrillo, the Yegua and the Caballo Antiguo (the Colt, the Mare and the Old Horse) mines, situated close together on the south side of a hill called the Bufa and some eight kilometers southwest of Indé. These mines are probably situated on a pocket or chimney of which the Yegua mine occupies the centre. The claims of this latter mine comprise only about 10 meters along the veins, and it is probably the smallest mine now being worked in this Republic.

The claims of the other two mines are each 200 meters long, but their workings are crowded toward the center occupied by the Yegua. The workings of the latter are about 150 ft. deep. The ores are what are called Colorados in this country, consisting mainly of silver chloride inclosed in a soft ferruginous mass. The three mines are said to be producing a fair amount of ore, with 100 oz. of silver and upward per ton, but my informant was not able to ascertain the amount.

Another notable property in this region is the Wilson mine at Guanacevi, belonging to Hearst & Haggin, of San Francisco. This remarkable property is said to have about 4,000,000 oz. of silver in sight, and the immense mill will soon be ready to convert hard rock into hard cash.

As regards the situation of the two towns I have mentioned I will say that Indé lies some 170 kilometers due west of Massima station on the Mexican Central Railroad, while Guanacevi is about 50 kilometers southwest of Indé.

ONTARIO.

Ontario Natural Gas Co.—This company is making arrangements to put down pipes from its gas wells at Kingsville to the towns of Walkerville and Windsor. The cost will be about $140,000.

QUEBEC.

American Asbestos Company.—This company has recently resumed work on its mines at Black Lake, which have been closed down for two years. Mr. J. Klein is Superintendant.

Anglo-Canadian Asbestos Co.—This company is working on its property at Black Lake, but the number of men employed is still small.

Hall Mica Mine.—This mine at Escoumains, below Quebec, is now working with a small force. The mica is being taken from a shaft about 25 ft. deep. The vein runs from 50 to 60 ft. in width and has been explored for a distance of about 1,700 ft. The mica is a good quality and gives an average size of about ×4.

SOUTH AFRICA.

According to statements made by officers of the South West Africa Company, a discovery of a large body of copper ore has been made in Damaraland, north of Otavi.

Transvaal.

The gold production on the Witwatersrandt gold fields for May was 116,911 oz., an increase of 4,858 oz. over the previous month. The total output reported to date is 3,578,821 oz; the cyanide process extracted 24,000 oz. of gold during May.

Eighty-five Fathoms Level West.—The lode at this point is still well defined, and yields a little ore. At the new shaft there are as yet no indications tha

the lode is near. In 1892 this company's output was 1,405 metric tons, according to the "Mineral Industry," in which the production of all the leading mines of the world is noted.

Geldenhuis Deep Levels.—The water found in sinking the two shafts has much interfered with sinking. It is now being removed and sinking is being pushed rapidly. One shaft, 12 ft. by 4½ ft., is down 190 ft., and the larger one, 20 ft. by 5½ ft., is down 156 ft.

Namaqua Copper Mining Company.—At the Tweefontein mine, the 95 fathoms level east has passed out of the ore ground for the present, but is being continued in order to prove whether it may make again farther east.

Rietfontein Gold Mining Company.—The directors' report, for the quarter ending March 31st, states: Mine, feet sunk and driven, January, 494; February, 374; March, 504; total, 1,373. Development has been pushed on both at the east and west ends of the property, and the reef is being prospected by a winze near the rock house. Further east the reef was again struck in a bore-hole by the diamond drill. At each of these strikes the reef maintains its richness. Mill.—The mill (20 stamps) ran, in all, 74 days, crushing 3,734 tons, at an average of 2½ tons per stamp, giving a yield of 29·817 dwts. per ton of rock milled. Tramroad from east to west, 7,000 ft. long, has been built; rock sorting house has been erected, and is now ready for work. The new 30-stamp mill is almost ready, and the service reservoir completed. The cyanide works erected by the African Gold Recovery Company, under contract with this company, will shortly commence operations. The account of working expenditure and revenue for the quarter shows a net profit of £15,000.

SOUTH AUSTRALIA.

Royalist Mine.—This mine at Naunine has been yielding largely of late. The ore is quartz containing free gold and the vein is of fair width. A recent lot of 100 tons gave 450 oz. of gold, and this is about the average yield.

Wallaroo & Moonta Mining Company.—The report for 1892 states that the business for the year shows a loss of £8,522, of which £981 is caused by the revaluation of silver ores purchased early in 1892, and £2,430 by the writing off to depreciation account of second-hand material at the mines. The balance of loss after deducting these items, £5,110, is more than accounted for by the unprofitableness of the operations at the mines during the first three months of the year. The total production of the Wallaroo and Moonta mines for the year was equal to 3,892 tons fine copper, and the refined copper shipped and sold in the colonies 3,522 tons. The ore raised at the Moonta mines was 16,630 tons net, producing 2,766 tons fine copper, equal to 16·6%, against 12,412 tons for 1891, producing 2,611 tons fine copper, equal to 19·5%. The ore raised at the Wallaroo mines was 8,723 tons net, producing 1,126 tons fine copper, equal to 12·9%, against 13,544 tons for 1881, producing 1,578 tons fine copper, equal to 11·6%. The falling off in the percentage of the Moonta ore has been caused by special circumstances, some of them connected with the restarting of operations after the strike. The report also states that the new gold and silver works have been completed.

SPAIN.

Tharsis Copper and Sulphur Co.—The directors of this company have, after writing off the usual depreciation out of the net profits for the year—namely, £246,377—set apart £40,000 to the reduction of mines, piers, railway and rolling stock. They recommend a dividend of 15 per cent. for the year, which absorbs £187,000 and allows £18,877 to be carried forward.

SUMATRA.

Petroleum.—The Petroleum Company of the Netherland Indies recently submitted a quantity of the petroleum obtained from Sumatra to Professor Engler, in Karlsrühe, for examination and analysis. He reports that it is superior in quality to both American and Russian oil, and that refined oil from it is superior in illuminating power by 40% to Baku oil. The company is sinking several wells at different points.

VICTORIA.

The government geologist of this province speaks hopefully concerning the prospects of quartz and alluvial mines in the Wedderburu goldfields. This district was famous for the size of the nuggets found in the early days of alluvial mining.

MINING STOCKS.

[For complete quotations of shares listed in New York, Boston, San Francisco, Aspen, Colo.; Baltimore, Pittsburg, Deadwood, S. Dak.; St. Louis, Helena, Mont.; London and Paris, see pages 22, 23 and 24.]

NEW YORK, Friday Evening, June 30.

The slump in the price of silver has naturally depressed the price of mining stocks. With daily reports from the silver mining sections to the effect that silver mines are closing down everywhere it is not to be expected that there should be much of a mining stock market, and yet the attention of the public has been drawn to mining shares more forcibly than for years past; indeed, this week there really was a better inquiry than at any time in the past four months; the inquiries come from people who, having faith in the future, regard the present as a good time to buy mining shares at a low figure. The financial stringency is, however, too widespread, and investors are timid. The volume of business done at the exchanges during the past week was limited, although the total number of shares sold, 11,750, shows an increase of 5,111 over last week's transactions.

The Comstocks were neglected this week. Consolidated California & Virginia declined from $1.85 to $1.65; total sales amounted to hut 200 shares. Mexican shows a sale of 100 shares at $1.20. Of Comstock Tunnel stock 1,500 shares changed hands at 7c. No other Comstocks were dealt in.

Of the California stocks we note sales of 210 shares of Standard Consolidated at $1.30@$1.45. Of Brunswick Consolidated 500 shares were sold at 5c. The superintendent of the Brunswick Consolidated Gold Mining Company writes as follows from Grass Valley, Cal., under date of June 21st: The ore in the drift on the 700-ft. level is coming together and forming a solid ledge.

The ore looks well, being full of sulphurets, and we are getting good essays out of it. No work has been done in the 600 ft. upraise since I last wrote. We had to put the men to timbering and repairing the shaft.

Of the Colorado shares Leadville Consolidated declined from 16 to 14c. At these prices 3,200 shares were sold. Small Hopes shows a transaction of 3,000 shares at 30c. American Flag, which had not been traded in for some time, this week shows sales of 600 shares at 2c. According to the official sales list of the Consolidated Stock and Petroleum Exchange, Lacrosse was this week traded in to the extent of 1,300 shares at 4@5c.

The Victor Gold Mining Company, of Cripple Creek, reports that the last three carloads shipped to the smelters netted $8,900. The ore averaged $373 gold per ton.

Ontario was in fair demand this week. The stock declined from $12.50 on Tuesday to $7 yesterday. Sales were made to-day at $9. Total transactions for the week aggregated 540 shares. Attention is called to the advertisement of the Daly Mining Company, which appears elsewhere in this issue, informing the stockholders that the management has decided not to pay the regular dividend that was advertised last week, owing to the present condition of the silver market.

Horn Silver, in spite of the most excellent showing made thus far this year by the company, has declined and a sale of 100 shares at $2 was made in the Stock Exchange to-day. Total transactions aggregate 600 shares at $2@$2.50.

Boston. June 29.

(From our Special Correspondent.)

The market for copper stocks the past week has sympathized with the general depression incident to the high rates for money and the decline in silver as well as ingot copper. Stocks have been pressed for sale, and prices in consequence have reached a lower level with only slight rallies on purchases by the bears to cover short contracts. There is no speculative buying, and parties who have bought on margins have been forced to sell at best price to be obtained, as it is impossible to borrow money on this class of collaterals. The Montana stocks have been especially heavy, and Boston & Montana sold down from $21½ to $18, the lowest recorded price in its history. The prospect of successfully placing the 25,000 shares of new stock at par, $25, is not very flattering.

Butte & Boston, which was quite strong early in the week at $7½, declined to $6 on realizing sales.

Centennial was pressed for sale on reports that the Osceola amygdaloid had been reached and has not turned out so well as was hoped. The stock sold in the early dealings at $5½, but the flood of stock offered for sale to-day caused a decline to $2½ with a later rally to $3. This stock sold at one time in its history at $47½ per share.

Osceola held up very well until to-day, when it yielded to the pressure and declined to $25, gaining ¼ in the later dealings.

Franklin sold at $10½ ex-div., with later decline to $10. There is not much offered for sale, the stock being well held. Quincy holds its price, $105, on small sales. Calumet & Hecla was very strong up to the 28th, and sold at $285@$289½. It was weak to-day, and an order to sell 40 shares could not be executed better than $280. Tamarack sold at one time at $143, but declined to-day to $137, with last sale at $138.

Atlantic declined from $7½ to $7, and Kearsarge from $6½ to $6. A lot of 300 shares of Allouez sold at 40c. Tamarack, Jr., sold at $14 in a small way, and Wolverine at $1¾.

3 P. M.—The market closed with a slightly firmer feeling.

San Francisco.

SAN FRANCISCO, June 30 (*By Telegraph*).—The following are the opening quotations to-day: Best & Belcher, 60c.; Bodie, 20c.; Belle Isle, 10c.; Bulwer, 10c.; Chollar, 45c.; Consolidated California & Virginia, $1.55; Gould & Curry, 45c.; Hale & Norcross, 35c.; Mexican, 70c.; Mono, 10c.; North Belle Isle, 10c.; Navajo, 10c.; Ophir, $1.15; Savage, 40c.; Sierra Nevada, 60c.; Union Consolidated, 60c.; Yellow Jacket, 95c.

London. June 20.

(From our Special Correspondent.)

The amount of business transacted in mining stocks has been rather greater than during the last few weeks, but it is still confined within narrow limits. The London Stock Exchange does not keep a record of the total sales, as is the custom in America, and it is only possible to judge of the volume of business by general indications and particular inquiries of leading members of the house. As far as can be ascertained the Stock Exchange business is not so dead here as it is in New York, where the transactions seem to diminish every day.

Speaking generally, there is an increasing objection in London to dealings in American stocks, mining or otherwise, but there is another factor attracting attention away from this quarter and that is the cheapness of many minor Australian mining stocks. The serious financial crisis in Australia and the scarcity of ready money consequent on the stoppage of payment by the Australian banks have made it necessary for Australians to sell out their investments at almost any price in order to raise the needful. This has resulted in the shares of excellent mining properties being sold at almost cost price, even where dividends of 50 per cent. are being paid. Naturally people with money here have been buying up such shares on the quiet and those of other companies have been neglected.

The only American stock that has exhibited any life during the week is Jay Hawk, the market for which has been good and firm, and the price has risen quite a shilling. This firmness has been caused by the news that the American blocks of shares have all been absorbed. It is quite likely that there will be a quick movement shortly. Holcomb Valleys have been firm during the week, and a new accession of buyers was caused by the news that the steam shovel is in place and will be at work in a very short time. There is no change, however, to note in the price, which remains at 1s. buyers. There has been a fair amount of buying in Golden Feathers, and the price has improved fractionally. Big Creek has fallen one-eighth during the week, and falls are also recorded in Yankee Girl, Rajah gold and Elkhorns. All other stocks have been dull and void of any particular interest.

Shares of the Springdale Gold Mining Company are being sold pretty freely here. A block of shares in the American company has been placed in the hands of Mr. J. Y. Watson, of the London Stock Exchange, who is doing a very fair business in them. An agency has been established here at 20 Ahchurch Lane, London, E. C. Assays have been made by Mr. B. Kitto, a leading metallurgist here, of ores submitted to him, and he reports extremely rich contents, but whether the ores were picked or whether they were an average of the ore taken out, there is no means of finding out. The shares of the Harquahala Gold Mining Company have all been applied for and letters of allotment have been sent out.

DIVIDENDS.

Standard Consolidated Mining Company, dividend No. 827, of ten cents per share, $10,000, payable July 25th, at the office of the Company, room s 15 and 17, No. 310 Pine Street, San Francisco, Cal., and at the Farmers' Loan and Trust Company, No. 16 to 22 William Street, New York. Transfer books close July 27, and reopen June 26.

MEETINGS.

Bankers' Gold Mining and Milling Company, at the office of Messrs. Wolffe, Webb & Chittendon, July 10th, at 10 a. m.

METAL MARKET.

NEW YORK, Friday Evening, June 30, 1893.

Prices of silver per ounce Troy.

June.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	June.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
24	4·83	37½	80¼	620	28	4·82½	34	69	·533
26	4·81½	36	77	·594	29	4·81½	31½	62	·480
27	4·81½	35	73	·565	30	4 82½	30½	63	·487

The action of the English government in closing the India mints for private coinage of rupees has been a shock and surprise to the silver market. Silver has fallen rapidly and panic prices have been the order of the day. Silver fell to 30¼d. The prompt action by the Western smelters to shut down on buying ores, and draw their furnace fires as soon as present stock is smelted, has produced a reaction in prices and silver closes stronger.

The United States Assay Office at New York reports the total receipts of silver for the week to be 81,000 oz.

Gold and Silver Exports and Imports at New York, Week Ending June 24th, 1893, and for Years from January 1st, 1893, 1892.

	Gold.		Silver.		Excess of
	Exports.	Imports.	Exports.	Imports.	Exports.
Week....	$13.040	$28,366	$486,909	$7,200	$461.443
1893.....	68,872,845	5,936,154	15.123,210	1,254,378	76,985,313
1892.....	39,699,129	6,262.133	11.031,206	790,821	43.643,381

During the five days ending June 30th the exports and imports so far as ascertained have been as follows: Exports. Gold, $4,825; silver $356,425. Imports: gold. $72,122; silver, $39.760. The gold came from the West Indies and South America.

We have put $4,825 gold as being exported, but as a matter of fact this amount was returned by a shipping firm as being contained in the silver bullion exported by them, and speaking in ordinary terms there were no exports of gold.

The statistics of the outward and inward movement of gold and silver are of great value when correct. Hitherto we have taken great care in reporting these items, but during the present week shippers have put a fictitious value upon their silver exports. Such information is misleading and of no value.

NOTES OF THE WEEK.

During the past week an event took place which, measured by the importance of its immediate and ultimate effects upon the currency and financial history of the world, can be classed as secondary only to the adoption of the single gold standard by Great Britain in 1818. The Indian Government stopped the free coinage of silver. This action was predicted in our last issue, being based upon cables from Europe.

The immediate effect of this was to depress the market for silver bullion, and at present the price is the lowest known in the history of the world.

Stocks of all kind have felt the slump. Silver mining stocks are at a low ebb, because the mines either have or will shut down in a few days.

Western railroad stocks are down because the railroads depend to a considerable extent upon transportation of silver ores for their revenue; for example; the Denver & Rio Grande Railroad stock has dropped some five or six points, as this road has a freight revenue from ore transportation equal to 25% of its total freight revenue. Other roads have suffered in like proportion. The middle Western roads have suffered because they are dependent to a certain extent upon the far Western roads for freight, and the disaster of one is more or less depressing to the other. To add to the confusion existing, money has continued at an unusually high rate, it being quoted on Thursday at 75%. The banks in the city endeavored to relieve the situation by an extraordinary issue of clearing-house certificates, and not less than $8,750,000 of these were taken out by five of the prominent national banks. This broke the rate to 6%, but on Friday morning it again opened at a high rate. The total amount of certificates issued up to the present time amount to $15,700,000. The demand for currency for Chicago and the Far West has ceased, and we expect that after July 1 that currency will flow from the West to New York. July payments on government bonds, railroad and industrial securities have been largely anticipated and the situation is already somewhat relieved. At present the chief obstacle to confidence here in New York lies in the existing situation between Philadelphia and New York, exchange on New York being quoted in Philadelphia at $5 per thousand, or ¼ cent per dollar. It is said that Philadelphia owes New York a considerable sum of money, already due, which it is unable to pay.

A feature of considerable importance and indicative of returning confidence is the increased amount of National Bank notes taken out; for instance: The total amount of National Bank currency ordered from Comptroller Eckels during the 28 days ending Thursday, June 28th, has been $3,617,700. During the same period of May the amount taken out was only $839,050 and the amount taken out in the same number of days in June, 1892, was just about $1,000,000.

We understand that an effort is being made to have Congress pass a bill allowing the National Banks to issue notes up to 95% of the par value of the bonds deposited by them to secure circulation. This under the present amount of bonds deposited would increase the circulation by $11,000,000. The movement is a good one and such a law should have been passed long ago.

The probability being strong that the Sherman bill will be repealed at the extra session of Congress soon to be held, the question has arisen whether the bare act of repeal would effect the revivication of the Bland act. Emphatically No. The Revised Statutes, Section 12, say: "Whenever an act is repealed which reapealed a former act, such former act cannot therefore be revived unless it be expressly so provided." This is conclusive and no one need worry about the re-enactment of the $2,000,000 a month coinage law which bears Mr. Bland's name. Under the old common law of England the repeal of a repealing act would, of itself, re-enact the act first repealed.

The "Wall Street Journal" says that the Bank of England has declined to name a price for eagles. It is stated that sovereigns can be imported with cable demand exchange at $4.82@$4.825, provided that the coins are of fair average weight. From this it would seem that the question of gold imports depends upon the settled condition of the money market at present rates. On the other hand, it is quite certain that if the money market becomes quiet with moderate rates for money prevailing, the rates for English exchange will increase beyond the importing point. It should not be forgotten that a considerable proportion of the July disbursements go to Europe.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$.56	$.60
Peruvian soles and Chilian pesos	.52	.55
Victoria sovereigns	4.85	4.88
Twenty francs	3.86	3.89
Twenty marks	4.74	4.78
Spanish 25 pesetas	4.75	4.80

Our to-day's report must, of necessity, bear the imprint of the stirring times through which we are passing. Money was dear, but now it may be said to be almost "out of sight," as ⅛ to as high as $\frac{3}{16}$ of 1% per day interest has been paid for call loans, and silver, which a short time ago was in the eighties, has declined tremendously, touching as low as 61 on Thursday and closing at 65@67c. to-day. As can readily be imagined this state of affairs causes business in everything to be restricted as much as pressing wants will admit, and the markets have all thus become more or less nominal.

Copper.—With the exception of casting copper, for which a very good demand exists at from 10@10¼c., but in which but little is doing, as smelters are disinclined to accept the low values, this commodity is almost unsalable; the larger lake companies hold for 11c., but other lots are offering and could certainly be bought at from 10¾c. down to perhaps 10⅝c., but even such low prices as these attract neither attention nor buyers. Electrolytic is not offered at all at the moment, and Arizona pig copper guaranted 96% is firmly held at 9¾c. Exports continue to be made on a very large scale, and this will probably be the case for some months to come.

The firmer market in London which we reported last week exists no more, prices having declined about as rapidly as they advanced, G. M. B.'s being quoted at the close at £43 5s. for spot, and £45 15s. for three months, the speculative buying having entirely ceased. Consumers have not done anything to speak of for the last fortnight, and it is not to be wondered at that prices have collapsed. The market for refined and manufactured descriptions is so very nominal that we omit the usual quotations.

The exports of copper from the port of New York during the past week were as follows:

To Liverpool—	Copper matte.	Lbs.	
S. S. Bovic	3,922 bags	461,024	$20,000
" "	154 casks	196,128	8,700
" Adriatic	4,885 bags	500,701	22,500
" Bissil	1,471 bags	140,110	6,300
" Halley	3,720 bags	423,108	22,860
To Liverpool—	Copper.	Lbs.	
S. S. Bovic	3,432 ingots	56,250	$6,000
" Bissil	438 pigs	91,487	9,000
To Bremen—	Copper.	Lbs.	
S. S. Spree	1 pkg	900	$98
To Rotterdam—	Copper.	Lbs.	
S. S. Edam	1,401 cakes	225,478	$24,803
" Sparndam	45 casks	56,250	5,590
" "	930 plates	116,075	12,768
To Hong Kong—	Copper.	Lbs.	
Ship Wm. J. Rotch	36 cases	33,600	$3,600
To Havre—	Copper.	Lbs.	
S. S. La Touraine	62 casks	77,000	$8,900
" "	187 pigs	56,231	5,293
" "	21 plates	2,257	237

Tin has been very unsettled, due to the financial state of affairs commented upon elsewhere. In the beginning of the week the market was very strong, but it closes with 19⅛ quoted for spot, 19¼ for July and 19⅛ for August. The public transactions have not been large, but it is understood that a good many contracts have been made privately, and tin which heretofore has been held by weak parties has been acquired by those that are strong, financially speaking. The last of the arrivals has also come in, and according to our calculations the total stock at present amounts to not more than about eighty-five hundred tons, enough to supply the ordinary consumptive demand of less than five months.

The fluctuations in the London market have been violent, the price naturally going down in sympathy with the decline in that of silver. While on Monday last spot metal was quoted at £87, it has declined to £83 10s., three months to £82, and all the year at seller's option is quoted at £81.

It is, of course, unnecessary to say here that the cost price of tin laid down in London all depends on the price of silver.

The Metal Exchange "Report" says: According to reports published of late, production of both the Banca and the Billiton mines is seriously decreasing, and the deficit for this year will probably exceed 2,000 tons. For the near future it is not likely that Singkep will compensate this shortage to any extent.

Lead has been very much depressed; early in the week sales were made at 3·40, at which price the smelters practically withdrew, with the result that sales at 3·45 have followed. There are now a good many inquiries for forward deliveries, but no sellers; 3·60 is now asked.

The foreign market is very steady at £9 10s. for Spanish and £9 12s. 6d for English lead.

St. Louis Lead Market.—The John Wahl Commission Company telegraph us as follows: "Lead dull, with the demand very light. Last sales were made at $3.20 with buyers holding off."

Spelter, in common with everything else, is dull; there are practically no buyers, this being especially true of the galvanizers, who are doing very little. The strike in the western coalfields continues, and we have to quote the market as nominal at 4·175@4·20 New York.

The foreign market we have to quote at £17 16s. 5d. for good ordinaries and £17 17s. 6d. for specials.

Quicksilver.—There is a fair inquiry for this metal. Quotations remain unchanged at $40 for New York and £6 17s. 6d. for London.

Antimony.—There is only a retail business doing in Cookson's at 10¾, L. X. at 10¼ and Hallett's at 9¾.

Platinum has been advancing somewhat lately and is now selling at $11 per oz. The cause of the advance is found in the fact that the amount of ore coming to market is 25% less than during the same time last year. One reason given which seems to be plausible, is that the winter was of exceeding severity and very late. This prevented mining operations, both digging and washing, and there is therefore really a short supply up to this time. It is probable that these conditions will soon change now that spring is fairly open and the high price ought to stimulate every miner to produce all the ore he can. It would, therefore, seem as though lower prices would prevail before winter, but the platinum market works very curiously at times and it is hardly safe to make predictions.

Nickel.—Quotations for 98% to 99% are 50@52c.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, June 30, 1893.

Pig Iron Production.

Fuel used.	Week ending June 30, 1892.	Week ending June 30, 1893.	From Jan., '92.	From Jan.,'93.
Anthracite.	77	33,738	71	33,699	896,301	838,963
Coke.	143	128,169	139	133,625	3,419,723	3,377,155
Charcoal	46	11,375	34	8,394	253,059	216,218
Totals	266	173,282	244	175,718	4,569,083	4,432,336

Pig Iron.—There is absolutely nothing new to report of the pig iron market this week. The dullness is as great as ever, indeed, if anything, it is even greater just now than we have been reporting for some time past. Advices from the Lake Superior region, which are published in our mining news columns, indicate that a considerable reduction has been made in the output of iron ore. At the same time we hear of furnaces going out of blast, and all signs point to a decreased production of pig iron. All this would tend speedily to improve the market were it not that the financial condition of the country at large is not calculated to inspire very great confidence with any branch of business. It is difficult to see how the iron trade could be quieter than it is now, but the future does not offer any hopes of improvement for some time to come. So far as actual trading in this market is concerned, we hear of nothing of importance. Prices are unchanged. We hear occasionlly of sales at low prices, but whenever this proves true, there is some especial reason for it, either that the seller requires money very urgently or that the grade is not a standard one. We quote: Northern brands: No. 1, $14.50@$15.25; No. 2, $13.75@$14.50; Gray Forge, $12.50@$13.00; Southern: No. 1, $14@$15; No. 2 F., $13@$13.50; No. 1 soft F., $13.25@$14; Gray Forge, $12@$12.50; tidewater. Scotch irons: Coltness, $21.50@$22; Eglinton, $19.50@$20; Summerlee, $20.50.

Billets and Rods.—There is no business of importance doing in this market. We quote: Steel billets, tidewater, $24@$25; foreign, $28.50@$29; wire rods, $33.50@$34; foreign, $40@$40.50; Swedish, $52@$53.

Manufactured Iron and Steel.—There is nothing new to report of manufactured iron and steel. Some small sales are reported. Prices continue low. We quote: Angles, 1·75@2c.; axles, scrap, 1·90@2·10c., delivered; steel, 1·85@2c.; bars, common, 1·50@1·60c.; refined, 1·65@1·9c. on dock; beams, up to 15 in., 1·80@2c.; 20 in., 2·10@2·30c.; car truck channels, 2@2·10c.; channels, 1·90@2·10c. on dock; hoops steel, 1·8@1·9c., delivered; links and pins, 1·85@2·10c., plates, bridge, 2@2·10c.; firebox, 2·5@2·8c.; flange, 2·10@2·25c.; marine, 2·50@2·75c.; sheared, 1·85@2·10c.; shell, 1·95@2·10c.; tank, 1·8@2c.; universal mill, 1·80@1·90c.; tees, 1·95@2·15c., all on dock.

Merchant Steel.—There is nothing of interest to report of merchant steel. The market continues quiet. Quotations are: Tool steel, $6.50@$6.75 and upward; tire steel, $2@$2.10; toe calk, $2.20@$2.30. Bessemer machinery, $2.10@$2.20. Bessemer bars, $1.80@$2; open hearth machinery, $2.20; open hearth carriage spring, $2.10@$2.20: crucible spring, $3.75@$4.

Old Material.—We do not hear of any business doing in old material. Quotations, in the absence of sales on which to base them, are nominally as follows: Old iron rails, $15.50@$16; steel rails, $11.50@$13; car wheels, $12@$14.

Rail Fastenings.—The market for rail fastenings continues lifeless. Quotations remain: Fish and angle plates, 1·55@1·60c. at mill; spikes, 1·9@1·95c.; bolts and square nuts, 2·45@2·50c.; hexagonal nuts, 2·55@2·60c., delivered.

Spiegeleisen and Ferromanganese.—No business has been done in either spiegel or ferro during the past week. Quotations are nominally as follows: 10 to 12% Spiegel $22@$22.50, 20% $25@$25.50. Ferro, $57@$57.50.

Steel Rails.—This market continues quiet and devoid of features of interest. A few sales are reported, but none was of importance. Quotations are unchanged at $29 mill or tidewater. Girder rails, $31@$33. Steel rails fit to relay can be had for $20.

Tubes and Pipe.—An average business is reported in this market. Ruling discounts on carload lots are as follows: Butt, black, 57½, 10 and 5%; butt, galvanized, 50, 10 and 5%; lap, black, 67½, 10 and 5%; lap, galvanized, 57½, 10 and 5%.

NOTES OF THE WEEK.

At the conference now being held at Pittsburg, Pa., between the manufacturers and the Amalgamated Association, the price of puddling was agreed upon at $5 a ton. A late press dispatch states that there are strong probabilities that the union iron and steel mills in the Pittsburg district will close down at the end of this week. The failure to reach an agreement on the scale questions renders necessary the suspension of work. During the discussion of the iron wage scale little attention has been paid the outcome of the conferences on rates to be paid in steel mills. Since last week the committee representing Excelsior Lodge of the Amalgamated Association has daily held conferences with the officials of Jones & Laughlins in an effort to reach an agreement. Reports given out at the conclusion of the different sessions always indicated that amicable terms would be made and the difference between the men and the firm was almost insignificant. B. F. Jones, senior member of the steel firm, plainly and openly, it is said, told the workers' representatives that a 30% reduction in every branch of the steel department must be accepted. There is a strong feeling on the part of the workmen against accepting such a heavy cut and it is understood that the conference committee was instructed not to make any such concessions.

The Cincinnati Rolling Mills Company, of Cincinnati, O., has signed the scale for '93-'94.

The stockholders of the Bethlehem Iron Company held their annual meeting at Bethlehem, Pa., on June 27th. Hon. Charles Brodhead was chairman. The number of shares represented was 66,000. The following Board of Directors was elected: Robert H. Sayre, Sr., E. P. Wilbur, R. P. Linderman, George H. Myers and John Fritz, of Bethlehem, and Joseph Wharton and Beauveau Borie, of Philadelphia. The President's annual report was received with great satisfaction. The Board of Directors afterwards elected R. P. Linderman, president; Robert H. Sayre, vice-president and general manager; John Fritz, consulting engineer; second vice-president, Russel W. Davenport; superintendent, Owen Leibert; assistant superintendent, Robert H. Sayre; treasurer, C. O. Brunner, and secretary, Abraham S. Schropp.

Buffalo. June 29.

(Special Report of Rogers, Brown & Co.)

Business in this territory during the week has been very largely confined to malleable brands, some good-sized contracts having been placed. Work at the foundries is dropping off rapidly, as is usual at this time of the year. Demand for pig iron for gray iron use is naturally decreasing correspondingly.

We quote for cash f. o. b. cars Buffalo: No. 1 X foundry strong coke iron, Lake Superior ore, $14; No. 2 X foundry strong coke iron, Lake Superior ore, $13.25; Ohio strong softener No. 1, $14; Ohio strong softener No. 2, $13 25; Jackson County silvery No. 1, $17@$17.30; Jackson County silvery No. 2, $16.30@$16.80; Lake Superior charcoal, $16.00; Tennessee charcoal, $16; Southern soft No. 1, $13.65; Alabama car wheel, $18; Hanging Rock charcoal, $20.50.

Chicago. June 29.

(From our Special Correspondent.)

Pig iron has fallen several points; iron and steel of all descriptions are very low in price and weak, and, while the outlook is perhaps scarcely as uncertain as it was several weeks ago, it is bad enough. The general curtailment of operations at blast furnace and mill will afford breathing time to many of them and will probably be the only means to correct the evil of overproduction.

Pig Iron.—Large consumers in the implement trade have placed their annual contracts for local coke iron. The aggregate tonnage was the same as last year. The buyers realized that raw material was exceedingly low, and that this was a propitious time to close. Inquiry is a little better, and local furnace agents begin to feel more hopeful of the near future.

Southern Coke Iron.—Selling agents are crowding the market in every way possible, while buyers are taking such material as they require at pretty much their own figures. There is a very moderate inquiry for small lots, and several for 500 to 1,000 tons, but there will be no activity at all until August. Lake Superior charcoal iron continues dull.

Quotations per gross ton f. o. b. Chicago are: Lake Superior charcoal, $16.25@$16.75; Lake Superior coke, No. 1, $13.75@$14.00; No. 2, $13.25@$13.50; No. 3, $12.25@$12.50; Lake Superior Bessemer, $14.00; Lake Superior Scotch, $14.50@$15; American Scotch, $16.00@$16.50; Southern coke, foundry, No. 1, $14.00; No. 2, $12.35; No. 3, $12.00; Southern coke soft, No. 1, $12.75; No. 2, $12.50; Ohio silveries, No. 1, $16.50; No. 2, $16.00; Ohio strong softeners. No. 1, $16.75; No. 2, $16 25; Tennessee charcoal, No. 1, $17; No. 2, $16.50; Southern standard car wheel, $18.50@$19.

Structural Iron and Steel.—Several specifications are in the market for bridgework, but the tonnage is small and competition keen. Building material is being taken in a retail way at low prices. Quotations, car lots, f. o. b. Chicago, are as follows: Angles, $1.75@$1.85; tees, $1.95@$2.05; universal plates, $1.75@$1.85; sheared plates, $.75@$1.85; beams and channels, $1.80@$1.90.

Plates.—While warehouse trade continues fair, mill business is slow and prices irregular. Steel sheets, 10 to 14, $2.25@$2.35; iron sheets, 10 to 14, $2.20@$2.30; tank steel, $1.90@$2; shell iron or steel, $2.50@$2.75; firebox steel, $4.25@$5 25; flange steel, $2.74@$3; boiler rivets, $4@$4.15; boiler tubes, all sizes, 65%.

Merchant Steel.—Several large plow manufacturers placed contracts during the week for miscellaneous steels, and specifications are out from other implement men, indicating that a general buying movement has set in from this class of trade. The tonnage placed so far is fully as large as last year. Quotations are: Tool steel, $6.50@$6.75 and upward; tire steel, $2@$2.10; toe calk, $2.30@$2.40; Bessemer machinery, $2.10@$2.20; Bessemer bars, $1.60@$1.70; open hearth machinery, $2.25@$2.30; open hearth carriage spring, $2.10@$2.20; crucible spring, $3.75@$4.

Galvanized Sheet Iron.—There is a steady though quiet run of warehouse business, but orders for mill lots are scarce. Discounts are unchanged at 70, 10 and 2½% off on Juniata and 70, 10 and 10% off on charcoal and jobbing quantities at 70 and 7½% off on the former and 70 and 10% off on the latter.

Black Sheet Iron.—Orders of any size are few and far between, carloads are still called for, and deliveries to dealers are now quite large. Prices are steady at 2·80c. for No. 27 common, Chicago. Jobbers quote 3c. for iron and 3·10@3·15, for steel, same gauge.

Bar Iron.—Annual contracts have been booked at very low prices, and many agents of mills east of here persistently refuse to meet the figures named by mills near here. Quotations vary considerably on season's business, ranging from 1·45 to 1·53c. Some lively competition is expected on the 200 refrigerator cars just booked by a firm here. Jobbers quote 1·65@1·75c. on iron and steel bars, and trade quiet.

Nails.—Steel cut nails are in poor demand from mill and weak at $1.20. Jobbing quotation is $1.30 in small lots. Wire nails are in better demand in lots of 500 to 1,000 kegs, and price is firmer at $1.45, some mills ask $1.50. Chicago jobbers report a fair demand from stock at $1.60.

Steel Rails.—The best that can be said is that the steel company is booking enough small orders to keep their South Chicago works busy. As to when the Joliet mills or the Union works on Stewart avenue will start up is a conundrum. Prices are unchanged at $30@$31.

Scrap.—Offerings by railroad companies are frequent, but dealers refuse to bid, and are only supplying steady customers. Prices are nominal. Railroad, $13.50; No. 1 forge, $12; No. 1 mill, $9.00; fish plates, $14.50; cast borings, $5.00; wrought turnings, $7.50; axle turnings, $9.50; machinery castings, $10; stove plates, $1.50; mixed steel, $9; coil steel, $15; leaf steel, $15; tires, $14.50.

Old Material.—Despite the shutdown of mills, some of the stronger have bought a very heavy tonnage of iron rails for quick delivery at a low cash price. These iron rails are in several lots at widely apart points, but an approximate price here would be about $16.50@$17. Consumers here assert they would not offer over $16@16.25 f. o. b. Chicago. Old steel rails are very dull at $1.25@$13.50 as to condition, length, etc. Car wheels unchanged at $14.50.

Philadelphia. June 29.

(From our Special Correspondent.)

Pig Iron.—Scarcely any business has been done this week. A few offers made last week were rejected to-day. There is no market for forge at any price. The suspension of work at the bar mills cuts off demand for the next two or three weeks. The foundries will run steadily all summer. No. 1 foundry iron, of good grade, can be had at $15; stove iron at $14.50. Southern irons are being offered, but the inducements are less than the risks, and hence there is no business.

Steel Billets.—Offers have been made for large lots of steel billets for delivery as late as September, the reason being that buyers are somewhat apprehensive of an upward movement in material in July. Manufacturers have been disappointed with the amount of business done during June.

Muck Bars.—Millowners expect to resume about the middle of July, with a good deal of business.

Merchant Iron.—The repairing season begins Wednesday. All mills shut down on Saturday. Quite a number of concerns will not be started up until orders justify. This means less competition and probably a little improvement in prices. Several manufacturers have said that since pig iron was advanced 50c., they have been making no money, and that bars must advance, or they will shut down. Quotations, $1.60@$1.70.

Nails.—There is a remarkably active distribution of cut nails. Some people who have been using wire nails are coming back to cut. Some concerns are turning very mean cut nails, made largely out of old rails.

Sheet Iron.—All the mills will be idle for perhaps two weeks. Stocks of sheets have been accumulating at stores. Business has been unimportant lately. The strongest feature of the market is the probable demand of stove manufacturers, who will place a good deal of business in July, if prices suit.

Skelp.—The situation has not improved sufficently to warrant an early resumption. Millmen say there is a large amount of business talked of, but that is all.

Wrought Iron Pipe.—The only business heard of lately is in a retail way, from stocks in stores.

Plate and Tank Iron.—The week has been without special features. There is a great deal of work in hand, which is absorbing plate mill stock, for which orders have not yet been placed, and which will no doubt come along fast enough to keep mills busy. Ordinary plate, 1·75c.

Structural Material.—The news of the Bourse contract of 3,000 tons came out just a day too late for last week's report. There are several other small contracts for office building and bridge work, which will foot up, the brokers say, some 3,000 tons.

Steel Rails.—The steel rail makers have acquired such a complaining habit that they continue to report the rail market dull when it is not. The business for June has shown quite an improvement, but all the orders are small.

Old Material.—A great deal of old material is being gathered at the yards, but there is no particular sale for it at present.

Pittsburg. June 29.

(From our Special Correspondent.)

Raw Iron and Steel.—There is not much of an encouraging nature that can be said in the way of trade at this time. There is an unusual complaint of dullness in the iron market, several influences combining to induce caution by both producers and consumers. The outcome of the wage dispute is awaited with the greatest interest, and mills are delaying to close contracts until the situation shall develop further. Buyers are taking only enough for immediate requirements, and the disposition seems to be to constantly reduce the size of the orders. Under this condition of affairs prices have become perceptibly weaker. With the exception of city furnaces on favorite brands of material there seems to be no standard price for anything, the ability of the buyer to pay cash enabling him to about make the price to suit himself.

The situation at present is a very unsatisfactory one. The question as to whether there will be a strike or a satisfactory arrangement will probably be settled during the coming week. Meetings have been held daily, but so far no conclusions have yet been arrived at. Business seems to be paralyzed. Sales for cash are reported at very low figures; the rates were even below those of last week.

Coke Smelted Lake and Native Ore.	
Tons.	Cash.
1,500 Bessemer, June, July	$13.35
1,000 B., June, July	13.30
1,000 B, prompt	13.40
1,000 Gray Forge	12.20
750 B., City Furnace	13.40
750 B., July	13.35
500 B., August	13.40
500 Grey Forge	12.10
500 Grey Forge	12.15
300 Grey Forge	12.25
200 No. 1 Foundry	14.00
200 No. 2 F	13.00
200 Grey Forge, Aug.	12.10
150 No. 1 F	14.00
150 No. 1 S	15.75
100 No. 2 S	14.75
100 Off B	13.00
Charcoal.	
100 No. 2 F	18.65
100 C. B	25.00
75 C. B	26.00
75 W. B	19.40
50 C. B., extra	30.00
Muck Bar.	
300 N	23.00
300 N	22 80
250 N	22.75

Billets and Slabs.	
1,000 B., July, at mill	21.85
500 B., Im'e, at mill	21.75
500 B, July, at mill	21.75
300 B., July, at mill	21.70
300 B., Spot, at mill	21.65
250 B., June, at mill	21.75
Skelp Iron.	
150 S. Iron	$1.62½ 4 m.
150 W. G	1.42½ 4 m.
100 N. G	1.42½ 4 m.
Steel Skelp.	
180 W. G	$1.40 4 m.
Blooms, Billets and Bar Ends.	
900 B. & B. E	$14.75
200 B. E	14.50
Sheet Bars.	
100 S. B., at mill	27.75
Ferro-Manganese.	
180 80% delivered	58.50
Scrap Material.	
250 cut pipe and tank, net	12.25
100 car wheels, gross	12.00
100 steel scrap, gross	13.00
50 leaf steel, gross	20.50

Cartagena. June 20.

(Special Report of Barrington & Holt.)

The South of Spain iron ore market continues in the same unsatisfactory condition; tonnage is still very rare and rates are only a trifle easier than they were a fortnight back. The prices of ore at mines and on wharf remain unchanged. A few orders for Portman ore have been booked for United Kingdom, and Germany is making purchases of loose cargoes. Exporters have always looked on America as the best market for their ore, but so far this year there is practically no ore going that way.

Rates of freight paid during June have been: Cartagena to Middlesboro, 8s. 3d.; to Rotterdam, 8s. 9d., to Barrow, 8s. 3d.; to Glasgow, 6s. 9d.

Quotations for July are as follows, per ton f. o. b. at Cartagena or Portman: 50% iron, 0·05% phosphorus, 5s. 6d.@6s.; 50% iron, 0·03% phosphorus, 6s.@6s. 6d.; Campanil Sud, 48% iron, 0 01 phosphorus, 6s. 6d.@7s.; No. 1 manganiferous, 25% iron, 20% manganese, 0·03 phosphorus, 12s. 6d.; B manganiferous, 25% iron, 17% mangenese, 0·03 phosphorus, 9s.@9s. 6d.; No. 2 manganiferous, 30 to 35% iron, 13 to 15% manganese, 0·03% phosphorus, 8s. 6d.; low grade, 45% iron, 6% manganese, 0·03% phosphorus, 6s.

Iron pyrites, 40% iron, for forward delivery, are quoted at 11s. Manganese ore for forward delivery, guaranteed 35% manganese, 10d. per unit.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, June 30.

PRODUCTION OF COKE on line of Pennsylvania R. R. for the week ending June 24th, 1893, and year from January 1st, in tons of 2,000 lbs.: Week, 85,670 tons; year, 2,636,768 tons; to corresponding date in 1892, 2,705,236 tons.

Statement of shipments of anthracite coal (approximated) for week ending June 24th, 1893, compared with the corresponding period last year:

	June 24, 1893. Tons.	June 25, 1892. Tons.	Difference.
Wyoming region	516,822	535,267	Dec. 18 445
Lehigh region	150,972	127,261	Inc. 23,711
Schuylkill region	254 819	239,754	Inc. 15,0 5
Totals	922,613	902,282	Inc. 20,331
Total for year to date	20,147,579	18,630,941	Inc. 1,516,638

PRODUCTION OF BITUMINOUS COAL for week ending June 24th and year from January 1st:

Shipped East and North:	1893. Week.	1893. Year.	1892. Year.
Phila. & Erie R. R.	1,181	45,309	43,383
Cumberland, Md.	80,728	1,930,413	1,724,535
Barclay, Pa.	897	30,219	98,649
Broad Top, Pa.	8,905	345.872	284,837
Clearfield, Pa.	70,687	2,071.767	1,861,314
Allegheny, Pa.	22,344	637,596	595.352
Beach Creek, Pa.	25,721	790,195	1,227.932
Pocahontas Flat Top	47.897	1,413.646	1,100,845
Kanawha, W. Va.	46,138	1,512,782	1,181,411
Total	381,498	8,778,100	8,111,258

Shipped West:	1893. Week.	1893. Year.	1892 Year.
Pittsburg, Pa.	23,609	635,555	631,979
Westmoreland, Pa.	37,840	997.170	791,306
Monongahela, Pa.	23,281	367,100	275,999
Totals	84,730	1,999,825	1,698,284
Grand totals	389,228	10,777,925	9,812,542

Anthracite.

During the past week the anthracite coal trade has been as quiet as it always is at this season of the year. Whatever deliveries are making are on May orders and at May prices. In this respect the market offers no change from the conditions outlined in this column last week.

The one important event was the meeting of the sales agents on Tuesday last. It was decided to advance prices for July, as foretold by us in our last report. Tidewater prices were advanced 15 cents on egg and 20 cents on stove and chestnut, and Western prices 25 cents on all sizes. It was recommended that the output be restricted to 3,000,000 tons. In connection with the latter "recommendation," we learn that steps have already been taken by some of the companies to curtail the production.

It is very doubtful whether the decision of the sales agents was judicious, although we are told that it was unanimous and that the meeting was characterized by great harmony. The arguments of some of the agents amount practically to this: We have already mined nearly 1,500,000 tons more than in the same period last year, and there are no large stocks either in consumers' yards or at the mines. The indications are that the market will take more coal in 1893 than it did in 1892. Since there was considerable talk of the probability of the Reading being obliged to sell some of its coal at auction, and also of a lack of agreements between the companies. It was proper and desirable, according to the agents, that such talk should be disposed of definitely, and that the consumer should learn once for all that no break was expected.

Notwithstanding these brave statements it is certain that the present financial condition of the country is not favorable for an advance in prices, and no advance should have been pronosed; it will certainly bring down public opposition, which, in the end, will find an effective way of controlling offending combinations and trusts.

Consumers and dealers are not all in a position to stock up at this time to protect themselves against the possibility of higher prices later on. Thus far we have not heard of business of any consequence having been done at June prices.

It is supposed that the new advance will render it possible for June prices to obtain more readily, but the country at large needs lower values in all the necessities, and it does not appear at all improbable that the consumption of anthracite will be affected by the financial conditions referred to above. The reports of the auction sales of Reading coal were too absurd to be credited by any one who knows anything about the coal trade or about the business relation of the Reading Company and the Finance Company. Actual selling prices are 15@20c. below the official schedule, which is as follows:

	Broken.	Egg.	Stove.	Chestnut.
Hard white ash	$4 00	$4.10	$4.40	$4 40
Free white ash	3.90	4.00	4.40	4.40
Shamokin	...	4.35	4.60	4.40
Schuylkill R. A.	....	4.35	4.75	4.55
Lykens Valley	5.00	4 65	6.00	5.25

Pea, $2 50@$2.75; No. 1 Buckwheat, $1.75@$2; No. 2 Buckwheat, $1.50.

The following are points from President Harris' testimony before the Master: The Coal and Iron accounts, amounting to $10,000,000, are pledged to the Finance Company for loans aggregating $3,500,000, and the company owes $1,750,000 for coal purchased from individual producers. It was necessary to keep about 1,250,000 tons of coal on hand. It was profitable to buy coal from individual concerns.

President Harris has returned to Philadelphia from a visit to the Reading Coal and Iron Company's mines. He is quoted as expressing himself greatly pleased with the company's arrangements for getting out a large quantity of coal this season. The business will certainly be pushed and an improved tone prevails all through the coal department.

The Reading Railroad system reports that its coal shipment (estimated) for last week, ending June 24th, was 470,000 tons, of which 38,000 tons were sent to Port Richmond and 50,000 tons were sent to New York waters.

The statement of the Philadelphia & Reading Coal & Iron Company for the month of May, 1893, shows that the gross receipts were $3,669,347, against $3,541,537 for the same month of 1892. The gross expenses were $3,802,070 for May, 1893, against $3,521,272 for May, 1892. For the year, from December 1st to June 1st, the gross receipts were $21,233,316 for this year, against $12,134,241 last year. The gross expenses during the same time were $21,438,513 and $12,098,808 for 1893 and 1892, respectively. The loss for the half year has therefore been $200,097.

Bituminous.

There is but little change to report of the bituminous trade. If anything, there have been a few more orders in the market. Contracts generally have already been closed, with the exception of some of the New England railroads, of which mention has already been made in these columns. These Eastern roads usually contract for their coal in May, but this year they have not done so as yet. All along they have held off for lower prices, in expectation of a reduction in the through rates, which would enable producers to name lower prices. The main line through roads have, however, adhered to their determination to maintain rates, and no concessions have been made by them. Unless these coal-carrying lines make some "allowances," producers declare that they cannot shade the prices which prevail just now. They state that they had rather reduce their output than reduce their prices, especially in connection with the New England railroad contracts where there is no margin.

The transportation on roads to tidewater has improved somewhat and coal is reaching the shipping ports with a little more dispatch. The car supply to the shippers is good. There are a few more light draught vessels, although by no means sufficient to meet the demand for such vessels for the shoal water Eastern ports. Generally speaking, vessels are in better supply; indeed, a small fleet arrived at the lower ports and freight rates have accordingly dropped from 5 to 10c. We quote ocean freight rates as follows this week: From Philadelphia to Boston, Salem and Portland, 75c.; Sound ports, 70c.; Wareham, $1. From Baltimore, Norfolk and Newport News rates are 10c. above Philadelphia.

The coal trade will hear with much regret of the death of George P. Bangs, of the well known firm of Bangs & Horton, Boston, Mass. After an illness of many months he died of pneumonia at his residence, in Boston, on Wednesday last. For a long time the firm, of which he was the senior member, has handled amounts of both anthracite and bituminous coal, and stood in the front rank of New England dealers. For many years it was the agent of the Lehigh & Wilkes-Barre Coal Company and of the Maryland Coal Company. Few men had a wider circle of business friends and acquaintances than had Mr. Bangs, and he will long be remembered as a man of energy, tact, honor and geniality.

Boston.

(From our Special Correspondent.)

The recent advances made by the companies were considerable of a surprise to the Boston trade. The companies evidently must feel quite secure when they can advance prices on stove and chestnut 20c. and egg 15c. That broken coal should remain unchanged is easy to understand. This variety of coal comes into competition with soft steam coal so much that it would restrict its sale if made higher, and as it is there is not much of it moving. Broken coal is especially quiet now, as the iron industry is in a very unsatisfactory condition.

We quote, f. o. b. prices net at New York: Stove, $4.60; egg, $4.15; free broken, $3.90; chestnut, $4.60;—Lykens Valley (at Philadelphia. broken, $4.75; egg, $5.40; stove. $5.75; chestnut, $5.

Trade in soft coal is of very limited proportions. With lower freight rates we get lower prices on coal continually. Cumberland can be had on cars here for $3.65; New River and Pocahontas, $3.55, and Clearfield, $3.35

Freight rates are lower and still tend downward. They are: From New York, 65@70c: from Philadelphia and Baltimore, 85c.; from Newport News and Norfolk, 75@80c.; to Sound points, 70@75c.

In a retail way trade is very quiet. Prices are firmly maintained, however, owing to the recent advances by the companies. Retailers will not feel the advance much, as they will be most apt to wait until the middle or latter part of July before buying coal, as then freight rates will be low, if ever.

We quote: Stove, $6.25; nut, $6.25; egg, $6.00; furnace. $5.75, Franklin, $7.50; Lehigh egg, $6.25; Lehigh furnace, $6.00; soft coal, $4.25.

Buffalo. June 29.

(From our Special Correspondent.)

The anthracite coal trade is very quiet and prices unchanged. Orders few and far between. There is a good shipping business by lake to the West and Northwest and freight rates are without variation.

Bituminous coal fairly active at steady figures for propellers, tugs and manufacturers' use. Supply adequate to demand.

On Saturday next, it is understood, that quotations of anthracite coal in the market will be advanced 25c. per ton both at wholesale and retail.

The shipments of coal by lake westward from Buffalo for the week ending June 24th were 100,435 net tons, distributed as follows: 46,700 tons to Chicago, 8,460 to Milwaukee, 15,750 to Duluth, 6,300 to Superior, 3,600 to Toledo, 700 to Sheboygan, 3,600 to Gladstone, 865 to Bay City, 2,000 to Fort William, 2,700 to Marquette, 600 Detroit, 675 to Hancock, 700 to Port Huron, 60 to Pequaming, 416 to Mackinaw, 500 to Portage, 2,650 to Saginaw, 1,000 to Manitowoc, 659 (soft) to Hamilton and 2,500 to Racine. The rates of freight were: 50c. to Chicago, 45c. to Milwaukee, 40c. to St. Clair, Saginaw and Port Huron; 55c. to Manitowoc and Racine; 50@55c. to Sheboygan, 65c. to Mackinaw and 30c. to Duluth, Superior, Washburn, Fort William, Ashland, Gladstone, Toledo and Bay City; closing steady.

The price of gas for lighting purposes in our city will be reduced on Saturday next. The rate was $1.20 per 1,000 cu. ft. net; from July 1st the charge will be $1.20, with 20% off if paid within 10 days from the close of the month, virtually giving our citizens dollar gas, as promised some weeks since.

The Buffalo Natural Gas Fuel Company will supply the fuel for our gas works for the current year. The Board of Public Works will try bituminous coal next year if it can be done without causing the smoke nuisance. One of the aldermen considers that $30,000 could be saved by the change. It is now claimed that the natural gas for the works saves the city $8,000 a year when compared with the cost of anthracite coal. Plans and specifications are to be drawn up and submitted providing for the change from natural gas to bituminous coal.

The Shawmut Coal Company's property in Elk County, Pa., will change hands soon. Messrs. Brinker & Jones, of Buffalo, have sold their mortgage on the concern to Mr. Andrew Kant and Mr. J. K. P. Hall. Mr. Burt E. Cartwright, of this city, will continue his interests and several new branch lines are to be built after the re-organization to accommodate the expected increase in the output.

Chicago. June 29.

(From our Special Correspondent.)

The advices of an advance in this market of 25c. per ton on anthracite to take effect July 1st creates a feeling of general surprise and from the developments of the past month it would seem to be simply an attempt to stiffen a weak market and enable the shippers to obtain this month's circular for coal. The writer knows that many city and country dealers have had a guarantee of protection for July and August at May circular, and it is said that the only effect of the new advance will be to compel retail dealers and the small country trade to pay it, while the larger and more responsible dealers will withhold their orders, feeling assured they can do fully as well later in the season.

City trade is dull and the publication in the newspapers of the recent bids for public institutions seems to have made consumers reluctant to place their orders. Not only they, but others, are quietly awaiting an expected break in the market.

Bituminous coal is dull in all grades. In commercial coal there is nothing doing. There is a fair volume of business being done in the recognized steam coals, which are being sold and contracted for at better prices than the previous year. The closing down of rolling mills, iron furnaces, factories, etc., make a rather discouraging outlook for this season's business and it would seem to be a wiser policy for many of the coal mines to close down their plants for the ensuing two or three months rather than to attempt to force a market at the present time. Some notably large contracts have been taken by operators here this week at good advances over last year's prices, and from the well known shortage of bituminous coal in the Upper Lake region it seems that a conservative policy for the next 90 days will enable all operators to dispose of their coal from the open of fall trade.

Coke is very quiet, as nearly all foundries are short of work. The closing down of so many large plants during the heated term will also shut off a considerable tonnage. Some inquiry is already noted for domestic sizes of crushed Connellsville coke, the recognized substitute for anthracite.

Quotations are: $4.65 furnace; $5.05 foundry, crushed; $5.40 Connellsville; West Virginia: $3.90 furnace, $4.10 foundry; New River Foundry, $4.65; Walston: $4.65 furnace, $5 foundry.

Circular prices are at the following rates: Lehigh lump, $6.25; large egg, $5.85; small egg, range and chestnut, $6 10. Retail prices per ton are: Large egg, $7.25; small egg, range and chestnut, $7.25.

Pittsburg. June 29.

(From our Special Correspondent.)

Coal.—The low water in the Ohio River continues; of course there was no coal shipments. The Pittsburgh harbor and the lower landings are now stocked with coal, with towboats plenty to convey the same to the lower markets. The June rise has failed so far; we may expect one in July. The Davis Island dam continues to furnish over 6 ft. of water, thus enabling to bring coal from the pools to be ready for the first rise. A purchase of 3,000 acres of coal lands in the vicinity of Landing on the Monongahela has just been consummated; average price, $35 per acre. Four mines have been located, and in the near future that section will be the scene of activity.

Connellsville Coke.—Prices remains as follows, per ton of 2.000 lbs. f. o. b. at ovens: Furnace coke, $1.75: foundry coke, $2.15. Delivered at Pittsburg: Furnace, $2.45; foundry, $2.85. Freights from Connellsville to Pittsburg 70c. per ton.

The trade at present is in a very restless condition, over 250 ovens were blown out and production has dropped about 6,172 tons. Demand continues very light and prices are wavering. The dependence of coke upon iron trade is well shown by the present condition of affairs.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, June 30.

Heavy Chemicals.—There is absolutely nothing new to report of the heavy chemical market this week. Dullness reigns supreme and there is no sign of a speedy improvement. Carbonated soda ash and alkali are without any activity; we hear of some offers at very low prices, but in most cases they are re-sale lots offered by consumers who cannot afford to carry much stock at this particular time. The glass men are idle and no business in these chemicals need be looked for, for some weeks at least. Caustic soda is quiet, although we hear of a more active demand from those buyers who are contracted for. New business in all the chemicals is very small.

Statistics prove that the shipments of heavy chemicals from Liverpool for May, 1893, show a decrease when compared with May, 1892. The following figures show the shipments for that month of 1893 and 1892, respectively: Caustic soda, 1,242 tons, against 1,802 tons; carbonated soda ash, 7,001 tons, against 6,211 tons (an increase); salt cake, 1,346 tons, against 1,781 tons; sal soda, 663 tons, against 356 tons; bleaching powder, 3,370 tons, against 3,993 tons. Prices are nominally quoted as follows: Caustic soda, 60%, 2·95@3·10c.; 70%, 2·70@2·80c.; 74%, 2·72½@2·82½c.; 76%, 2·80@2·90c. Carbonated soda ash, 48%, 1·25@1·30c.; 58%, 1·20@1·25c. Alkali, 48%, 1·20@1·30c.; 58%, 1·20@1·25c., according to package. Sal soda: English, on the spot, 1c.; American ·95@1c.; bleaching powder, 2·25@2·37½c. In special cases, carbonated soda ash and alkali will sell below the above figures.

Acids.—Despite the difficulty of making collections brought about by the tight money market and the financial depression which prevails in many quarters, the acid maket continues in a fairly good condition. The volume of business doing just now is satisfactory, when the season of the year is considered. There is no change in prices to report this week, and we quote: Acid, per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acetic, $1.87½@$2, according to quality; muriatic, 18°, 90c.@$1.10; 20°, $1@$1.25; 22°, $1.10@$1.35; nitric, 40°, $4; 42°, $4.50@$4.75; sulphuric, 80c.@$1.10; mixed acids, according to mixture; oxalic, $6.30@$6.50. Blue vitriol is quoted all the way from $3.50 to $3.75; glycerine for nitro-glycerine, 11½@12½c., according to quality and quantity.

Brimstone.—This market continues very quiet and devoid of features of interest. There are no stocks on the spot. Quotations for shipments are: $19.25 for best unmixed seconds and $18.25 for thirds.

Fertilizing Chemicals.—Great dullness prevails just now in the fertilizer market. The effects of the financial stringency are being felt by traders, and there has been little, if any, inclination on the part of manufacturers to purchase supplies at this time. Prices are slightly lower than last week, but there are no great stocks on hand. However, there is no demand and even at lower prices no business of consequence need be expected. The outlook for this business, of which long credits are a prominent feature, is not promising. We quote this week: Dried blood, $2.30@$2.35 per unit for high grade, and $2.20@$2.25 for low grade; azotine, $2.35@$2.40; sulphate of ammonia, $3.15 for gas liquor; bone liquor is offering at $3.10. Concentrated phosphate (30% available phosphoric acid), 75c. per unit. Acidulated fish scrap, no stocks on hand; dried scrap is quoted at $27.50 f. o. b. fish factory. The fish catch thus far has been very light. Tankage, high grade, $27@$29; low grade, $26@$28. Bone tankage, $24@$25; bone meal, $24@$25.50.

The price of double manure salts as fixed by the syndicate is as follows: New York and Boston, $1.12; Philadelphia, $1.14½; Charleston and Savannah, $1.17 cwt., basis 48@50%, in 50 ton lots on foreign weights and analyses. Sulphate of potash, 90%-96%, basis 90%: New York and Boston, $2.07; Philadelphia, $2.09½; Charleston and Savannah, $2.127, sulphate of potash, 96-99%, basis 90%, is 4% higher.

Phosphates.—Quotations for high grade land rock, f. o. b. Charleston, are $4.50@$4.75. Freights are $2.25.

Muriate of Potash.—Arrivals during the past week aggregate 400 tons at the various ports. There is no new business of consequence to report. The market is very quiet. The prices fixed by the syndicate for 1893 are as follows: New York or Boston, $1.78; Philadelphia, $1.80½; Southern ports, $1.83.

Kainit.—Practically nothing is doing in kainit. Quotations for shipments previous to September are as follows: New York, Philadelphia and Boston, $8.75 for foreign, invoice weight and test, and $9 for actual weight; Charleston, Savannah and Wilmington, $9.50 for invoice weight and test, and $9.75 for actual weight. Shipments after September 1st, 25c. higher.

Nitrate of Soda.—The nitrate market is stronger and prices have stiffened somewhat, owing to an increased European demand. Quotations are: $1.70@$1.75 for goods on the spot and $1.82½@$1.85 for futures, with no business to report in the latter.

Liverpool. June 15.

(Special Correspondence of Jos. P. Brunner & Co.)

There is no improvement to report in the condition of heavy chemicals and the monotonous cry of dull trade is still the general complaint. Soda ash is in retail demand and quotations are quite unreliable, varying considerably, according to export market, quantity, quality, etc. For Leblanc makes the nominal spot range is about as follows: Caustic ash, 48%, £4 10s.@£5 per ton; 57-58%, £5 10s.@£5 15s. per ton; carb. ash, 48%, £4 15s.@£5 per ton; 58%, £5 5s.@£5 15s. per ton, net cash; ammonia ash, 58%, is slow at £4 7s. 6d.@£4 15s. per ton, less 2½%; according to brand. Soda crystals are not active, but prices remain steady at £2 17s. 6d.@£3 per ton, less 5%. Caustic soda is slow to move and the position is weak. Quotations vary considerably, according to destination, and nominal range may be quoted about as follows: 60%, £8@£9 per ton; 70%, £9@£10 per ton; 74%, £10@£11 per ton; 76%, £11 10s.@£12 per ton, net cash. For parcels under 10 tons, 5s. per ton extra is charged. Bleaching powder is firm at £8 10s.@£8 15s. per ton, net cash, for hardwood packages. Should cholera reports from the continent become more alarming an upward movement in bleach would soon take place. Chlorate of potash remains in a very dull position, and buyers hold aloof. We quote: Prompt, 8⅜@8½d. per lb.; July, 8¼d., possibly 8⅛d.; July-December, 7½@7¾d.; all less 5%. For delivery over all 1894 the syndicate quotes 7d. for the U. S. market, although prepared to accept 6¾d. for other markets. Bicarb. soda is in moderate request at £6 15s. per ton, less 2½% for one cwt. kegs, with usual allowances for larger packages. Sulphate of ammonia is in the same strong position as lately reported and still continues, and buyers find great difficulty in supplying their requirements. On the spot nearest values are about £13@£13 5s. per ton, less 2½% for good grey, 24-25%, in double bags f. o. b. here. Nitrate of soda is inactive and quotations range from £8 15s. per ton for low quality up to £9 5s. per ton for best white, both in double bags, less 2½% f. o. b. here. Carb. ammonia: lump, 3d. per lb.; powdered, 3¼d. per lb.; net cash.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure .... .17@.19
Commercial, in bbls. and cbys. .. .01¾@.02
Carbonic, liquefied, ⅌ ℔ .... .18@.25
Chromic, chem pure, ⅌ ℔ 1.00
for batteries .... .40
Hydrobromic, dilute, U. S. P. ... 25@.30
Hydrocyanic, U. S. P. .... 4(@.50
Hydrofluoric .... 2(@.30
Alcohol—95%, ⅌ gall .... $2.30@$2.40
Absolute $3.80
Ammoniated $2.80
Alum—Lump. ⅌ cwt .... $1.75@$1.85
Ground, ⅌ cwt .... $1.85@$1.90
Powdered, ⅌ ℔ .... .04½@.05
Lump ⅌ ton, Liverpool £5
Aluminum Chloride—Pure, ⅌ ℔. $1.25
Amalgamating solution, ⅌ ℔ .... .60
Sulphate, ⅌ cwt .... $1.90@$2.50
Ammonia—Sal., in bbl. lots. ⅌ ℔ .... .07½@.08
Carbonate, ⅌ ℔., English and German, .07½@.08
Muriate, white, in bbls., ⅌ ℔ .... .08½
Aqua Ammonia—(in cbys) 3° ⅌ ℔. .03@.04
20°, ⅌ ℔ .... .04@.05
26°, ⅌ ℔ .... 04¾@.05
Antimony—Oxymur, ⅌ ℔ .... .04@.06
Regulus, ⅌ ℔ .... .10@.11½
Argols—Red, powdered, ⅌ lb .... .15
Arsenic—White, powdered ⅌ ℔. .03@.03¾
Red ⅌ ℔ .... .065@.07
Yellow .... .08@.09
White at Plymouth, ⅌ ton £12 2 6
Asbestos—Canadian, ⅌ ton .... $50@$300
Italian, ⅌ ton, c. i. f. L'pool .... £18@£60
Ashes—Pot, 1st sorts, ⅌ ℔ .... 4.75@5
Pearl .... .05¾@.06½
Asphaltum—
Prime Cuban, ⅌ ℔ .... .04@.05
Hard Cuban, ⅌ ton .... $28.00@$30.00
Trinidad, refined, ⅌ ton ... $30.00@$35.00
Egyptian and Syrian, ⅌ ℔ .... .05@.07½
Californian, at mine, ⅌ ton $12.00@$26.00
at San Francisco, ⅌ ton. $15.00@$29.00
Barium—Carbonate, pure, ⅌ ℔ .... .45
Carbonate, commercial, ⅌ ℔ .... .05@.10
Chlorate, crystal, ⅌ ℔ .... .75
Chloride, commercial, ⅌ ℔ .... .05@.10
pure, ⅌ ℔ .... .16
Iodide, ⅌ oz .... .40
Nitrate, ⅌ ℔ .... .06½@.07
Sulph., Am. prime white, ⅌ ton $17.50@$19
Sulph., foreign, floated, ⅌ ton .... $21@$24
Sulph., off color, ⅌ ton .... $11.50@$15.00
Carb., lump, f. o. b. L'pool, ⅌ ton £8
No. 1, Casks, Runcorn, " " £4 10 0
No. 2, bags, Runcorn, " " £3 15 0
Bauxite—⅌ ton $10.00
Bichromate of Potash—Scotch, ⅌ ℔ .... .11@.12
American, ⅌ ℔ .... .11@.12
Bichromate of Soda—⅌ ℔ .... .09½@.10
Borax—Refined, ⅌ ℔., in car lots .08@.09
San Francisco .... .08@.08½
Concentrated, in car lots .... .07½@.08
Refined. Liverpool ⅌ ton £22

Bromine—⅌ ℔ .... .25@.35
Cadmium Minion—⅌ lb $2.00
Cadmium Iodide—⅌ lb $5.50
Chalk—⅌ ton .... $1.50@$2.25
Precipitated, ⅌ ℔ .... .04@.06
China Clay—English, ⅌ ton .. $13@$18.00
Domestic, ⅌ ton .... $9@$11
Chlorine Water—⅌ ℔ .... .10
Chrome Yellow—⅌ ℔ .... .10@.25
Chrome Iron Ore—⅌ ton, San Francisco $10.00
Chromalum—Pure, ⅌ lb .... .35@.40
Commercial, ⅌ lb .... .02½
Cobalt—Oxide, ⅌ ℔ .... $1.60@$1.70
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ordinary, ⅌ ℔. 03¼@.03¾
" extra .... .04½
Nitrate, ⅌ ℔ .... .40
Copperas—Common, ⅌ 100 lbs .. .85@.95
Best, ⅌ 100 lbs .... $1.35@$1.50
Liverpool, ⅌ ton, in casks .... £2@£2 10s.
Corundum—Powdered, ⅌ ℔ .. .04½@.09
Flour, ⅌ lb 03
Cryolite—Pow., ⅌ ℔., bbl. lots .... .07@.08
Emery—Grain, ⅌ ℔. (⅌ kg.) .... .04½@.05
Flour ⅌ ℔ .... .02½@.04
Epsom Salt—⅌ ℔ .... .01@.01½
Feldspar—Ground, ⅌ ton .. $6.00@$10.00
Crude .... $2.00@$3.00
Fluorspar—Powdrd, No.1, ⅌ ton. $20@$30
Lump, at mine .... $6@$8
French Chalk—
Fuller's Earth—Lump, ⅌ ton. $16@$20
Glauber's Salt—in bbls., ⅌ ℔ ... .01@.01¼
Glass—Ground, ⅌ ℔ .... .09@.10
Gold—Chloride, pure, crystals, ⅌ oz. $12.00
pure, 15 gr., c. v., ⅌ doz. $5.40
liquid, 15 gr., g. s. v., ⅌ doz $5.50
Chloride and sodium, ⅌ oz $6.00
15 gr., c. v., ⅌ doz. $2.75
Oxide, ⅌ oz $27.25
Gypsum—Calcined, ⅌ bbl ... $1.25@$1.50
Land Plaster ....
Iodine—Resublimed, ⅌ oz .... .30@.33
Iridium—Oxide ⅌ ℔ $90
Iron—Nitrate, 40°, ⅌ ℔ .... .01@.01½
47°, ⅌ ℔ .... .02@.02½
Kaolin—*See China Clay.*
Kieserite—⅌ ton .... $9@$10
Lead—Red, American, ⅌ ℔ ... .06¾@.07½
White, American, in oil, ⅌ ℔. .06½@.07½
White, English, ⅌ ℔., in oil .. .08½@.08¾
Acetate, or sugar of, white .... .06@.06½
Granulated ....
Nitrate .... .09@.12
Lime Acetate—Am. Brown .... .90@.95
" Gray. $1.75@$1.87½
Litharge—Powdered, ⅌ ℔ .. .05½@.07½
English flake, ⅌ ℔ .... .06@.09½
Magnesite—Crude, ⅌ ton of 1,015 kilos $14.75
Calcined, ⅌ ton of 2,240 lbs $22.00
Brick, ⅌ ton of 2,240 lbs $47.50
Manganese—Ore, per unit .... .23@.28
Oxide, ground, ⅌ ℔ .... .02½@.06½
Mercuric Chloride—(*Corrosive Sublimate*) ⅌ ℔ .... .62@.64
Powdered, ⅌ ℔ 5

Marble Dust—⅌ bbl .... $1.25@$1.50
Metallic Paint—Brown ⅌ ton. $20@$25
Red .... $20@$25
Mineral Wool—Ordinary slag ... .01½
Ordinary rock .... .02½
Ground, ⅌ ton ....
Mica—In sheets according to size.
1st quality, ⅌ ℔ .... .25@$6.00
Naphtha—Black ....
Nitre Cake—⅌ ton $10.00
Ochre—Rochelle, ⅌ ℔ .... .01¼@.01¾
Washed Nat Oxf'rd, Lump, ⅌ ℔. .06½@.06¾
Washed Nat Oxf'rd, Powder, ⅌ ℔. .07@.07½
Golden, ⅌ ℔ .... .03@.05
Domestic, ⅌ ton .... $12@$20
Oils, Mineral—
Cylinder, light filtered, ⅌ gal ... .14@.16
Dark filtered, ⅌ gal .... .10@.13
Extra cold test, ⅌ gal. .20@.24
Dark steam refined, ⅌ gal., .07½@.12
Phosphorus—⅌ ℔ .... .5 @.55
Precip., red, ⅌ ℔ .... .80@.85
white, ⅌ ℔ .... .85@.90
Platinic Chloride—Dry, ⅌ oz $7
Plumbago—Ceylon, ⅌ ℔ .... .04@.0[illegible]
American, ⅌ ℔ .... .05@.0[illegible]
Potassium—Cyanide, ⅌ lb., C. P. .52
67%, ⅌ ℔ .. 0
mining ... .28@ 3
Bromide, domestic, ⅌ lb .... .28@.32
Chlorate, English, ⅌ lb .... .18@.18¼
Chlorate, powdered, English, ⅌ ℔. .18½@.19
Carbonate, ⅌ lb., by casks, 82% .04½@.05
Caustic, ⅌ lb., pure stick ..... .05½@.06
Iodide, ⅌ ℔ .... $2.58@$2.80
Nitrate, refined, ⅌ lb .... .06@.0[illegible]
Bichromate, ⅌ lb .... .10@.11¼
Yellow Prussiate, ⅌ ℔ .... .21½@.22½
Red Prussiate, ⅌ ℔ .... [illegible]
Pumice Stone—Select lumps, ⅌ ℔ .03½@.15
Original cks., ⅌ ℔ .... .01½@.05
Powdered, pure, ⅌ ℔ .... .01½@.01¾
Pyrites—Non-cupreous, p. units. .12@.1[illegible]
Quartz—Ground, ⅌ ton .... $6.00@$10.00
Rotten Stone, Powdered, ⅌ ℔. .03¼@.03½
Lump, ⅌ ℔ .... .06@.07
Original cks, ⅌ ℔ .... .04½@.05½
Rubbing stone, ⅌ ℔ .... .03½@.04
Sal Ammoniac—lump, in bbls., ⅌ ℔. .80½
Salt—Liverpool, ground, ⅌ sack ... .70
Domestic, fine, ⅌ ton .... $7@$7.[illegible]
Common, fine, ⅌ ton .... $4.50@$[illegible]
Turk's Island, ⅌ bush .... .26@.2[illegible]
Salt Cake—⅌ ton .... $10.00@$15.00
Saltpeter—Crude, ⅌ ℔ .... .03½@.04
Soapstone—Ground, ⅌ ton ...... $6@$8
Block and slab according to size.
Sodium—Prussiate, ⅌ ℔ .... .22@.24
Phosphate, ⅌ ℔ .... .04@.05
Stannate, ⅌ ℔ .... .06@.12
Tungstate, ⅌ ℔ .... .30@.35
Hyposulphite, ⅌ cwt., in casks $1.70@$1.80
Strontium—Nitrate, ⅌ ℔ .... .08½@.0[illegible]
Sulphur—Roll, ⅌ ℔ .... .01½@.0[illegible]¾
Flour ⅌ ℔ .... .01¾@.02
Sylvinit, 27@35%, S.O.P., per unit, 3.75

Talc—Ground French, ⅌ ℔ .... .01¼@.01½
American No. 1, ⅌ ℔ .... .01¼@.01½
American No 2 .... .006
Terra Alba—French, ⅌ ℔ .... .65@.80
English, ⅌ ℔ .... .65@.80
American, No. 1, ⅌ ℔ .... .60@.80
American, No. 2, ⅌ ℔ .... .40@.60
Tin—Crystals, in kegs or bbls .... .14@.15
feathered or flossed. .20
Muriate, single .... .07@.12
Double or strong, 54° B .... .10@.15
Oxymur, or nitro .... .19
Vermilion—Imp. English, ⅌ ℔ .... .80
Am. quicksilver, bulk .... .57 @.59
Am. quicksilver, bags .... .58 @.60
Chinese .... .85 @$1.00
Trieste .... .90 @.95
American .... .11½@.12
Zinc White—Am., Dry, ⅌ ℔ .... .04½@.05
Antwerp, Red Seal, ⅌ ℔ .... .06¼@.07
Paris, Red Seal, ⅌ ℔ .... .07⅝@.08
Muriate solution .... .06
Sulphate crystals, in bbls., ⅌ ℔. .03@.03¾

THE RARER METALS.

Aluminum—⅌ lb .... .80@.85
Arsenic—(Metallic), per lb .... .40
Barium—(Metallic), per gram $4.00
Bismuth—(Metallic), per lb $2.00
Cadmium—(Metallic), per lb. $1@$1.50
Calcium—(Metallic), per gram $10.00
Cerium—(Metallic), per gram $7.50
Chromium—(Metallic), per gram. $1.00
Cobalt—(Metallic), per lb $6.00
Didymium—(Metallic), per gram. $9.00
Erbium—(Metallic), per gram $7.50
Gallium—(Metallic), per gram ... $140.00
Glucinum—(Metallic), per gram .. $12.00
Indium—(Metallic), per gram $9.00
Iridium—(Fused), per oz $12.00
Lanthanum—(Metallic), per gr .. $10.00
Lithium—(Metallic), per gram $10.00
Magnesium—(Powdered), per lb. $4.00
Manganese—(Metallic), per lb $1.10
Chem. pure, per oz. $10.00
Molybdenum—(Metallic), per gm .50
Niobium—(Metallic), per gram ... $5.00
Osmium—(Metallic), per oz $65.00
Palladium—(Metallic), per oz $20.00
Platinum—(Plate), per oz $9.75
Potassium—(Metallic), per lb $28.00
Rhodium—(Metallic), per gram .. $5.00
Ruthenium—(Metallic), per gm .. $5.50
Rubidium—(Metallic), per gram. $2.00
Selenium—(Metallic), per oz $1.80
Sodium—(Metallic), per lb .... .50@.75
Strontium—(Metallic), per gm .... .60
Tantalium—(Metallic), per gram. $9.00
Telurium—(Metallic), per lb $5.00
Thallium—(Metallic), per gram .. .20
Titanium—(Metallic), per gram .. $2.2[illegible]
Thorium—(Metallic), per gram ... $17.00
Tungsten—(Metallic), per lb 8
Uranium—(Oxide), per lb $5.00
Metallic, per gm .... [illegible]
Vanadium—(Metallic), per gm .. $[illegible]
Yttrium—(Metallic), per gram ..... $[illegible].00
Zirconium—(Metallic) per oz $6.00

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	June 24. H.	June 24. L.	June 26. H.	June 26. L.	June 27. H.	June 27. L.	June 28. H.	June 28. L.	June 29. H.	June 29. L.	June 30. H.	June 30. L.	SALES.
Adams, Colo.													
Alice, Mont.													
Amador, Cal.													
Atlantic, Mich.													
Belcher, Nev.													
Belle Isle, Nev.													
Bodie Cons., Cal.													
Bos. & Mont., Mont													
Breece, Colo.													
Bulwer, Cal.													
Caledonia, S. Dak.													
Catalpa, Colo.													
Chrysolite, Colo.													
Colorado Central, Colo.													
Commonwealth, Nev.													
Comstock T. bonds, Nev.													
" scrip., Nev.													
Cons. Cal. & Va., Nev.			1.85						.65				200
Crown Point, Nev.													
Deadwood, Dak.													
Enterprise													
Eureka, Cons., Nev.													
Father de Smet, Dak.													
Freeland, Colo.													
Gould & Curry, Nev.													
Grand Prize, Nev.													
Hale & Norcross, Nev.													
Homestake, Dak.													
Horn-Silver, Utah							2.50		2.25		2.50	2.00	600
Independence, Nev.													
Iron Hill, Dak.													
Iron Silver, Colo.													
Leadville Cons., Colo.	.15		.16		.15		.15	.14	.15				3,200
Little Chief, Colo.													
Martin White, Nev.													
Moulton, Mont.													
Mt. Diablo, Nev.													
Navajo, Nev.													
N. Belle Isle, Nev.													
Ontario, Utah					12.50	12.00	12.50	10.00	7.00		9.00		540
Ophir, Nev.													
Overman, Nev.													
Plymouth, Cal.													
Quicksilver, Pref., Cal.													
" Com., Cal.													
Quincy, Mich.													
Robinson Cons., Colo.													
Savage, Nev.													
Sierra Nevada, Nev.													
Silver Cord, Colo.													
Silver King, Ariz.													
Silver Min. of L. Valley													
Small Hopes, Colo.									.30				3,000
Standard Cons., Cal.			1.45								1.30		210
Yellow Jacket, Nev.													

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	June 24. H.	June 24. L.	June 26. H.	June 26. L.	June 27. H.	June 27. L.	June 28. H.	June 28. L.	June 29. H.	June 29. L.	June 30. H.	June 30. L.	SALES.
Alpha., Nev.													
Alta, Nev.													
American Flag, Colo.					.02								600
Andes, Cal.													
Astoria, Cal.													
Augusta, Ga.													
" bonds.													
Barcelona, Nev.													
Belmont, Cal.													
Best & Belcher, Nev.													
Bonanza King, Cal.													
Brunswick, Cal.	.05												500
Bullion, Nev.													
Butte & Bost., Mont.													
Castle Creek, Idaho.													
Chollar													
Comstock T., Nev.	.07		.07										1,500
Con. Imperial, Nev.													
Con. Pacific, Cal.													
Crescent, Colo.													
Del Monte, Nev.													
El Cristo, Rep. of Col.													
Emmett, Colo													
Exchequer, Nev.													
Independence, Nev.													
Julia, Nev.													
Justice, Nev													
King & Pembroke													
Lacrosse, Colo.	.04		.04		.05						.04		1,900
Lee Basin, Colo.													
Mexican, Nev.			1.10										100
Minnesota Iron													
Monitor, Colo.													
Monte Cristo, Rep. of C.													
Nevada Queen, Nev.													
N. Standard, Cal.													
N. Commonwealth, Nev.													
Occidental, Nev.													
Oriental & Miller, Nev.													
Phœnix Lead, Colo.													
Phœnix of Ariz.													
Potosi, Nev.													
Rappahannock, Va.													
S. Sebastian, S. Sal.													
Santiago.													
Scorpion, Nev.													
Seg. Belcher, Nev.													
Shoshone, Idaho.													
Silver Hill, Nev.													
Sullivan Con., Dak.													
Sutro Tunnel, Nev.													
Syndicate, Cal.													
Tornado Con., Nev.													
Union Cons., Nev.													
Utah, Nev.													

*Ex-dividend. †Dealt in at New York Stock Ex. Unlisted securities. ‡Assessment paid. §Assessment unpaid. Dividend shares sold, 7,750. Non-dividend shares sold, 4,000. Total shares sold, 11,750.

BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	June 23.	June 24.	June 26.	June 27.	June 28.	June 29.	SALES.
Atlantic, Mich.				7.50		7.00	150
Bodie, Cal.							
Bonanza Development.							
Bost. & Mont., Mont.	21.75	21.25	21.00	21.00	20.50	20.75	20.38	20.25	19.75	20.50	18.00	2,469
Breece, Colo.							
Calumet & Hecla, Mich.			289½	287½		289½	285	289½		280		110
Catalpa, Colo.							
Central, Mich.							
Coeur d'Alene, Id.							
Con. Cal. & Va., Nev.							
Dunkin, Colo.							
Eureka, Nev.							
Franklin, Mich.			10.50	10.50		10.00		10.00		10.50		213
Honorine, Utah.							
Horn Silver, Utah.							
Kearsarge, Mich.				6.50	6.25	6.25		6.25	6.00	6.50	6.00	290
Lake Superior, Iron.							
Little Pittsburg, Colo.							
Minnesota Iron, Minn.							
Napa, Cal.							
Ontario, Utah.							
Osceola, Mich.	27.00		26.50		26.50	27.00		27.00	26.50	26.50	25.00	890
Quincy, Mich.	105		105			105						29
Ridge, Mich.							
Sierra Nevada, Nev.							
Silver King, Ariz.							
Stormont, Utah.							
Tamarack, Mich.	141		143	141	142	139		141	138	138	137	293
Tecumseh, Mich.							

NAME OF COMPANY.	June 23.	June 24.	June 26.	June 27.	June 28.	June 29.	SALES.
Allouez, Mich.					.40					360
Arnold, Mich.										
Aztec, Mich.										
Brunswick, Cal.										
Butte & Boston, Mont.	7.50	7.25	7.00		6.75	6.50	7.00		6.50	6.25	6.00	1,730
Centennial, Mich.	5.50	5.25					5.00	4.75	4.00	3.75	2.50	1,970
Colchis, N. Mex.												
Copper Falls, Mich.												
Crescent, Colo.												
Dana, Mich.												
Don Enrique, Mex.												
Geyser, Colo.												
Hanover, Mich.												
Humboldt, Mich.												
Hungarian, Mich.												
Huron, Mich.												
Mesnard, Mich.												
National, Mich.												
Native, Mich.												
Oriental & M., Nev.												
Phœnix, Ariz.												
Pontiac, Mich.												
Rappahannock, Va.												
Santa Fe, N. Mex.												
Shoshone, Idaho.												
South Side, Mich.												
Tamarack, Jr., Mich.									14.00			15
Washington, Mich.												
Wolverine, Mich.												

Dividend shares sold, 4,444. Non-dividend shares sold, 4,175. Total shares sold, 8,619.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied.	Assessments. Date and amount of last	Dividends. Total paid.	Dividends. Date & amount of last.
1	Adams, s. L. C.	Colo.	$1,500,000	1,500,000	$10	*		$637,500	Jan., 1892 .05
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25	*		1,500,000	April 1893 .25
3	Alice, s.	Mont.	10,000,000	400,000	25	*		975,000	Nov., 1891 .06¼
4	Alma & Nel Wood., g	Idaho	300,000	30,000	10	*		60,000	Jan: 1889 .50
5	Amador, g.	Cal.	1,250,000	250,000	5	*		31,250	Aug., 1890 .12½
6	American, g.	Colo.	3,000,000	300,000	10	*		225,000	Mar., 1892 .05
7	American Belle, s. g. c	Colo.	2,000,000	400,000	5	*		50,000	April 1891 .12½
8	Americ'n & Nettie, g. s	Colo.		300,000				175,000	Mar., 1892 .05
9	Atlantic, c.	Mich.	1,000,000	40,000	25	280,000	April 1875 $1.00	700,000	Feb., 1891 1.00
10	Argenta, s.	Nev.	10,000,000	100,000	100	335,000	July. 1889 .10	40,000	Feb., 1890 .20
11	Argyle, g.	Colo.	1,000,000	1,000,000	1	*		20,000	Mar., 1892 .01
12	Aspen Mg. & S., s. L.	Colo.	2,000,000	200,000	10	*		780,000	June 1893 .10
13	Aurora, I.	Mich.	2,500,000	100,000	25	*		650,000	Feb., 1893 2.00
14	Badger, s	Ont.	250,000	50,000	5	*		37,500	Mar. 1890 .25
15	Bald Butte	Mont	250,000	250,000	1	*		72,500	Mar., 1892 .03
16	Bates Hunter, s. g.	Colo.	1,000,000	1,000,000	1	*			Dec., 1891 .00¾
17	Belle Isle, s.	Nev.	10,000,000	100,000	100	220.00	Aug. 1892 .10	300,000	Dec., 1879 .25
18	Belcher, s. g.	Nev.	10,400,000	104,000	100	3,16.000	May 1892 .25	15,397,000	April 1876 1.00
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	1.000	Dec., 1889 .25	200,000	Jan., 1890 .10
20	Best Friend	Colo.	1,000,000	1,000,000	1	*		90,000	Feb., 1892 .01
21	Bi-Metallic, s. g.	Mont.	5,000,000	200,000	25	*		2,300,000	April 1893 .20
22	Bodie Con., g. l.	Cal.	10,000,000	100,000	100	550,000	June 1890 .25	1,602,572	April 1885 .50
23	Boston & Mont., g.	Mont.	2,500,000	250,000	10	*		520,000	June 1886 .15
24	Boston & Mont., c. s.	Mont.	3,125,000	125,000	25	*		2,075,000	Nov., 1891 1.00
25	Brooklyn Lead, L. s.	Utah.	500,000	50,000	10	*		127,000	July. 1887 .05
26	Brotherton, I.	Mich.	2,000,000	80,000	25	*		120,000	Mar., 1893 .50
27	Bulwer, g.	Cal.	10,000,000	100,000	10	130,000	Aug., 1889 .25	191,000	Oct., 1892 .05¾
28	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	*		150,000	Oct., 1888 .06
29	Caledonia, g.	Dak.	10,000,000	100,000	100	505,000	May. 1885 .15	192,000	Oct., 1890 .08¾
30	Calliope, s.	Colo.	1,000,000	1,000,000		*		140,000	Jan., 1891 .00
31	Calumet & Hecla c	Mich.	2,500,000	100,000	25	1,200,000		39,350,000	May. 1893 5 00
32	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	*		675,000	June 1893 .50
33	Central, c.	Mich.	500,000	20,000	25	100,000	Oct., 1861 .65	1,970,000	Feb., 1891 1.00
34	Champion, g	Cali.	340,000	34,000	10	*		132,900	May., 1893 .10
35	Chrysolite, s. L.	Colo.	10,000,000	200,000	50	*		1,650,000	Dec., 1884 .25
36	Clay County, g.	Colo.	200,000	200,000	1	*		56,000	Nov., 1891 .02
37	Clinton Con, g.	Cal.	5,000,000	100,000	5	*		90,000	Nov., 1891 .10
38	Coeur D'Alene, s. L.	Idaho	5,000,000	500,000	10	*		310,000	Nov., 1891 .02
39	Colorado Central, s. L.	Colo.	2,750,000	275,000	10	*		530,000	April 1893 .05
40	Commonwealth, s.	Nev.	10,000,000	100,000	100	190,000	Sept. 1892 .10	30,000	Nov., 1890 .20
41	Confidence, s. L.	Nev.	2,496,000	24,960	100	1,589,550	Aug., 1892 .50	199,680	April 1889 1.00
42	Cons. Cal. & Va., s. g	Nev.	21,600,000	216,000	100	108,000	Jan., 1885 .20	3,682,800	Aug. 1891 .50
43	Contention, s.	Ariz.	12,500,000	250,000	50	*		2,637,500	Aug. 1892 .20
44	Cook's Peak, s.	N. M.	2,000,000	200,000	10	*		114,532	Nov. 1892 .05
45	Cop. Queen Con., c.	Ariz.	2,000,000	200,000	10	*		1,460,000	May. 1893 .50
46	Coptis	Nev.	10,000,000	100,000	100	*		67,000	July. 1892 .12
47	Cortez, s.	Nev.	1,500,000	300,000	05	*		687,000	Mar., 1892 .50
48	Crescent, s. L. g.	Utah.	5,000,000	600,000	25	60,000	Oct., 1892 .10	238,000	Oct., 1888 .03
49	Crown Point, g. s.	Nev.	0,000,000	100,000	1 00	2,700,000	Sept. 1892 .25	11,898,000	Jan., 1875 2.00
50	Chamberland, L. s.	Mont.	5,000,000	500,000	10	*		15,000	Nov., 1889 .03
51	Daly, s. L.	Utah.	3,000,000	150,000	20	*		2,800,000	June 1893 .25
52	Deer Creek, s. g.	Idaho	2,000,000	200,000	5	*		20,000	June 1889 .05
53	Deadwood-Terra, g.	Dak.	5,000,000	200,000	25	*		1,150,000	Oct., 1892 .05
54	DeLamar, s. g.	Idaho	4,000,000	400,000	5	*		800,000	April 1893 .37½

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied.	Assessments. Date and am't of last.
1	Alliance, s. g.	Utah.	$100,000	100,000	$1	$126,000	Feb., 1891 .20
2	Allouez, c.	Mich.	2,000,000	80,000	25	737,000	Jan., 1890 .70
3	Alpha Con., g. s.	Nev.	3,000,000	30,000	100	209,100	Sept. 1892 .10
4	Alta, s.	Nev.	10,080,000	100,800	100	3,369,880	Jan, 1892 .10
5	American. c.	Idaho	5,000,000	500,000	100		
6	American Flag, s.	Colo.	1,250,000	125,000	1	300,000	June 1887
7	Amity, s.	Colo.	250,000	250,000	20		
8	Anchor, s. L. g.	Utah.	3,000,000	150,000	5	410,000	June 1890 .20
9	Anglo-Montana, Lt.	Mont.	600,000	120,000	125		
10	Appalachian, g.	N. C.	1,750,000	1,400,000	20		
11	Arizona, c.	Ariz.	3,575,000	160,000	2		
12	Astoria, s.	Cal.	200,000	100,000	5		
13	Atlanta, g. s.	Idaho	3,250,000	650,000	25		
14	Barcelona, g.	Nev.	5,000,000	200,000	5	*	
15	Bear Creek	Idaho	100,000	20,000	1		
16	Belmont, g.	Cal.	500,000	500,000	100	*	
17	Belmont, s.	Nev.	5,000,000	50,000	100	735,000	April 1886 .10
18	Best & Belcher, s. g.	Nev.	10,080,000	100,800	10	2,405,275	Aug., 1892 .35
19	Black Oak, g.	Cal.	3,000,000	300,000	100	*	
20	Boston Con., g.	Cal.	10,000,000	100,000	1	170,000	Nov., 1888 .25
21	Brownlow, g.	Colo.	250,000	250,000	5		
22	Brunswick, g.	Cal.	2,000,000	400,000	2		
23	Buckeye, s. L.	Mont.	1,000,000	500,000	100		
24	Bullion, s. g.	Nev.	10,000,000	100,000	100	2,890,000	Aug., 1892 .35
25	Burlington, g. s.	Cal.	10,000,000	100,000			
26	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10		
27	Butte Queen, g.	Cal.	1,000,000	100,000	1	6,000	Jan., 1892 .04
28	Calaveras, g.	Cal.	500,000	500,000	5		
29	Calaveras Con., g.	Cal.	800,000	160,000	10		
30	California, g.	Cal.	1,000,000	100,000	5	9,000	Mar., 1892 .03
31	California Con. L. Q.	Cal.	2,250,000	450,000	10		
32	Camille, g	Ga.	1,500,000	150,000	5		
33	Carisa, g.	Wy.	500,000	100,000	2	*	
34	Carupano, c. s. L. C.	Ven.	200,000	100,000	2	*	
35	Cashier, g. s.	Colo.	500,000	250,000	100	*	
36	Challenge Con., g. s.	Nev.	5,000,000	50,000	10		
37	Cherokee, g.	Cal.	1,500,000	150,000	100		
38	Chollar, s. g.	Nev.	11,200,000	112,000	2	1,820,000	May., 1892 .50
39	Cleveland, T.	Dak.	1,000,000	500,000	10	*	
40	Colchis, g. c.	N. M.	500,000	150,000	5		
41	Colorado, s.	Colo.	1,625,000	325,000	1		
42	Comstock, s.	Utah.	1,250,000	250,000	100		
43	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar., 1887 .15
44	Con. Imperial, c. s	Nev.	5,000,000	50,000	50	2,062,500	Jan., 1890 .25
45	Con. New York, s. g.	Nev.	5,000,000	100,000	100	110,000	Mar., 1892 .10
46	Con. Pacific, g.	Cal.	6,000,000	60,000	10	198,000	June 1890 .10
47	Con. Silver, s.	Mo.	2,500,000	250,000	5		
48	Cordova Union, g.	Cal.	1,000,000	200,000	10		
49	Crescent, s. L.	Colo.	3,000,000	300,000	100	*	
50	Crocker, s.	Ariz.	10,000,000	100,000	1	165,000	Aug. 1892 .05
51	Crowell, g.	N. C.	500,000	500,000	1		
52	Dahlonega, g.	Ga.	250,000	250,000	10	*	
53	Dandy, s.	Colo.	5,000,000	500,000			
54	Decatur s	Colo.	1,500,000	300,000			

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total Levied	Date and amount of last.			Dividends. Total paid.	Date & amount of last.		
55	Derbee B. Grav., G.	Cal..	10,000,00	100,000	0	100,000	Sept.	1892	.10	60,[illegible]	Aug..	1891	.10
56	Dexter, g. s.	Nev..	1,000,000	100,000	10					80,000	Aug..	1892	.25
57	Dunkin, s. L.	Colo..	5,000,000	200,000	25	*				390,000	Oct..	1889	.05
58	Elkhorn, s. L.	Mont.	1,000,000	200,000	5	*				1,038,670	June	1893	.37½
59	Enterprise, s.	Colo..	2,500,000	500,000	5					850,000	May.	1893	.05
60	Eureka Con., s. L.. G.	Nev...	1,000,000	50,000	100	550,000	June	1889	.50	5,017,500	Jan..	1892	.25
61	Evening Star, s. L.	Colo..	500,000	50,000	10	*				1,450,000	Dec.	1889	.2
62	Father de Smet, G.	Dak..	10,000,000	100,000	100	200,000	Nov..	1878	1.00	3,125,000	Dec..	1885	.20
63	Franklin, C..	Mich..	1,000,000	40,000	25	220,000	June	1871		1,100,000	July	1892	2.00
64	Freeland, s. G.	Colo..	5,000,000	200,000	25	*				190,000	July.	1886	.10
65	Garfield Lt., G. s.	Nev...	500,000	100,000	5					90,000	April	1888	.12½
66	Glengarry	Mont.	1,000,000	100,000	10					10,000	June	1891	.10
67	Gold Rock	Colo..	500,000	500,000	1						Dec..	1891	.01
68	Golden Reward	S.Dak	1,250,000	250,000	5					85,000	April	1893	.02
69	Gould & Curry, s. G..	Nev...	10,800,000	108,000	100	4,591,200	June	1892	.25	3,826,800	Oct..	1870	10.00
70	Grand Prize, s.	Nev...	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar.	1884	.25
71	Granite, s. L.	Idaho	500,000	500,000	1	*				83,400	Nov..	1890	.02
72	Granite Mountain, s.	Mont.	10,000,000	400,000	25					12,120,000	July.	1892	.20
73	Great Western, L. Q..	Cal...	5,000,000	50,000	100					444,861	May.	1893	.25
74	Green Mountain, G..	Cal...	1,250,000	125,000	10	*				212,000	Nov.	1881	.07½
75	Hale & Norcross, G. s.	Nev...	11,200,000	112,000	100	5,534,800	Aug.	1892	.50	1,822,000	Aug.	1888	.50
76	Hecla Con., s. G. L. C.	Mont.	1,500,000	90,000	50					1,980,000	Apr.	1893	.50
77	Hel'a Mg. & Red, s.L.G.	Mont.	3,315,000	663,000	5	*				197,970	July.	1886	.06
78	Helena & Frisco, s.L.	Idaho	2,500,000	500,000	5					170,000	July.	891	.02
79	Helena & Victor	Mont.	1,000,000	200,000	5					80,000	May.	1892	.05
80	***Holmes, s.	Nev...	10,000,000	100,000	100	370,000	May.	1890	.25	75,000	Apr.	1886	.25
81	Homestake, G.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,003,750	June	1893	.10
82	Honorine, s. L.	Utah.	500,000	250,000	2	37,500	April	1889	.05	125,000	Sep.	1887	.05
83	Hope, s.	Mont.	1,000,000	100,000	10	*				458,252	May	1893	.25
84	Horn-Silver, s. L.	Utah.	10,000,000	400,000	25	*				4,700,000	Mar.	1893	.12½
85	Hubert, G.	Colo..	1,000,000	1,000,000	1	*				247,000	Dec.	1889	.00½
86	Idaho, G.	Cal...	310,000	3,100	100					5,450,250	April	1893	2.50
87	Illinois, s.	N. M..	100,000	100,000	1	*				45,000	April	1889	.20
88	Iron Hill, s.	Dak..	2,500,000	250,000	10	184,000	July.	1889	.03	156,250	Nov..	1887	.07½
89	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*				230,000	June	1893	.03
90	Iron-Silver, s. L.	Colo..	10,000,000	500,000	20	*				2,500,000	April	1889	.20
91	Jack Rabbit, G.	Cal...	10,000,000	100,000	100	100,000	Sept.	1892	.10	260,000	Aug.	1891	.10
92	Jackson, G. s.	Nev..	5,000,000	50,000	100	237,500	Nov..	1880	.20	60,000	Jan.	1891	.10
93	Kearsarge, C.	Mich..	1,000,000	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan.	1890	2.00
94	Kennedy	Cal...	10,000,000	100,000	100					387,000	May..	1892	.15
95	Kentuck, s. G.	Nev..	3,000,000	30,000	100	454,180	Oct.	1891	.15	1,350,000	Dec.	1886	.10
96	La Plata, s. L.	Colo..	2,000,000	200,000	10	*				610,000	Sept.	1882	.30
97	Leadville Con., s. L.	Colo..	4,000,000	400,000	10	*				316,500	Feb..	1892	.03
98	Lexington, G. s.	Mont.	4,000,000	40,000	100	*				609,000	Jan..	1890	2.00
99	Little Chief, s. L.	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
100	Little Rule, s.	Colo..	500,000	500,000	1					220,000	Dec...	1891	.02
101	Maid of Erin	Colo..	3,000,000	600,000	5					708,900	April	1893	.25
102	Mammoth, s. L. C.	Utah.	10,000,000	400,000	250	110,000		1882	.25	1,040,000	Dec...	1891	.10
103	Martin White, s.	Nev.	10,000,000	100,000	100	1,275,000	Jan..	1892	.25	140,000	Dec..	1886	.25
104	Mary Murphy, s. G.	Colo.	350,000	3,500	101	*				175,000	May..	1888	5.00
105	Matchless, s. L.	Colo.	500,000	500,000	1	*				15,000	Feb...	1890	.00½
106	Maxfield	Utah	3,000,000	300,000	10					117,000	April	1892	.03
107	Mayflower, D. gravel	Cal...	1,000,000	100,000	10					140,000	May.	1893	.10
108	May Mazeppa, s. L.	Colo..	1,000,000	100,000	1					205,000	Oct..	1891	.03¾
109	Minas Prietas, G. s.	Mex..	1,000,000	100,000	10	*				350,000	Dec...	1890	.50
110	Minnesota, C.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar.	1876	
111	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5					3,600,000	June.	1893	15
112	Monitor, G.	S.Dak	2,500,000	250,000	10					45,000	Oct..	1890	.03
113	Mono, G.	Cal..	5,000,000	50,000	100	760,000	Sept.	1890	.25	12,500	Mar..	1886	.25
114	Montana, Lt., G. s.	Mont.	3,300,000	660,000	5	*				2,619,075	June.	1891	12½
115	Morning Star, s. L.	Colo..	1,000,000	100,000	10					925,000	April	1891	.25
116	Morning Star Drift, G	Cal...	240,000	2,400	100					140,600	April	1893	3.00
117	Moulton, s. G.	Mont.	2,000,000	400,000	5	*				410,000	Nov.	1892	.07½
118	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	210,000	July.	1891	.20
119	Napa, Q.	Cal..	700,000	100,000	7					580,000	July.	1893	.20
120	Navajo, G. s.	Nev..	10,000,000	100,000	100	520,000	May.	1891	20	229,950	April	1889	.10
121	Newton	Cal...	10,000,000	100,000	100					10,000	May..	1891	.05
122	New California, G.	Colo..	800,000	160,000	5	*				48,800	May..	1890	.12½
123	New Guston, s.	Colo..	550,000	110,000	5					1,877,500	April	1892	.75
124	North Banner Con.	Cal...	1,000,000	100,000	10					20,000	July..	1891	.05
125	North Commonw'th	Nev..	10,000,000	100,000	10					25,000	June.	1891	.25
126	N. Hoover Hill, G. s.	N. C.	300,000	120,000	2½	*				30,000	Dec..	1885	.06½
127	North Belle Isle, s.	Nev..	10,000,000	100,000	100	474,689	Nov.	1892	.10	230,000	May.	1888	.50
128	North Star, G.	Cal..	1,000,000	100,000	10					450,000	June	1893	.50
129	Omaha Cons., G.	Cal...	2,400,000	24,000	100					30,000	May..	1892	.15
130	Ontario, s. L.	Utah	15,000,000	150,000	100					13,175,000	Oct..	1892	.50
131	Ophir, G. s.	Nev..	10,000,000	100,000	100	4,210,640	April	1890	.50	1,593,800	Jan..	1880	1.00
132	Original, s. O.	Mont.	1,500,000	60,000	25	*				138,000	Jan..	1889	.05
133	Oro, s. L. G.	Colo..	500,000	100,000	5					95,000	July,	1890	.20
134	Osceola, C.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,747,500	May.	1893	1.00
135	Pacific Coast, B.	Cal...	1,500,000	15,000	100					360,000	Dec.	1892	1.00
136	Parrot, C.	Mont.	1,800,000	180,000	10					1,748,000	April	1893	.10
137	Petro	Utah.	10,000,000	10,000	100					17,500	July	1891	.75
138	Plumas Eureka, G.	Cal...	1,406,250	140,625	10					2,669,926	April	1893	.19
139	Plymouth Con., G.	Cal...	5,000,000	100,000	50	*				2,280,000	Feb.	1888	.40
140	Poorman, G. s.	Idaho	375,000	300,000	125	*				68,260	Sept	1892	
141	Quicksilver, pref., Q.	Cal...	4,300,000	43,000	100					1,823,911	June	1891	1.25
142	" com., Q	Cal...	5,700,000	57,000	100					643,867	July.	1882	.40
143	Quincy, C.	Mich..	1,250,000	50,000	25	200,000	Dec..	1862		6,470,000	Feb.	1893	3.00
144	Red Cloud	Idaho	1,000,000	200,000	5					153,000	Dec.	1892	.10
145	Reed National, s. G..	Colo..	500,000	500,000	1	*				50,000	Dec..	1890	.01
146	Retriever, L.	S.Dak	1,250,000	250,000	5					20,000	Aug..	1891	.03
147	Rialto, G.	Colo..	300,000	300,000	1	*				50,250	April	1892	.01½
148	Richmond, s. L.	Nev..	1,350,000	54,000	25	*				4,346,3[illegible]	Aug..	1891	.25
159	Rico-Aspen	Colo..	5,000,000	1,000,000	5					25,000	May.	1893	.02½
150	Ridge, C.	Mich..	500,000	20,000	25	219,939	Mar.	1886	50	99,785	Feb..	1880	.50
15	Robinson Con., s. L..	Colo..	10,000,000	200,000	50	*				585,000	Mar.	1886	.05
152	Running Lode, G.	Colo..	1,000,000	1,000,000	1	*				36,000	May.	1892	00 1-10
153	Savage, s.	Nev..	11,200,000	112,000	100	6,772,000	Feb..	1892	.50	4,460,000	June	1869	3.00
54	Sheridan, s. G.	Colo..	300,000	3,000	100	*				300,000	Oct..	1891	2.50
55	Shoshone, G.	Idaho	150,000	150,000	1					7,500	April	1888	.01
156	Sierra Buttes, G.	Cal...	2,225,000	122,500	10					1,544,620	April	1893	.12½
157	Sierra Nevada, s. G.	Nev..	10,000,000	100,000	100	6,411,910	June	1892	.25	102,000	Jan..	1871	1.00
158	Sierra Nevada, s. L.	Idaho	1,000,000	1,000,000	1	*				40,000	May..	1889	.02
159	Silent Friend	Colo..	500,000	500,000	1					60,000	Aug..	1891	.02½
16	Silver Cord, s. L. G.	Colo..	4,500,000	450,000	10					265,000	April	1889	.10
161	Silver King, s.	Ariz..	10,000,000	100,000	100	130,000	Nov.	1890	.30	1,950,000	July	1887	.25
162	Silver Mg. of L.V., s.L.	N. M..	500,000	500,000	1					300,000	Dec..	1891	4.05
153	Slide	Colo..	500,000	5,000	100					20,000	Nov..	1891	4.00
164	Small Hopes Con., s.	Colo..	5,000,000	250,000	20	*				32,00,000	Nov..	1892	.15
165	Spring Valley, G.	Cal..	200,000	200,000	1	50,000	Oct.	1886	.25	50,000	Jan..	1881	.25
166	Standard, G. s.	Cal...	10,000,000	100,000	100	100,000	June	'89	.50	3,665,000	July.	1893	.10
167	Stormont, s.	Utah.	500,000	500,000	1	*				155,000	Nov.	1881	.05
178	St. Joseph, L.	Mo..	1,500,000	150,000	10	*				1,974,000	Dec..	1890	.02
169	Swansea, g. s.	Colo..	600,000	60,000	10					27,000	Mar.	1893	.10
170	Tamarack, C.	Mich..	1,250,000	50,000	25	520,000	April	1885	3.00	3,160,000	Oct..	1892	.00
171	Teal & Poe	N. M..	150,000	150,000	1					9,000	Nov.	1891	.01½
172	Tombstone, G. s. L.	Ariz..	12,500,000	500,000	25	*				1,250,000	April	1882	.10
173	Trinity Riv'r Hydr., G	Colo..	500,000	500,000	1	*				10,000	May.	1893	.00½
174	United Verde, C.	Ariz..	3,000,000	300,000	10	*				207,500	Jan..	1892	.10
175	Victor, G.	Colo..	1,000,000	200,000	5					40,000	June	1893	.05
176	Viola Lt., s. L.	Idaho	750,000	150,000	5					337,500	Nov.	1888	.37½
177	Ward Con., s.	Colo.	2,000,000	200,000	10					20,000	Dec.	1889	.05
178	Woodside, s. L.	Utah	100,000	100,000	10					25,000	Oct..	1889	.25
179	W. Y. O. D.	Cal..	30,0,00	15,000	2	22,500	May.	1891	.10	54,000	April	1893	.10
180	Yankee Girl, s.	Colo.	1,300,000	260,000	5					1,405,000	April	1891	1.50
181	Yellow Jacket, G. s.	Nev.	12,000,000	120,000	100	5,808,000	Sept.	1892	.25	2,184,000	Aug.	1871	1.50
182	Yosemite No. 2	Utah.	1,000,000	100,000	10					25,000	Oct..	1891	.05
183	Young America, G.	Cal...								175,000	Jan..	1889	1.00

NON DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Date and am't of last.		
55									
56	Denver City, s.	Colo..	5,000,000	500,00	11	*			
57	Denver Gold, G.	Colo..	300,000	60,000	5				
58	Dickens-Custer, s.	Idaho	2,100,000	420,000	5				
59	Durango, G.	Colo..	500,000	500,000	1	*			
60	Eastern Dev. Co., Lt	N. S..	1,500,000	150,000	10	990,000	Mar.	1886	1.00
61	El Dorado, G.	Cal...	1,000,000	250,000	4	*			
62	El Talento, G.	U.S.C.	1,000,000	500,000	2				
63	Emma, s.	Utah.	625,000	500,000	125				
64	Emmons, s. L.	Colo..	2,000,000	2,000,000	1				
65	Empire, s.	Utah.	10,000,000	100,000	100				
66	Eureka Tunnel, s. L.	Nev...	10,000,000	100,000	100	*			
67	Exchequer, s. G.	Nev...	10,000,000	100,000	100	940,000	Jan..	1892	.25
68	Found Treasure, G. s.	Nev...	10,000,000	100,000	100	130,500	Jan..	1892	.50
69	Gogebic I. Syn., I.	Wis..	5,600,000	200,000	25				
70	Gold Bank, g. s.	Colo.	250,000	250,000	1	*			
71	Gold Cup, s.	Colo..	500,000	500,000	1	*			
72	Golden Era, s.	Mont.	2,000,000	200,000	10	*			
73	Gold Flat, G.	Cal...	1,000,000	100,000	10	5,000	Mar.,	1892	.05
74	Gold King, g.	Colo..	1,650,000	350,000	5				
75	Gold Rock, G.	Cal...	1,000,000	500,000	2				
76	Golden Feather Co., g	Cal..	900,000	180,000	5				
77	Goodshaw, G.	Cal...	10,000,000	100,000	100	*			
78	Goodyear G. s. L.	Mont.	1,000,000	200,000	5	13,000	Feb..	1892	.01
79	Grand Belt, O.	Tex..	12,000,000	120,000	100				
80	Grand Canyon, s.	Ariz..	375,000	75,000	5				
81	Grand Duke, s.	Colo.	800,000	80,000	10				
82	Gregory Con., G.	Mont.	3,000,000	300,000	10				
83	Harlem M. & M. Co., G.	Cal...	1,000,000	200,000	5				
84	Hartery Con., G.	Cal...	1,000,000	100,000	10	22,000	Oct..	1890	.05
85	Hartshorn, g s. l.	S.Dak	1,250,000	250,000	5	8,750	Sept.	1891	.00½
86	Head Cent. & Tr., s. G	Ariz..	10,000,000	100,000	100	16,981	Mar..	1892	.03
87	Hector, G.	Cal...	1,500,000	300,000	5	45,000	Jan..	1889	.15
88	Highland, C.	Mich..	500,000	25,000	20				
89	Himalaya, g. s l.	Utah.	1,800,000	180,000	10	12,800	Oct..	1892	.00½
90	Holywood	Cal.	200,000	100,000	2				
91	Hortense, s.	Colo..	2,000,000	200,000	10				
92	Huron, C.	Mich..	1,000,000	40,000	25	280,000	May.	1887	3.00
93	Idaho, g. s.	Idaho	1,250,000	250,000	5				
94	Inez, s. L.	Idaho	1,000,000	1,000,000	1				
95	Ingalls, g.	Colo..	100,000	20,000	5				
96	Ironton, I.	Wis.	1,000,000	40,000	25				
97	Iroquois, C.	Mich..	1,250,000	50,000	25				
98	Kentuck Con.	Nev..	10,500,000	105,000	00	57,750	July.	1892	.10
99	J. D. Reymert, s.	Ariz.	10,000,000	100,000	100				
100	Julia Con., G. s.	Nev..	11,000,000	110,000	100	1,463,000	Jan..	1889	.10
101	Justice, g. s. c.	Colo.	500,000	500,000	1	*			
102	Lacrosse, G.	Colo..	1,000,000	100,000	10	*			
103	La Cumbre, g. s.	Mex..	150,000	3,000	50	*			
104	Lee Basin, s.	Colo..	5,000,000	500,000	10	*			
105	Little Josephine, s.	Colo..	250,000	50,000	5				
106	Lone Star Cons., G.	Cal...	500,000	500,000	1	10,000	April	1892	.00½
107	Lynx Creek, g.	Ariz..	287,500	147,500	5				
108	Madeleine, G. s. L.	Colo..	750,000	50,000	1	4,500	Feb.	1892	.00½
109	Mammoth Gold, G.	Ariz..	2,500,000	500,000	5	*			
110	Mayflower Gravel, G.	Cal...	1,000,000	100,000	10	*			
111	Medora, G.	Dak..	250,000	250,000	1	585,000	Mar.	1890	.56
112	Merrimac Con., G. s.	Colo..	5,000,000	500,000	10				
113	Mexican, G. s.	Nev...	10,000,000	100,000	100	2,917,560	ct..	1892	.50
114	Michigan, g s	Mich..	2,500,000	100,000	25	40,000	Mar..	1892	
115	Middle Bar, G.	Cal...	400,000	200,000	2	*			
116	Mike & Starr, s. O.	Colo..	1,000,000	200,000	5	*			
117	Milwaukee, s.	Mont.	500,000	500,000	1	*			
118	Minah Cons.	Mont.	1,250,000	250,000	5				
119	Modoc Chief, l. s. g.	Idaho	1,000,000	200,000	5	5,000	Jan..	1892	.00½
120	Monitor, G.	Colo..	100,000	100,000	1	12,500	May.	1891	.01
121	Montreal, G. s. L.	Utah.	750,000	150,000	5	4,500	Feb..	1892	.00½
122	Mountain Ledge, g.	Cal...	500,000	100,000	5				
123	Mount McClellan	Colo..	1,500,000	300,000	5				
124	Mutual Mg. & Sm.	W'sh.	100,000	100,000	1	*			
125	Native, C.	Mich..	1,000,000	40,000	25				
126	Neath, G.	Colo..	1,000,000	100,000	10				
127	Nelson	Cal...	50,000	10,000	5				
128	Nevada Queen, s.	Nev...	10,000,000	100,000	100	200,000	Oct..	1889	.25
129	New Germany, G.	N. S.	100,000	100,000	1	*			
130	New Gold Hill	N. C..	1,750,000	350,000	5				
131	New Pittsburg, s. L.	Colo..	2,000,000	200,000	10	*			
132	New Queen Gold, s.	Colo..	800,000	160,000	5				
133	North Standard, G.	Cal...	10,000,000	100,000	100	20,000	Nov.		
134	Occidental Con., g.s		10,000,000	100,000	100	245,000	April	1892	.25
135	Oneida Chief, G.	Cal...	500,000	125,000	100	*			
136	Oriental & Miller, s.	Nev...	10,000,000	400,000	100				
137	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
138	Osceola, G.	Nev...	5,000,000	500,000	10	*			
139	Overman, G. s.	Nev...	11,520,000	115,200	100	4,001,840	May.	1892	.10
140	Park, s.	Utah.	2,000,000	200,000	10				
141	Parker, g.	N. C..	750,000	180,000					
142	Pay Rock, s.	Colo..	1,000,000	200,000	5				
143	Peer, s.	Ariz..	10,000,000	100,000	100	190,000	Feb..	1892	.10
144	Peerless, s.	Ariz..	10,000,000	100,000	100	405,000	Oct...	1890	.15
145	Pennsylva'a Cons., O	Cal...	5,150,000	515,000	10	36,050	Feb..	1892	.10
146	Phœnix, g.	Ariz..	500,000	500,000	1	*			
147	Phœnix Lead, s. L.	Colo..	100,000	100,000	1	*			
148	Pilgrim, G.	Cal...	600,000	300,000	2	*			
149	**Pioche M.&R., s.G.L.	Utah.	20,000,000	2,000,000	10				
150	Poorman, Ltd., s. L.	Idaho	250,000	50,000	5				
151	Potosi, s.	Nev...	11,200,000	112,000	100	1,573,000	Mar..	1890	.50
152	Proustite, s.	Idaho	250,000	250,000	1	*			
153	Puritan, s. G.	Colo..	1,500,000	150,000	10	*			
154	Quincy, C.	Colo..	3,000,000	300,000	10				
155	Rainbow, g.	S.Dak	1,250,000	250,000	5	4,250	July.	1892	.00½
156	Rappahannock, G. s.	Va....	250,000	250,000	1	*			
157	Red Elephant, s.	Colo..	500,000	500,000	1	*			
158	Red Mountain, s.	Colo..	300,000	60,000	5				
159	Ropes, G. s.	Mich..	2,000,000	80,000	25	167,200	Feb.	1891	.50
160	Ruby & Dun., s. L. G.	Nev..	25,300	506	50	*			
161	Russell, G.	N. C..	1,500,000	300,000	5				
162	Sampson, G. s. L.	Utah.	10,000,000	100,000	100	288,15[illegible]	July	1888	1.08
163	Seal of Nevada, g.s..	Nev..	5,000,000	100,000	50				
164	Silver Age, s. l. g.	Colo..	2,000,000	200,000	10	*			
165	Silver Bell, s.	Ariz..	850,000	170,000	5				
166	Silver King, s.	Cal.	2,000,000	400,000	5				
167	Silver Queen, C.	Ariz..	5,000,000	200,000	25	*			
168	Silverton, s.	Colo..	300,000	60,000	5				
169	Siskiyou Con., L.	Cal...	2,000,000	200,000	10	13,000	May..	1892	.01½
170	South Bulwer, G.	Cal..	10,000,000	100,000	100	100,000	May.	1881	.25
171	South Hite, g.	Cal..	10,000,000	100,000	100	195,000	Jan..	1888	.05
172	South Pacific, g.	Cal..	500,000	100,000	5				
173	Stanislaus, G.	Cal..	2,000,000	200,000	10				
174	St. Kevin, s. G.	Colo.	100,000	100,000	1	*			
175	St. Louis & Mex., s..	Mex..	,000,000	500,000	10	*			
176	St. Louis & St. Elmo.	Colo.	000,000	200,000	10				
177	St. L. & St. Felipe, G.s.	Mex..	[illegible],000	150,000	10				
178	St. L. & Sonora, G. s..	Ariz..	3,000,000	300,000	10	*			
179	Stemwinder, l. s.	Idaho	500,000	500,000	1				
180	Sunday Lake, I.	Mich..	1,250,000	50,000	25				
181	Sullivan Con., G.	Dak..	600,000	200,000	3	*			
182	Sylvanite, s.	Colo..	5,000,000	500,000	10	*			
183	Taylor-Plumas, G.	Cal...	325,000	65,000	5	3,575	Mar..	1892	.01½
184	Telegraph, g. s.	Cal...	325,000	65,000	5	3,575	Mar.	1892	.01½
185	Telegraph, G. s.	Mex..	100,000	100,000	1	70,000	Feb..	1892	.10
186	Teresa, G. s.	Cal...	1,000,000	200,000	5	10,000	Feb..	1888	.10
187	Tioga Con., G.	Nev...	10,000,000	100,000	10	295,000	May.	1888	.25
188	Tornado Con., G. s.	Nev...	100,000	100,000	1	*			
189	Tuscarora, s.	Nev...	10,000,000	500,000	20	385,000	Jan.	1892	.25
190	Union Con., G. s.	Nev...	10,000,000	100,000	100	370,000	June	1892	.25
191	Utah, s.	Nev..	10,000,000	100,000	100	245,000	Aug..	1890	.25
192	Ute & Ulay, s. L.	Colo..	1,000,000	500,000	2	1,500	Mar..	1892	.0018
193	Valley, g.	Cal...	575,000	460,000	125				
194	Wall Street, G. s. L.	Colo..	500,000	500,000	1				
195	Washington, C.	Mich..	1,000,000	40,000	5				
196	West Argentine, s.	Colo..	750,000	150,000	5				
197	West Granite Mt., s.	Mont.	500,000	100,000	5	*			
198	Whale, s.	Mont.	5,000,000	500,000	10	*			
199	Wood River, g.	Idaho	2,000,000	200,000	10	3,000	Aug.	1891	.00½
200	Yuma, C. s. G.	Ariz..	10,000,000	400,000	2				
120	Zelaya, G. s.	C. A.	600,000						

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. † This company, as the Western, up to December 10th, 1881, paid $1,400,000. ‡ Non-assessable for three years. § The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000. Previous to the consolidation in August, 1884, the California had paid $31,320,000 in dividends, and the Cons. Virginia $42,390,000. ** Previous to the consolidation of the Copper Queen with the Atlanta, August, 1885, the Copper Queen had paid $1,350,000 in dividends. ¶ This company paid $190,000 before the reorganization in 1880. ** This company acquired the property of the Raymond & Ely Company which had paid $3,075,000 in dividends. *** Previous to this company's acquiring Northern Belle, that mine declared $2,400,000 in dividends against $425,000 in assessments

COAL AND COAL RAILROAD STOCKS.

NAMES OF STOCKS.	June 24.		June 26.		June 27.		June 28.		June 29.		June 30		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am Coal													
Balt. & Ohio			74½	73⅛	73⅛		72½		72				1,239
do pref													
Buff., R. & P.			32		31¾		31⅛	31¼					400
do. pref													
Cambria Iron													
Ches. & Ohio	17	16	16⅛	15⅛	17⅛	16¼	17¾	17⅜	17	16	17⅛	16⅞	20,258
do. 1st pref													
do 2d pref													
Col. C. & I			14		12⅛		13	12			23¾		580
Col. Coal													
Colorado Fuel			40		41		39½	38½	37	36½	37		970
do. pref									80				1,455
Col., H. V. & Tol.	20⅛		19¾		20¼		19½		19¾	19	20⅛		19
do. pfd					62	60							668
Col. & H. Coal			8		8		8¼	8			8	7⅝	5,569
do. pfd													
Cons. Coal													
Del. & Hud. C.	121½		120¾	120	121⅛	120	119¾	119½	120¼	119	119⅞	119¼	43,671
Del., L. & West.	147	144¼	146¼	144¾	149⅜	144¾	148⅜	146½	146¼	144⅝	147½	144	
Hunt. & B. Top.							35½						160
do pref	50		50¼	50	50		50¼						382
Lake Erie & Wes	17½		16¾		16⅛		16½		16⅛	16			1,000
do. pref.			70	69	69¾				69⅞	69¾			1,210
Lehigh C. & N.	50¼	50	50¼	50	50	49¾	50		50				765
Lehigh Valley	41⅜	40⅜	41½	41	41	40¼	40⅞	39¾	40¼	39¾			18,436
Maryland Coal													
do. pref													
Morris & Essex			142										100
New Cent. Coal													
N. J. Central	105⅛	104⅞	105	104	104	103	104½	100	100	99⅞	103½	102	8,421
N. Y., L. & W.													
N. Y., L. E. & W	17⅝	17⅛	17⅜	16½	17⅜	16⅝	17⅛	16⅜	16¼	15⅝	16⅛	15⅞	18,611
do. pref					37		35		33				310
N. Y., Susq. & W	12⅛		12¼	12⅛	12⅛				12¼	12	12¾		1,315
do. pref													
N. & West	7												20
do. pref			23¾	23⅛	23	22¼	23¼						1,030
Penn. Coal	295	290											25
Penn. R. R	50⅜	50¼	50½	50⅛	50⅝	50¼	50⅝	50½	50¾	50½			5,790
Phil. & Reading	13½	13	14½	13⅜	13½	13¾	14¼	13⅞	14½	13⅞	14¾	14⅛	82,7 1
Tenn. C. & I.	15¾		15¼	15	15¼	13¼	13⅞	12⅞	13⅛	12	16¼	13¾	8,877
do. pref													
Wheel. & L. E.	14¾						14	13	13¼	12	13¾	12⅝	1,346
do. pref	49½	47½			5 ⅛		46½	44⅛	45¾	44½			1,092

Total shares sold, 221,626

INDUSTRIAL AND TRUST STOCKS.

NAME OF STOCKS.	June 24.		June 26.		June 27.		June 28.		June 29.		June 30.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Adams Express													
Am. Cotton Oil.	35½	35¼	35	33	35⅜	35	35¼	34¾	35	34½	35	33¾	9,290
do. pref.	69		68½	63	68½				68⅛	65⅛	68		597
Am. Dist. Tel							50						17
Am. Express			110		110		110	106					115
Am. Sugar Ref.	81¾	81	81	77½	82¼	77¾	81	78¼	78⅜	77⅝	84¼	78⅞	160,802
do. pref	81¾	81	80½	78	81⅝	78½	80	78	78	77			4,005
Edison E. Ill. Co.							105¼		105				155
Edison Gen El.	71	69¾	70¼	67	69⅜	65¼	69⅛	66⅝	69⅜	65⅛	70¼	68⅛	118,360
Nat. Cord. Co.	12	11½	11½	10¼	11	10¼	10½		10¼	9¾	10¼	9¾	9,847
do. pref	40		40½		40⅛	40	40	39					740
do. New													
Nat. Lead Co.	31¼	31	30⅞	30⅝	31⅝	30½	31	28⅛	29⅛	27	30	28⅜	21,165
do. pref	68		68		70		67¼		67	65⅛	66		2,286
Nat. Linseed Oil.	22½	22	22½		21¾		21¾	21	20⅝		20¾		1,500
So. Cotton Oil													
U. S. Express					55		51						20
U. S. Rubber	39½	38	38		38	37	37	36	34½				1,900
do. pref.	78	77	75		71½	70	74		75				1,219
Wells, Fargo Ex													
Western Union.	82⅞	82½	82¼	81½	83⅛	81⅝	82	79¾	81	79⅛	82¼	79⅝	71,676

Total sales, 406,684.

CALIFORNIA.

San Francisco.

NAMES OF STOCKS.	CLOSING QUOTATIONS.					
	June 23.	June 24	June 26.	June 27.	June 28.	June 29.
Alpha						
Alta	.20	.15	.10	.10	.10	.10
Belcher	.85	.90	.75	.60	.60	.50
Belle Isle						
B. & Belch	.80	.85	.80		.65	.50
Bodie	.20	20	.20	.15	.15	.10
Bulwer	.10	.10	.10	.10	. 0	.10
Chollar	.50	.50	.55	.50	.50	.50
Com'w'lth						
Con. C. & V.	1.60	1.70	1.70	1.55	1.55	1.45
Con. Pac.						
Crown Pt.	.45	.50	.45	.35	.65	.50
Del Monte						
E'rekaCon						
G'ld & C'y	.50	.65	.50	.35	.50	.45
Hale & N.	.40	.40	.45		.35	.30
M. White						
Mexican	.95	1.00	.95	.85		.70
Mono	.10	.10	..0	.10	.10	..0
Mt. Diablo						
Navajo						
Nev. Qu'n.		.05	.05	.05	.05	.05
N. B'lleisle						
N. Co'w'th						
Ophir	1.43	1.55	1.50	1.35	1.35	1.15
Potosi	1.30	1.35	1.35	1.20	1.05	.90
Savage	.40	.50	.45	.40	.45	.36
Sierra Nev	.70	.80	.75	.65	.60	.60
Uni'n Con	.60	.70	.45	.60	1.55	.60
Utah	.05					
Yel. Jack	1.25	1.25	1.15	1.05	1.10	.90

COLORADO.

Aspen. June 24.

	Bid.	Asked
Argentum Juniata	$0.69	$0.70
Aspen Contact	1.10	1.12
Aspen Deep Mining	.11	.11½
Best Friend	.07½	.08
Bi-Metallic	.07½	.08
Bushwacker	.14	.15
Delia S.	1.90	2.00
Gold Valley Placer	.20	.20
Little Annie	.07½	.08
Mollie Gibson	5.50	6.00
Pontiac	.09	.09½
Smuggler	35.00	38.00
St. Joe & Mineral Farm	.10½	.11
U. S. Paymaster	....	....

Colorado Springs. June 24.

	Bid.	Asked.
Anaconda Gold	.25	.26½
Calumet	.06½	.07
Cleopatra	.10	.12½
Fanny Rawlins	.07½	.08¼
Gold & Globe	...	.08½
Gold King	.06	.08
Isabella	.14½	.15
Jack Pot	...	.01½
Jeff Davis	.00¾	.01
Lemhi	...	1.12½
Matoa	...	.05½
Ophir	.04	.05
Orphan Bell	...	...
Pharmacist	.22½	.24¼
Summit M. & M.	...	.16
Work	.04	.04½
World	.03	.03¼

Denver.

Prices and sales for the week ending June 3d:

	High.	Low.	Sales.
Anaconda	$.30½	$ 30	3,500
Bangkok-Cora Belle	.04	04	100
Diamond B	.02¾	.02½	2,900
Gold Rock	.03½	.03½	100
Justice	.01½	.01½	3,700
Puzzler	.06½	.06½	200
Work	.04¼	.04	8,0.0
Total sales			18,500

Rico. June 3.

Atlantic Cable Cons. M. Co	$0.25
Atlantic Cable guaranteed	.70
Enterprise Mining Co	3.25
Iron Dollar Silver Mines Co	.25
Southern Cons. Treasury Stock	.15
Uncle Ned Co	.15

MARYLAND.

Baltimore. June 29.

COMPANY.	Bid.	Asked.
Balt. & N. C.	....	...
Corrad Hill	....	...
Cons. Coal	....	$0.31
Diamond Tunnel	....	.15
George's Creek Coal	....	1.10
Howard C. & C.	$1.10	....
Lake Chrome	....	....
Silver Valley	....	.12@.2

MINNESOTA.

Duluth. June 23.

LISTED STOCKS.	Par.	Bid.	Asked
Biwabik M. Iron Co	100	19.50	$20.00
Cincinnati Iron Co	25	.45	.50
Clark Iron Co	100	.50	.60
Cosmopolitan Iron Co		....	....
Great Northern Min. Co.	100	3.25	3.80
Kanawha Iron Co	100	.30	.50
Keystone Iron Co		....	.35
Lake Superior Iron Co	25	1.50	2.00
Lincoln Iron Co		.10	.25
Little Mesaba Iron Co	100	....	....
Mesaba Moun. Iron Co.	100	9.50	11 00
Minneapolis Iron Co	100	.10	.25
Mountain Iron Co	100	....	50.00
Shaw Iron Co	100	1.00	1.50
Security Land & Exp. Co.	10	15.00	24.00
Washington Iron Co	100	....	....
UNLISTED STOCKS.			
Adams Iron Co		6.00	11.00
Agate Copper Mining Co		....	.45
Allegheny Iron Co	10	....	....
Aurora Iron Co		....	....
Buckeye Iron Co	100	2.00	2.50
Buffalo Land & Exp. Co.		....	.80
Camden Iron Co		....	.25
Chandler Iron Co		....	50.00
Chicago Iron Co	100	.20	.50
Charleston Iron Co	100	.25	.50
Champion Iron Co	100	.15	.40
Cleveland Iron Co		....	....
Columbia Iron Co	100	....	....
Commodore Mining Co		....	....
Comstock Iron Co	100	....	....
Dayton Iron Co	100	....	....
Detroit Iron Co	25	....	.04
Elmira Land & Iron Co		..	.25
Great Western Mining Co.	100	1.25	1.50
Hall Iron Co		....	....
Homestead Iron Co	25	.01	.02
Horton Mining Co	10	....	....
Imp. Iron Mt. Mining Co.		....	....
Internat'l Development		....	22.50
Kakina Iron Co	25	....	....
Kentucky Iron Co	100	....	....
Lackawanna Iron Co.	100	.40	1.00
Macomber Mining Co		....	....
McCaskill Mining Co.		.02	.05
McKinley Iron Co	100	....	23.50
Mesaba Chief Iron Co	100	2.50	2.90
Mesaba Iron Co		....	.20
Mesaba Mineral Co		....	.75
Minnesota Iron Co		65.00	....
Myrna Iron Co	10	....	....
Northern Light Iron Co	100	....	.25
New England Iron Co	100	....	
Ohio Mining Co	100	8.00	10.00
Oneota Iron Co	100	....	....
Ophir, gold		1.40	1.50
Pennsylvania I. & S. Co.	100	.10	.15
Pioneer		....	1.00
Putnam		....	.80
Rouchleau Iron Co	100	.30	.50
Republic Iron Co	25	....	.50
Red Hematite Iron Co	100	....	.15
Standard Ore Co	25	.25	.50
Stowell Iron Co		....	.10
Towanda Iron Co	100	1.50	2.00
Ver. & Mesaba Iron Co.		....	1.00
Zenith Iron Co	25	1.50	2.75

MISSOURI.

St. Louis. June 28.

Closing quotations:

	Bid.	Asked.
Adams	$0.50	$1.00
American & Nettie, Colo.	.35	.37½
Bi-Metallic, Mont	....	4.50
Elizabeth, Mont	....	.38¾
Granite Mountain, Mont.	2.15	2.55
Hope	3.80	4.00
Leo	....	.06
Pat Murphy	....	....
Small Hopes	....	.60

MONTANA.

Helena.

Prices for the week ending May 27 :

	Bid	Asked.
Bald Butte (Mont.)	$1 95	$2.25
Benton Group (Neihart), Mont.	.18	.25
Combination (Phillipsb'g), Mont	1.00	1 25
Cumberland (Castle), Mont	.15	.25
Elizabeth (Phillipsb'g), Mont.	.42½	.47½
Florence (Neihart)	.15	.20
Helena & Victor, Mont	.42½	.55
Iron Mountain (Missoula), Mont	.65	.80
Peorman (Cœur d'Alene), Idaho	.50	.65
Whitlach Union & MacIntyre.	.35	.45
Yellowstone	.10	.15

(Special report by SAM'L K. DAVIS.)

PENNSYLVANIA.

Philadelphia. June 29.

	Bid.	Asked.
Bloomington C. & C.	....	....
Buck Mountain C.	....	....
Cambria	50@64	65@70
Connellsville Gas Co.		
Edison E. Light Co	115@117	119
Excelsior B. & S.	....	....
Locust Mt. C. & I	....	....
Penn. Salt	....	103⅛@104
Penn. Steel	....	64@65
Penn. Gas Coal	47	....
Royal Gas	....	....
Westmoreland C.	....	65½@65¾

Pittsburg. June 28.

	Bid.	Asked.
Bridgewater Gas Co.	$31.50	
Chartiers Val. Gas	....	$10 00
Enterprise Mining Co	1.00	1.50
Hidalgo Mining Co	1.75	....
La Noria Mining Co		....
Luster Mining Co	8.13	9.00
Manufacturers' Gas	29.00	30.00
N. Y. & Clev. G. C.	..	51 00
Pennsylvania Gas	8.00	9.00
People's N. G. & P. Co.	....	14.50
Philadelphia Co	17.25	17.50
South Side Gas	....	....
Tuna Oil	....	....
Wheeling Gas Co.	....	19.50
W'house Air Brake Co.	....	131.75

London Quotations. June 20. 1893.

	Buyer.			Seller.		
	£	s.	d.	£	s.	d.
Alaska Treadwell, Alaska Ter	1	15	0	2	0	0
Almada & Tirito, Mex.			6			9
American Belle, Colo.		2	0		2	6
Big Creek, Nev		7	6		12	6
De Lamar, Idaho	1	1	3	1	3	9
Elkhorn, Mont		19	0	1	0	0
Emma, Utah		1	0		1	3
Flagstaff, Utah			7½			10½
Golden Feather, Cal.		13	6		14	6
Golden Gate, Cal		4	0		5	0
Golden Leaf, Mont. & N. M			6			9
Holcomb Valley, Cal.		1	0		1	1½
Jay Hawk & Lone Pine, Mont		9	6		10	6
La Plata, Colo			6			9
Maid of Erin, Colo		7	6		10	0
Mammoth Gold, Ariz.		1	0		1	3
Mesquital del Oro, Mex., P	3	0	0	4	0	0
Mesquital del Oro, Mex., D		15	0	1	5	0
Mount McClellan, Colo		3	0		4	0
New Eberhardt, Nev.	......					3
New Guston, Colo.		11	3		12	6
New Montana, Mont.		3	0		5	6
Old Lout, Colo		2	6		3	6
Pacific		5	0		7	6
Palmarejo, Mex			9		1	3
Pinos Altos, Mex		1	0		1	6
Poorman, Idaho		8	3		8	9
Rajah Gold, Can		8	0		10	0
Richmond Con Nev.		6	3		8	9
Seven Stars, Ariz.	1	5	0	1	10	0
Sierra Buttes, Cal		6	0		8	0
" " Plumas Eur., Cal		10	0		12	0
South Poorman, Idaho	1	6	3	1	8	9
Springdale Gold, Colo.		3	0		4	0
United Mexican, Mex.		2	0		3	0
Yankee Girl, Colo			9		1	3

Paris. June 15.

	Francs.
Belmez, Spain	665.00
Golden River, Cal	130.00
" " parts	30.00
Laurium, Greece	630.00
Lexington, Mont	82.50
" parts	2 00
Nickel, New Caledonia	735.00
Rio Tinto, Spain	372.50
" " oblig	530.00
" " " 2d	53 . 0
Tharsis, Spain	118 75
Vieille-Montagne, Belgium	485.00

New York Mining Stocks.

(Latest quotations.) June 30.

	Bid.	Asked.
Alice		$0.40
Alta	$0 10	...
Belcher	.65	....
Best & Belcher.	.50	.75
Bodie	.10	....
Breece	.15	.20
Brunswick	....	....
Bulwer	.10	....
Caledonia, B. H.	....	....
Carth Creek	....	....
Chollar	.60	.85
Chrysolite	1.12	....
Comstock Tunnel	.06	.09
Colo. Central	....	.07
Con. C. & Va	1.50	....
Crown Point	.45	.75
Deadwood	....	....
El Cristo	....	.35
Enterprise	....	....
Gould & Curry	.45	.75
Hale & Nor	.30	...
Horn Silver	2.00	2.50
Iron Silver	....	.45
Kingston & Pem	...	....
La Crosse	.03	.05
Leadville	.14	....
Little Chief	.15	....
Mexican	.70	.95
Mono	.10	....
Ophir	1.15	....
Phœnix of Ariz	....	.10
Plymouth	....	1.00
Savage	.40	....
Sierre Nevada	.60	.85
Union	.55	.80
Yellow Jacket	.90	...

ASSESSMENTS.

COMPANY.	No.	D'l'nqt in office.	Day of sale.	Amt. per sh're
AlphaCon., Nev	11	June 11	July 6	.10
Alta, Nev	43	July 7	July 28	.15
Baltic Con., Cal.	4	June 29	July 15	.02
Best & Belcher	54	July 14	Aug. 4	.25
Con. New York	10	June 16	July 10	.10
Con. St. Gothard, Cal.	8	June 15	July 6	.05
Crocker, Nev	14	July 9	Aug. 3	.05
Crown Pt., Nev	61	July 18	Aug. 8	.25
Darboy, S. Dak	3	July 25	Aug. 14	.002
Derbec B. Gravel, Cal	11	July 5	July 27	.05
Eclipse, Cal	4	June 12	July 3	.02
El Leopoldo, Mex	3	July 1	July 10	.05
H'le&Nor., Nev	104	July 25	Aug. 18	.50
Justice, Nev.	54	July 11	Aug. 2	.10
Lady Washington, Nev.	9	July 11	Aug. 2	.10
Mt. George, Cal	....	July 1	July 22	.01
Occidental, Nev	13	July 26	Aug. 17	.10
Peer, Nev.	15	July 9	Aug. 2	.05
RedJacket, Nev	1	July 15	Aug. 5	.05
Savage, Nev	81	July 25	Aug. 14	.25
Silver Hill, Nev	33	June 29	July 28	.05
Utah, Nev	18	July 8	Aug. 5	.10
Weldon, Ariz.	7	July 16	Aug. 9	.05