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CONTENTS.

IT would appear from the report of Dr. E. D. PETERS, Jr., on the Mount Lyell Company that Tasmania may yet be an important producer of copper. He says that there are several bodies of barren iron pyrites in the world as large or larger than this one, but its only competitor among the valuable pyrites bodies of the world is the Rio Tinto mine, in Spain, which is three or four times as large as the Mount Lyell mine, but only one-third as rich. He also says that, after making deductions for poor parts of the ore body, there are several million tons of good ore available above the present drainage level of the valley, which can be extracted by simple quarrying and without cost of pumping or hoisting.

THE diamond industry in South Africa is in a very flourishing condition, brought about mainly by the consolidation with the De Beers Consolidated Mines, Limited, of a large number of interests and the rise in value attendant upon a restricted output and lessened competition. The rise in value during the past six months has been phenomenal, the increment having been some 50 per cent., making the value at present fully 20 per cent. higher than it has been in 18 years. The De Beers property is reported to be in excellent condition and the Kimberley in a no less flourishing state. The product of the mines is expected to go yet higher, and the shares of the De Beers, the market value of which has increased greatly, are expected by those interested to meet with still further advance.

ONE question of importance is likely to arise, among others, in connection with the Reading receivership, and that is how far the receivers can go in connection with any combination to maintain prices or to restrict production of coal. The receivers are supposed to be the officers and representatives of the court and to act directly under its orders; and it will be interesting to note what action the court will direct them to take. It does not seem at all probable that any open combination or pool arrangement will be sanctioned, but neither is it probable that any active competition or cutting of prices would be allowed, even if the receivers should wish to take such a course.

THE proposition for the reorganization of the Philadelphia & Reading Company, which has been discussed but not yet formally submitted to the bondholders and others interested, provides for a new issue of $30,000,000 collateral trust bonds, the proceeds of which are to pay off the floating debt and provide the working capital which the company has lacked. At the same time holders of existing mortgage bonds are to be asked to fund several of their coupons in new bonds. To say nothing of the difficulty which may be found in placing the large amount of new bonds, this plan has the fatal defect of increasing the burden of interest which the company has tried to carry without success. What the Reading needs, and has needed for some years past, is to cut down its nominal securities with an unsparing hand until the interest charges are brought into some reasonable relation with the earning power of the property. There are, of course, serious difficulties in the way of such action, the greatest of all being to make the bondholders understand that they would be better off with a $1,000 bond representing a sure return than with $10,000 of paper really representing nothing and having only a remote prospective value. Even should the new plan be adopted, the issue of $30,000,000 new bonds will mean only temporary relief, to be followed in two or three years by another collapse and complete bankruptcy.

THE President of the Huanchaca Mining Company, of Bolivia, was recently reported as saying that he expected that silver would still further decrease in value, but that such decrease would have no effect on the Huanchaca company because it could produce silver at a profit even if the price dropped to 270 francs per kilo, or say 42 cents per ounce. This is by no means an idle boast. During 1891, this company mined $5,497,963 oz. of silver at a total cost of $2,414,360, or 44 cents per ounce. This cost in detail as follows: Mining, 16 cents; new works, 6 cents; reduction and smelting, 9 cents; taxes and export dues, 5 cents; general expenses, 8 cents. Notwithstanding the low price of silver during the past year, the output of this mine increased nearly 15%, amounting to 6,667,703 oz., and the ore reserves are larger than before. For the 15 years ending with 1891, this company produced bullion valued at $43,033,899, paid $14,168,038 in dividends, and has set aside a reserve fund of $1,776,765. This mine by no means stands alone as regards cheapness of working, although it stands second among the silver mines of the world in point of output. Thus the Broken Hill Proprietary Company, of Australia, the greatest silver mine in the world, produced in six years and a half ending May 30, 1892, a total of 36,512,445 oz. of silver and 152,000 tons of lead at a total cost of $21,356,235. The cost per ounce of silver varied from 66 cents in 1887 to 41 cents in 1890, the average being 47 cents; the cost per pound of lead varied from 2.3 cents in 1887 to 1.4 in 1892, the average being 1.65 cents. This company has paid dividends amounting to $19,480,000. In the United States the Ontario Mining Company has, since 1880, produced 26,261,076 oz. of silver, at a total cost of $14,771,862, an average of 55 cents per ounce. The Granite Mountain Mining Company has, since 1883, produced

21,430,000 oz., at a total cost of $8,376,620, an average of 39 cents per, ounce. Some of these mines are becoming exhausted, notably the Granite Mountain, but new ones are constantly being discovered, and in all probability will continue to be discovered for many years to come. Thus the recently discovered Creede district produced 5,000,000 oz. in 1892, of which it is said that the greater part was produced at an average cost of less than 40 cents per ounce. The volume *The Mineral Industry*, just published, gives much information on these subjects which will interest our readers.

THE COLUMBIAN EXPOSITION.

The World's Columbian Fair, which was opened at Chicago, May 1st, is already, in its buildings and promises to be in its exhibits, the most wonderful achievement the world has ever seen. The magic city of palaces gathered around the lakes and lagoons of Jackson Park is marvelously beautiful; no previous world's fair ever approached it in the beauty or extent of its main buildings, their convenient arrangement or the attractiveness of its special buildings, representing the several countries and states. These state buildings and their contents alone would, a few years ago, have been considered a grand world's fair, without any of the great buildings, a single one of which would have held the exhibits of any previous exposition and had space to spare.

It is impossible to give in words any adequate idea of this crowning achievement of modern civilization. Photography gives us the buildings in detail, but cannot produce the effect which their *ensemble* creates. The beauty of design of the great palaces, though infinite in variety, produces an absolutely harmonious whole. There is no discord, nothing inappropriate or unsightly in design; nothing to offend the most exacting taste. The Columbian fair is a poem, a symphony, a creation worthy our modern civilization, and our country and worthy the highest aspirations of the human race; a fitting place for the products of peace, a real home where may meet and consult those who conribute to the peace, progress, prosperity and happiness of mankind.

Filled with unbounded admiration from a contemplation of the scene in Jackson Park, when President CLEVELAND, in fitting words, opened the fair, we cannot refrain from disappointment, in passing through the several buildings, to find them for the most part filled with packing boxes, or even, as in the Electrical Building, almost empty.

An immense discount has to be allowed on the inflated statements of the Chicago newspapers, which, on the opening day, stated that 90 per cent. of the exhibits were ready. In reality, not even 10 per cent. were ready, possibly 20 per cent. additional were approaching completion; perhaps 40 per cent. more were visible in boxes, and 20 per cent. have not even reached the fair yet. The Fair will not be fully ready before the middle of June, but there is already enough to keep fully occupied those who go there with the object of studying any department of the exhibition.

It is too soon to speak of the several exhibits—they are not ready—but they will be studied in detail, and where important will be illustrated, in the ENGINEERING AND MINING JOURNAL.

UNIVERSAL BI-METALLISM AND A MONETARY CLEARING HOUSE.

We receive many letters, most of them highly complimentary to the plan proposed by the ENGINEERING AND MINING JOURNAL for the solution of the silver problem. From the tenor of these letters it seems desirable to reiterate the general features of the proposed plan, and explain more fully such points as appear to be misunderstood by our correspondents. It is only by having the plan criticised and attention directed to what may appear difficulties in the way of its adoption that we can elucidate these. The following remarks may answer some unasked as well as some asked questions:

The industry, prosperity and civilization of two-thirds of the world have been built, and rest to-day, on silver money; 817,000,000 out of 1,218,000,000 of the, more or less, civilized population of the world have no other money than silver, and all the rest use both silver and gold. If the value of silver were suddenly destroyed it would necessarily bankrupt a great part of the world, set back industry, commerce and civilization a century and benefit no one. Every industrial country that does business with others benefits by the prosperity of those it has commercial transactions with; and the great exporting and money lending nations are most interested in improving the credit and financial stability of the others.

Unless some international action intervenes, silver, being practically demonetized, will decline in value to a point probably far below, and not necessarily connected with, its cost of production. It may go down to 20 cents an ounce, it may go to 5 cents, for the properties of silver are not so much more desirable, in industrial uses, than those of nickel, copper and aluminum, as to make large uses for the metal at any very great difference in price, and, since it cannot be produced in very large quantities, its uses must always be restricted, if its cost of production is to be secured. The market for the metal will not increase as the price declines, for all the silver is always in stock and ready to be put on the market—unlike copper, lead, etc., which are actually consumed and disappear. No one will buy it for ornamental or other purposes while its value is declining with the prospect of finding no bottom, since the world's stock would supply the market for an indefinite time, even if no new silver were produced. At even the low prices which have ruled for some years now the production of silver is no doubt more profitable than that of gold—as is proven by the great increase in its production and the stationary or but very slightly increasing output of gold. It would seem from this, that gold is not dear enough, its production is not sufficiently profitable, or it would be produced more abundantly. The cost of production of both metals, and especially that of silver, is being reduced greatly by improved methods of treatment and any fixed value ratio between the metals cannot long be maintained without the danger of causing a great overproduction of one or the other.

The amount of money, that is of gold, silver and uncovered notes in the world, is estimated by the Director of the United States Mint as follows, in coining or nominal value: Gold, $3,632,605,000; silver, $4,002,700,000; uncovered paper, $2,629,663,000; total, $10,264,968,000. Of this silver about $1,700,000,000 (coining value) is held by India, China and the Straits, which are not credited with any gold, though we know they possess large amounts uncurrent. All other countries possess quite enough gold, and all together far more than enough to render their money stable, secure and interchangeable on the bimetallic basis, provided this were adopted by all countries as the plan we suggest contemplates.

If a bank has in gold reserve one-quarter of its note issue it is considered perfectly safe and able to redeem. In our New York bank clearing house about 5% of the transactions suffices to settle the balances. It seems certain, therefore, that if the associated nations under the proposed plan should buy for gold, say, $300,000,000 (at the ratio to be adopted) of the silver nations' silver, it would put the whole world at once on the bimetallic basis and make all their interests identical and all their money of equal value. The silver purchased would, on the basis adopted, be absolutely equal to gold, so that it would cost the nations buying it nothing except such subsequent reductions in the value of silver as the changed conditions of production might render necessary.

As an offset to this sole and only possible loss it would immensely improve the credit and increase the prosperity of all silver nations; and as India, China, the Straits, Japan, Mexico and South America are the chief of these, and are at the same time the great markets for English, German and French manufactures; and as their securities are largely held in Europe, the improvement in the value of their securities would greatly exceed the total cost of the silver purchased by these three European countries even if that silver should ultimately have no value whatever. The vast impetus their prosperity and improved credit would give to manufactures would create an era of prosperity in Europe which would be worth many times the whole cost of the silver purchased. England in particular would see India sell about $200,000,000 of silver for gold and would herself contribute of this only 7%, or $14,000,000.

Let the several nations agree to adopt bimetallism on any ratio they may wish between the metals (say 20 to 1), to begin with.

Let them agree to take pro rata, according to their holdings of money (gold, silver and uncovered notes), so much of the silver of the silver basis countries as may be necessary to put all on the bimetallic basis—(under this about $300,000,000 of silver would probably have to be purchased in about the following proportions: The United States would take 16%; France, 15¾%; Germany, 9%; Great Britain, 7%).

Let the nations appoint a monetary arbitration commission (which we have called an International Monetary Clearing House, with powers:

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 silver offered.

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

3. To purchase, for common account, such an amount of silver (say 25% of their holdings) from each of the silver basis countries as is necessary to put it on the gold or bimetallic basis.

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

5. To determine from time to time what, if any, change in the value-ratio of gold and silver is called for by the changed conditions of production.

6. To publish the transactions of the clearing house periodically.

This clearing house to be composed of one or more representatives of each country and to act through the mints of the several countries as depositories, and to have a central clearing house at one of the capitals.

Under this arrangement each nation retains absolute independence

of action, but it gives to its associates in the clearing house—just as does a bank in the clearing house—the right to pass judgment upon its monetary transactions, and if these are deemed by its associates to endanger the security and value of that nation's money, it must either conform to the decision of its associates or leave the clearing house. While it is in the clearing house it must, like a bank, conform to its rules in its buying, selling or making of money. The fact that a nation is in the International Monetary Clearing House is a guarantee of the soundness of its money, and should it leave the clearing house the value of its money and other securities would certainly be impaired in public estimation. No nation could afford to stand out of the clearing house, so great would be the advantages it would gain in it.

It is absolutely necessary that every monetary transaction be reported to or cleared by the clearing house, in order that there may be perfect honesty among the nations, and knowledge in the clearing house of all the facts.

After the first purchase of silver needed to put all on the bimetallic basis, all the silver and gold offered would be purchased through the customary channels (the mints) for account of the clearing house and the metals, or the clearing house certificates representing them, would be delivered pro rata to the nations which had applied for each; or if a surplus were uncalled for, it might be apportioned to the several nations according to the amount of their money at the time.

The working details of the plan can be elaborated by the clearing house commission much more wisely and justly than by any one nation alone. No unjust or unfair arrangement could secure the assent of a majority of such a commission.

Should the condition of production-ratio between gold and silver require it, the value-ratio would be changed by the clearing house slowly and by very small amounts until an equilibrium were brought about. The loss would thus be distributed over the whole world according to the holding of money, and would not fall on the individual holder of the coin or certificate. There could be no panic, no disturbance of industry or commerce; gold and silver would be everywhere exchangable according to the face value of the certificate, which would not specify one to the exclusion of the other; though the clearing house could no doubt require holders of certificates to take both metals in certain proportions if occasion required.

No plan can possibly be durable or successful which limits the amount of gold or silver to be taken. The smallest surplus would always regulate the market and the mere anticipation of a surplus would disturb the working of the plan. Neither can any arrangement succeed which is for a limited, finite time. The expectation of a collapse at the end of the time would induce some of the associates to unload one metal and accumulate the other.

It is not a question whether the gold in the world would suffice for the world's business, nor is there any justice in the claim by the producers of either metal, for government aid to maintain its price. It is simply a question whether the great nations can afford to bankrupt two-thirds of the people of the world by the sudden destruction of the value of their money. Will it not be better to adopt a plan which will allow the value of silver to go down to any ratio, even to its entire demonetization, gradually, without disturbance of industry or prosperity? Surely this is better than forcing the greater part of the world into bankruptcy.

The benefits to be derived from the adoption of clearing house methods are well known. Applied to international money matters they would greatly facilitate business and reduce the transfer and retransfer of money from one country to the others, and would undoubtedly bring about better international understandings and safer national monetary policies.

The adoption of this plan for a complete and durable solution of the silver problem would inspire confidence all over the world in the absolute security of the money of the associated nations; it would bring into active industry the money now hoarded in vast quantities in some countries or held to pay debts from hand to hand, as gold and silver were required among our banks before the establishment of our clearing houses. It would not only greatly increase the efficiency of the money in circulation, but it would put in circulation vast amounts now idle; it would promote industry, commerce, prosperity over the whole world and would prevent inflation and unsound national financiering and disasters; it would secure a wise settlement of monetary questions by leaving them to the arbitration of a permanent, expert commission representing the interests of the whole world rather than the interests of a single nation or of a few interested and influential men in a nation. Whatever may be the varying conditions of production of the precious metals it meets them without creating industrial or commercial disaster. The whole world, in proportion to its money holding, stands the loss, gradually, imperceptibly, even if silver should ultimately have to reach figures which would force it to find an outlet in the arts instead of in money.

NEW PUBLICATIONS.

PATENTABLE INVENTION. By Edward S. Renwick. Rochester, N. Y. The Lawyers' Co-operative Publishing Co. Pages, 156. Price $2.

The law of patents, originally plain and simple enough, has grown to be a great and complicated subject, owing chiefly to the very large number of patents which have been issued, and somewhat also to the body of rules and precedents grafted upon the original statutes by the decisions of the courts. The law declares that patent protection may be granted to "any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof," provided, of course, that no general publication of the same has been made in this country or elsewhere, previous to the application for a patent. The law, however, does not define the word "invent" and its exact meaning has been left to be laid down by the courts. It would seem that to determine whether a device is patentable there need be only three questions asked: Is it new? Is it useful? Was it devised or discovered by the person who asks for the patent? These questions, however, are not always easily answered, especially the first. On all important classes of machinery so many patents have been issued that a long and careful investigation is often necessary to decide whether a device is an infringement on some existing patent or a revival of some old one the patent on which has lapsed. On this point the rules of the Patent Office and the decisions of the courts have always chiefly turned, and much argument and legal ingenuity have been expended. The novelty of an invention at the present time must, as a rule, consist in the manner of combination of devices already known, and how far this can be carried is often a difficult point to decide. Out of it, in fact, springs a large part of the litigation on which the courts have to decide in patent cases.

The second question is much easier to answer, and the usual practice is to grant a patent for anything that is not actually harmful or that does not have a purpose unlawful or contrary to the public welfare; the practice extending even to the issue of patents for very trivial things. The third question is more difficult again, for there are numerous instances where two or more persons claim the same invention, and a decision on the priority of their claims has to be made. The Patent Office has an established system under which it works, and gives its decisions; but it is a well known fact that very few important and lucrative patents can be considered as good until they have been passed upon by the courts. In our own columns hardly a week passes without reference to some litigation of this kind; and the extended controversies over the incandescent electric light and the trolley or overhead system of electric propulsion are prominent cases which can be cited.

The author of the book before us is himself an inventor, and has also had many years' experience as a patent solicitor and expert, so that his work is based on the results of experience. In writing it he has taken the view of the inventor rather than the jurist, and has sought to make the book useful to the former class. In the first part the definition of a patentable invention is given as provided by the law and generally by the rules of the Patent Office. The second part deals chiefly with the decisions and definitions of the courts as to what is and what is not properly patentable. The third part treats of reissued patents. The different parts are sub-divided into various heads, those of the second, for instance, being a Useful Art; Machines; Manufactures; Compositions of Matter, and Designs. In all many instances are given in illustration of the points sought to be established, and a large number of cases in the courts are cited.

It must be said that the book is in general clearly written and free from any affectation of legal phraseology. The views presented are, as a rule, apparently well supported by the cases and decisions cited. There is very little that seems to be superfluous, and much that will be very useful to the patentee or the inventor who desires to secure protection for his invention, and to avoid the difficulties that may be in his way.

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.

Tax the Railroads. By Henry C. Frink. New York: H. C. Frink. Pamphlet, 16 pages. Price, 10 cents.

State and City Supplement of the Commercial and Financial Chronicle. New York: Wm. B. Dana & Co. Pages 181.

Fifty-second Congress: Official Congressional Directory. By W. H. McMichael. Washington: Government Printing Office.

Proceedings of the Atabama Industrial and Scientific Society, Volume II., 1892. University P. O., Ala.; published by the Society. Pages 50.

Fifth Annual Report of the Texas Agricultural Experiment Station, for the year 1892. Bryan, Tex.; issued by the Agricultural and Mechanical College of Texas.

First Annual Report of the Bureau of Industrial Statistics of Maryland. A. B. Howard, Jr., Chief of Bureau. Baltimore, Md.: Printed for the State. Pages 224.

Knots, Splices, Hitches, Bends and Lashings. By Ensign F. R. Brainard, U. S. N. New York: The Practical Publishing Co. Pages 76; illustrated. Price, $1.

The Iron Ores of Great Britain and Ireland: with a Notice of Some of the Iron Ores of Spain. By J. D. Kendall, F. G. S. London: Crosby Lockwood & Son. Pages 430; illustrated.

Ausfurkolisches Handbuch der Eisenhuttenkunde. Volume II. By Dr. Hermann Wedding. Braunschweig, Germany: Friedrich Vieweg & Son. Pages 600; illustrated. Price (delivered in New York), $4.

Freibergs Berg- und Huttenwesen. Herausgegeben durch den Bergmännischen Verein zu Freiberg. Freiberg, Germany: Craz & Gerlach. Pages 342; illustrated. Price (delivered in New York), $3 20.

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

Some Arkansas Minerals.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: An interesting find of the minerals in situ, from which a mineral spring at this place derives its properties, seems worthy of mention. The spring in question is in a valley about 400 ft. below the top of East Mountain, the highest elevation in the vicinity. The geological formation hereabouts is sub-carboniferous. East Mountain is composed of strata of limestone and sandstone, with a capping of millstone grit, largely impregnated with iron (limonite, turgite and goethite mostly) with small crystals of quartz. The base of the mountain rests on a black shale; midway up its flanks is a small seam of coal (not workable) in what has been termed the coal bearing shale. The mineral spring from an analysis made by Dr. A. E. Menke, State Chemist, contains, per million parts of water: Magnesium, 290·2; calcium, 445·8; silica, 31; iron, 26·6; sodium, 689·5; potassium, 78·3; chlorine, 117·6; sulphuric acid, 2390·0; carbonic acid, 728·7; total, 4797·7 parts.

The water is quite strong and resembles, in some particulars, the Pyrmont-Waldeck water of Germany.

It was thought that the spring, being near the base of the mountain, derived its salts from the mountain, as the formation near the spring did not account for its constituents. This theory proved to be true, as prospecting resulted in the finding of an outcrop of various soluble minerals two miles from the spring. Undoubtedly they exist in abundance elsewhere on the mountain, though perhaps not outcropping. The minerals were mostly found in a dark reddish impure limestone and were as follows: Trona (sodium carbonate); ultrocalcite (calcium nitrate); nitre (potassium nitrate); a carbonate of lime and soda (near gay-lussite, but impure); melanterite (iron sulphate). Some of these were in crusts and efflorescent, but others massive and concretionary, notably the sodium carbonates. Much of the limestone on the mountain is calcite, but there are layers of dolomite (magnesian limestone), which indicates probably the source of the magnesia. Other springs on the mountain also contain magnesium sulphate, but not in such abundance as the mineral spring referred to. Except in the case of the iron sulphate, it will be observed that no sulphur was found, but the shales in some of the strata contain sulphur which explains its presence in the spring water.

This is a somewhat interesting section of the State, from a mineral standpoint. We are only 60 miles from the celebrated zinc country in southwestern Missouri; and though no zinc ore in quantity has been yet found in the immediate vicinity of this place, yet small deposits of "jack" occur within 15 miles west of and southeast of this place. There are, however, deposits of zinc northeast of us in Marion and other counties, a section which is destined to become a great zinc producer when railroads shall have penetrated into it. There will be some fine specimens of zinc ore from that part of Arkansas at the World's Fair, notably one piece from the Morning Star mine, measuring 7 ft. long, 6 ft. wide and 4 ft. thick, containing 14,000 lbs., with only 10% gangue. I have not seen this, but am informed it is Smithsonite, or zinc carbonate. Our progressive governor stated he would pay for the transportation of this to Chicago; if the State would not; hence this piece of zinc ore is known as "Fishback's zinc." Another piece too large to move remains at the mine; it is 15 by 11 by 10 ft. These blocks were cracked off a solid mass which exposes a block 43 by 33 by 63 ft.

FAYETTEVILLE, Ark., April 17th, 1893. "THEOPHRASTUS."

"The Mineral Industry."

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: There is enough valuable information contained in the book to more than cover our wants. I say valuable, for Mr. Rothwell's name as editor, is a sufficient guarantee that time employed in the perusal and noting of the contents will not be time frittered away.

THE BETHLEHEM IRON COMPANY,
SOUTH BETHLEHEM, Pa., April 21th. ABRAHAM S. SCHROPP, Secy.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I beg to thank you for the copy of your great work, "The Mineral Industry." We find the compiling of this most excellent; and it has certainly been done with great care. We wish to congratulate the publishers and editors of the journal on their enterprise, and also on their good fortune in being able to bring out such a valuable work at this particular time.

THE WALBURN-SWENSON CO.,
CHICAGO, April 25th, 1893. N. W. WALBURN, Prest.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We beg to acknowledge receipt of copy of your volume, "The Mineral Industry." After a very careful and critical examination I can pronounce it the most noteworthy achievement in the line of statistical literature that has yet been accomplished by any trade journal in America. It is really an indispensable reference book for anyone interested in the minerals of our country. The journal of which I have the honor to be the managing editor each year reviews the industrial conditions in the Southern States, and I have had considerable experience in the compilation of statistics, and viewing your work from the standpoint of a statistical editor, I unhesitatingly pronounce it as simply marvelous. Please accept my congratulations.

TRADESMAN PUBLISHING CO.,
CHATTANOOGA, Tenn., April 22d, 1893. GEO. W. OCHS, Business Manager.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The copy of "The Mineral Industry: Its Statistics, Technology and Trade," has been received. The work seems to be complete in every particular, covering every branch of the mineral industry in such detail and in such a readable style as to make it both valuable and entertaining to the mining world. I am sure that it will meet with very popular favor, and attain the high degree of success it deserves. I will reserve a conspicuous space for its exhibition in the library of the department, so that it may receive the notice it merits.

F. J. V. SKIFF.
Chief Department of Mines and Mining, World's Fair.
CHICAGO, April 26th, 1893.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have felt impelled to give you my opinion of the wonderful monument you have erected to yourself in the first volume of "The Mineral Industry," but if I were to tell you what the book is and what it will be to me as a daily companion in my varied work, another volume would be needed to make you understand it all. Unable to state fairly its merits in a few words, I have set myself to discover omissions and defects in order to show you how much a complete work of the kind has been needed; but, really, neither in the index nor in the body of the work can I find that anything has been neglected. The tables are far superior in breadth and in accuracy to anything I have ever seen. This volume on my desk will give answer immediately to thousands of questions which it has heretofore been necessary to obtain by laborious search through encyclopedias and dozens of prolix technical works. In these pages you have crammed a marvelous aggregation of facts which the busy man needs to know, and you have done it so concisely and with such admirable system, that no time is lost in acquiring needed information on the burning topics of the day in our industry. The names of your collaborators would be sufficient guarantee of the scope and quality of the material furnished in the volume, but even this knowledge did not prepare me for the thoroughness and completeness of the work, its logical arrangement and the beauty of its typography and binding.

Perhaps you will remember that years ago you told me it was your mission to provide suitable literature on mining and metallurgic topics. Volume I. of "The Mineral Industry" for 1892 proves most conclusively what I then told you, that the product of your own brain would eventually be the crowning effort in the fulfillment of that mission. I trust that many more volumes will be added to the series before you resign the editorship.

THEO. B. COMSTOCK.
Director School of Mines, University of Arizona.
TUCSON, Ariz., April 26th, 1893.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The value of mineral statistics depends as much on their novelty as on their accuracy. Tables of production, consumption and stocks, several years old, may be historically very interesting, but they offer slight aid toward determining the present intrinsic value of a metal or its prospective position. Estimated by this standard, the volume of the "Mineral Industry" just issued as a statistical supplement of the "Engineering and Mining Journal" is entitled to the highest rank.

It was ready for publication before the end of February, though its appearance was delayed by a typographical mishap until April. But that, even within a little over three months from the close of the year, there should be published in a volume of over 600 pages, bringing up to January 1st, 1893, the statistics not only of production and consumption, but of importation and exportation and cost of every important metal, mineral, gem and building stone mined in this country; also, the latest published statistics from abroad, and a large body of original information brought up to date as to the world's progress in mining and metallurgy—is a feat for which the editor may justly take no little credit to himself.

The intent of the volume is two-fold. First, to publish statistics proper of production, consumption and stocks, brought up almost to the eve of publication, as has been done by the "Engineering and Mining Journal" for years past in its first issue for January. Second, to supplement this statistical information with a review of the progress made in the mining and metallurgy of each metal during the preceding year, and with articles by specialists describing the improvements in their branches, either produced or proposed. The volume, therefore, is intended to combine the features of a Government statistical report (from which it differs essentially by its speedy appearance) with a technical and scientific review of the past year's experience in mining and metallurgy. May Rothwell's Jahrbericht become as necessary and stable an institution as Wagner's!! The task was no easy one. It must be admitted that the first attempt at its fulfillment has been highly successful.

It would be easy to point out inaccuracies, to detect faults in judgment, and to discover lack of proportion in parts. Any such errors the editor himself will be the first to detect and correct in the future. But he is critical to captiousness who hunts for flaws—when he should be grateful that a work so useful to the mining and metallurgical interests has been so well and promptly done. It is, and we hope its successors will continue to be, a boon to the executive officers of our mining and metallurgical companies, as a guide in their business transactions; for the more ample and reliable the statistical information is with regard to the position of any article of merchandise, the less room there is for wild speculation.

But such a volume is of still greater value to the busy superintendent, who is debarred by the exacting duties and fatigue of his arduous life from study, and to whom, therefore, such a volume, if it provides him with what is really correct, and also new, brings year by year up to the level which his profession, by the united thought and effort of all its members, has attained.

JAMES DOUGLAS,
NEW YORK, May 3rd, 1893, Prest. Copper Queen Cons. Mg. Co.

MINING AT THE COLUMBIAN EXPOSITION.

To most of our readers, probably the most interesting part of the Columbian Exposition is the Mines and Mining Building, and it may be said that no department of the World's Fair was further advanced or in better order than this. This gratifying result was in great part due to the ability of Mr. F. J. V. Skiff, Director of the Department of Mines and Mining, and to incessant labor, both on his part and that of the excellent staff of assistants collected and organized by him.

The large illustration given is from a photograph of the main front of the building, and the smaller cuts are plans of the main floor and gallery and a cross-section showing the gabled end of the roof. The Mines and Mining Building is one of the most prominent of the World's Fair, a structure 700 ft. long and 350 ft. wide, and situated between the Electricity and Transportation buildings. It cost $265,000. It has a floor space of nearly six acres and its architecture is of the Italian renaissance, with a light French spirit visible in its exterior design. There are four great entrances to the building, one on each side, but those of the north and south are the most pretentious. Broad flights of stairways lead to the galleries from each side of the general entrances. These galleries, which are lighted by spacious side windows, as well as by the apertures above, are 25 ft. above the ground floor and are 60 ft. wide. Representative of the industry to which the edifice is dedicated are prominent allegorical figures over the main doorway. A collossal, half-reclining female figure holds aloft the proverbial lamp and pick of the miner, while at various other points may be seen other emblematic decorations illustrative of mines and mining. Spacious promenades on the gallery floor afford a fine view north and south. These covered promenades are 25 ft. wide and 230 ft. long, and give access to the building at short intervals. The ornamentation of the interior of the building is tasteful, but not extravagant. In exterior appearance it is massive, yet not ungraceful from an architectural standpoint. The main fronts are 65 ft. high from the ground to cornice, and the main central entrances 90 ft. to apex of pediment.

The long sides of the building are treated in a simpler manner than the main fronts; large segmental windows extend through the galleries and are placed between the broad piers, affording an abundance of light to the space beneath the galleries. The two-storied portion of the building, of which the gallery forms the upper part, extends entirely around the structure and is 60 ft. wide. This portion is built of wood and iron combined.

The great interior space thus inclosed is one story high, 630 ft. long and 230 ft. wide, with an extreme height of 100 ft. at center and 47 ft. at sides, and is spanned by steel cantilever roof trusses, supported on steel columns, placed 65 ft. apart longitudinally, and 115 ft. and 57 ft. 6 in. transversely, thus leaving a clear space in center of building 630 ft. long and 115 ft. wide, with two side divisions, each 57 ft. 6 in. wide and 630 ft. long, leaving the central space encumbered with only 16 supporting steel posts. The cantilevers are of the pin connection type to facilitate erection. The inner and higher ends of the cantilevers are 46 ft. apart, and the space between them is spanned by riveted steel trusses, with an elliptical chord. These trusses are designed so as to form a clear-story 12 ft. high, with vertical sash extending the entire length of the central space, 630 ft., and terminating at each end with a great glass gable, setting back 60 ft. from the front ends of building. The wide spacings of the cantilever necessitated an extensive system of longitudinal purlins of the riveted lattice type.

ASSIGNMENT AND OCCUPATION OF SPACE.

There is available in the Mining Building for exhibition purposes 227,847 sq. ft.—that is, space exclusive of aisles, etc. According to the instructions of the Director-General one-half of the space on the ground floor was reserved for occupation by the various foreign countries, and this space was assigned during the summer and fall of 1892. The other half of the main floor has been placed at the disposal of the States for collective exhibits of their mineral resources and to individual exhibitors.

The present status of allotment to the foreign section is as follows, in square feet: France, 9,265; Canada, 9,780; Germany, 21,994; Venezuela, 1,015; Mexico, 11,990; Italy, 2,730; Russia, 4,265; Spain, 3,461; Costa Rica, 782; Honduras, 1,159; Greece, 709; New South Wales, 9,766; Great Britain, 8,066; Brazil, 2,800; Cape Colony, 2,943; Austria, 4,680; Japan, 2,405; Argentine, 2,795; Colombia, 2,080; Ecuador, 702; Chili, 1,080; Bolivia, 709.

At the present writing 48,775 sq. ft. in all have been assigned to 37 States, as follows: Colorado, 2,698; New Mexico, 1,734; Idaho, 1,440; South Dakota, 1,058; Michigan, 3,038; Minnesota, 1,419; Louisiana and Tennessee, 693; Pennsylvania, 3,017; North Carolina, 1,665; Montana, 2,220; Washington, 1,428; California, 2,220; Wisconsin, 1,911; Indiana, 1,029; Kentucky, 1,403; New Jersey, 726; Oregon, 1,395; Kansas, 1,150; Utah, 1,620; Wyoming, 1,260; Arizona, 1,700; Missouri, 2,155; Ohio, 1,952; New York, 2,503; West Virginia, 1,813; Virginia, 1,440; Iowa, 560; Massachusetts, 408; Nevada, 354; Oklahoma, 165; Connecticut, 459; Florida, 354; North Dakota, 709; South Carolina, 294; Maine, 420; New Hampshire, 189; Vermont, 176.

The mining machinery and appliances of various kinds occupy in all 35,622 sq. ft. A space outside the Mining Building has been reserved for displays of well drilling machinery, and covers 31,000 sq. ft. The gallery floor, having an available space of 57,892 sq. ft., has been devoted to exhibits of the industrial minerals, and to the more technical side of the mining and metallurgical industries. The broad avenue down the center of the building, separating the foreign from the State exhibitors, has been christened "Bullion Boulevard." To the west of this boulevard the foreign countries have made brilliant exhibits.

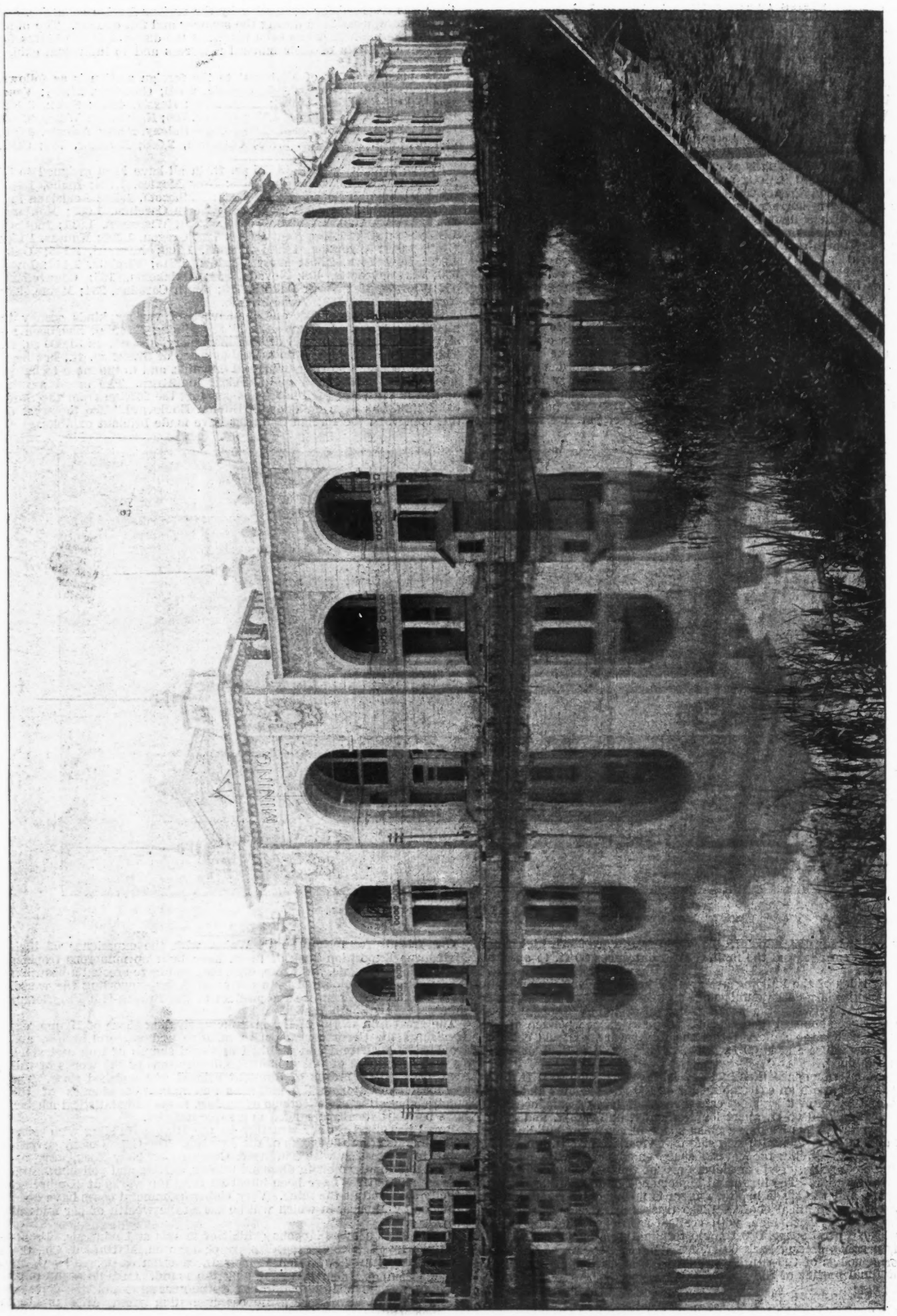
GENERAL VIEW OF THE EXPOSITION GROUNDS.

Our friends from New South Wales, with the experience of their Melbourne Exposition back of them, have built up numerous trophies of coal, copper ingots, tin ingots, ores, etc., and have erected a beautiful silver column, surmounted by a statue of Atlas supporting the world. This column will illustrate the product of the Broken-Hill Proprietary mines, of New South Wales.

The great iron works of Baron Stumm, rivaling those of Krupp, are furnishing the German space with massive and graceful arches, and trophies in structural and polished sectional shapes of iron and steel. In the background of this exhibit are illustrations of the works of this firm, pictured by means of different colored and polished slags. The technical exhibit from the museums and mining academies of the empire, consisting of collections of models, maps and statistical matter, have been artistically arranged in a space near by.

Brazil has filled up her structure in the Mining Building with gems and minerals from the banks of the Amazon. The Cape Colony government, in connection with Tiffany & Company, of New York, have arranged a unique exhibit in diamond mining, cutting and polishing. Machinery and natives have been imported from the works at Kimberley, exactly as found at the mine. Very elaborate mineral cases have been provided by Mexico, in which will be shown the wealth of her mineral provinces.

England has a miscellaneous exhibit of metals and minerals. Fronting upon main aisles are the displays of Johnson, Matthey & Co., the famous platinum merchants. Francis D. Moulton & Co. will erect a statue in salt of Liberty enlightening the world. Canada is the next neighbor to England, and in addition to the general exhibit the geological survey will have a separate representation from each mineral province, Ontario's predominating. The gold ores from Nova Scotia are, indeed, a surprise, and the samples from the coalfields afford some idea of the resources of the province in that particular. The asbestos,

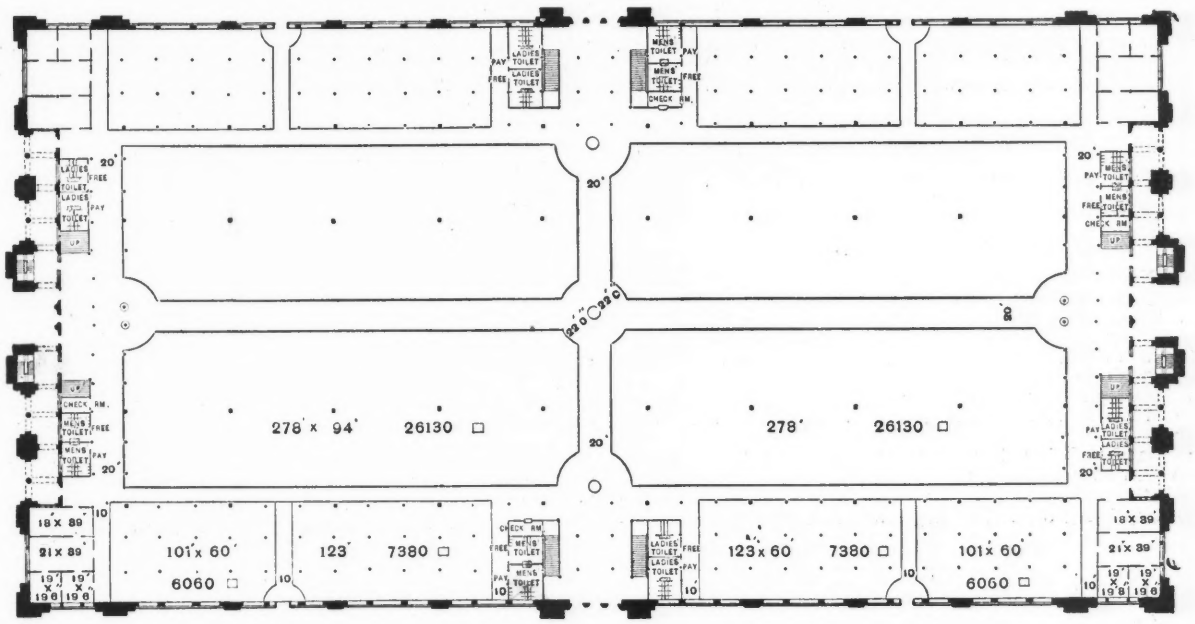


MAIN FRONT OF THE MINES AND MINING BUILDING AT THE COLUMBIAN EXPOSITION.

mica, plumbago and phosphate deposits are interestingly represented in the Winnipeg exhibit, while the rich nickel ores of Ontario are finely displayed by that province, as well as the iron ores.

Austria shows up the extent of her iron and steel industries and a great variety of fireclay material and mineral waters. Russia has a trophy at the west entrance of iron and steel, and in her space near by has a magnificent display of the rare metals and gems from the Ourals. Japan has an exhibit illustrating her copper and gold resources, and metallurgical arts as practiced. Italy exhibits fine marble and silver. Spain shows a great variety of minerals, including many specimens quarried out some huge monoliths of red sandstone to furnish her space.

Colorado, Montana, Utah, Arizona, New Mexico, Washington, Idaho, Ohio, Pennsylvania and Virginia have prepared artistic superstructures and have arranged suitable backgrounds and accommodations for the mineral exhibits. In the line of special State exhibits may be mentioned the anthracite coal needle from Pennsylvania, the geological obelisk from New York, and the silver statue of Montana. The Department of Mines and Mining deserves much credit for securing the unbroken facades that adorn the front of the main avenue through the building, as it has constantly urged upon each of the States this feature



PLAN OF MAIN FLOOR, MINES AND MINING BUILDING.

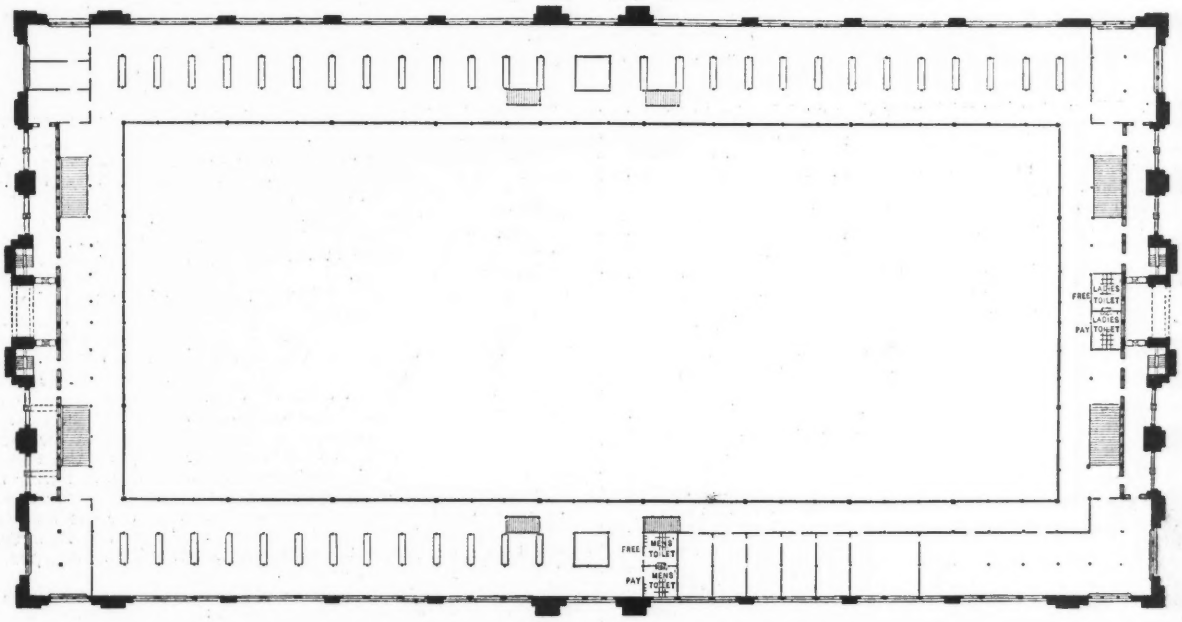
from the Rio Tinto mines. Greece displays fine marbles and a variety of antique mining appliances.

Of the South and Central American countries, Argentine, Colombia, Ecuador, Costa Rica, Honduras, Venezuela and Bolivia are represented. The fine Chilian exhibit has been made possible through the co-operation of Messrs. W. R. Grace & Co., whose extensive interests in the nitrate fields of Chili has led them to make a very valuable and attractive exhibit of the various grades and qualities of nitrate.

To the east of Bullion Boulevard the scene is no less animated. Immediately along the front the collective displays of the States have been arranged. Twenty-eight mineral producing States have built up handsome pavilions, utilizing as construction material representative minerals of the States. Thus Missouri and Michigan, prominently located at the central circle, have adopted very ornate designs for their inclosing structures—Missouri bounding her space with columns of terra-cotta, supporting a classic frieze and pediment. Michigan a parapet of her ornamental stone, with numerous trophies in copper. Kentucky is preparing a turreted fronting arch of shining cannel coal, which forms a strong contrast with the marble pavilion of her neighbor, New York. California has adopted a marble exterior also, while Wisconsin has and furnished them with suggestions as to the best method of exhibiting in a style at once artistic and harmonious with the surroundings.

In the mining machinery section beneath the gallery 70 exhibitors demonstrate the vast improvement in machinery used in this industry. In the outside exhibit there is an operating tramway, connecting with the ore yard of the department, where material for demonstration is stored, with the mining tunnel, running east and west at the south end of the Mining Building. In this tunnel tramway cars such as are in use in mines will convey the bags of ore to the mining machinery on the east side of the building.

Perhaps the most striking feature of the exhibits in the gallery as



PLAN OF GALLERY, MINES AND MINING BUILDING.

the visitor looks from the floor is the decorated front of the Standard Oil Company's exhibit. This occupies the entire north gallery and illustrates the oil industry, including not only a collection of all the oils produced in the country, but a full set of derivatives and by-products, as well as all of the appliances used in drilling, piping, storing and distributing oil. This exhibit, and that of the H. C. Frick Coke Company, near the south gallery—a model made to accurate scale showing the complete process of coke manufacture and the entire plant of the firm—form two of the most interesting gallery displays. In the

gallery also have been arranged a series of courts in which will be grouped, according to affinity, all of the industrial and economic mineral materials. An operating assay laboratory has been equipped; an exhibit of interesting mine models secured, and a large library of books on mining, etc., catalogued for the use of the public.

The department is undertaking in its own behalf the formation of special technical collections in mineralogy, metallurgy, coal, salt, and building stones. Nearly the entire west gallery is occupied with cases and cabinets of uniform designs, and filled with mineral of the highest scientific interest, and with metal samples showing in a systematic order the processes employed in the arts for their reduction.

We expect in later numbers to give an account of the exhibits of the different States and countries which have taken part in the Exposition, which will be fully illustrated; and we hope also to give some further account of the energetic managers whose work has brought about the successful result.

VARIATIONS IN THE MILLING OF GOLD ORES.—V. BALLARAT, VICTORIA.

Written for the Engineering and Mining Journal by T. A. Rickard.

(*Concluded from page 390.*)

At the New Normanby mill in Ballarat East* the ore crushed is of a very free milling character; it occurs coarse and in quartz almost free from pyrites. There is no concentrating machinery. The character of the gold is proved by the percentage obtained in retorting the amalgam, the yield of bullion being rarely under 55% and averaging very nearly 70%. Four-fifths of the product of the mill comes from the mortar-box and of the remainder nearly all is caught by the first narrow strip of copper plate and the well immediately below it. The blanket washings are very poor.

The North Cornish mill is not in the town of Ballarat, though in the mining district of that name, but at Daylesford. The plant consists of 50 stamps, and the rate of drop varies from 70 to 75 per minute, the height of the drop being 8 in. The depth of discharge or issue is extremely irregular. When starting with new dies or false bottoms the top of the die is level with the bottom of the grating and the depth of discharge is nil, but as the dies wear down (they are 4 in. deep) the issue increases to a maximum of a little over 3 in. The mill crushes 90 tons per day, or 2,450 tons per month.†

The amalgamation is effected by methods similar to those described as in use at the Star of the East. Scarcely 11% of the amalgam obtained comes from the mortar-boxes. Much the largest proportion is derived from the skimmings of the wells and in the blanket sands. The latter are treated by Berdans, of which there are six. The tailings from the Berdans go to a Frue vanner for after-treatment.

This is a comparatively new mill, the oldest portion being five and the newest two years old. The quantity of ore in sight in the mine is such as to have led to the consideration of a further addition to the number of stamps. The mine has paid large dividends for a long period.‡ Notwithstanding these facts the mill is miserably incomplete. Although very favorably situated and having all the fall required for an automatic arrangement of its parts, it is unprovided with rock-breakers or self-feeders. In the feeding of the 50 stamps there are employed upon each shift 5 men at 30 shillings per week, making a total cost of £1,125 per year. The other end of the treatment shows equally grave defects. In spite of the fact that the concentrates are of unusual richness and that to them the shareholders practically owe their dividends, there are only 14 Frue vanners to treat the pulp coming from 50 stamps. The ore is one requiring very careful concentration, since after having passed over the amalgamating tables it still carries black slimes known to be very rich. For the saving of such material the Frue vanner is excellently adapted, but it is a machine which must not be crowded, and for the work to be done at the North Cornish mill 22 of these concentrators is the least number that can be employed consistently with good work.

Referring to the comparative table it will be noted that the five mills whose figures are there given show a general resemblance in their methods. They fairly represent existing colonial practice. It will be seen that the old Star of the East mill, the New Normanby, and the North Cornish all have the same weight of stamp. The other two have unusually heavy stamps, and in this respect they are following the tendency which was to have been noted in California a few years ago, and like the California mills they too will probably ere long find it expedient to revert to a lighter pattern. This is an instance of the same ground being gone over twice and of the needless expenditure of time and money in trying experiments which some other district has already carried out. There is no worse waste than the waste of experience.

The Britannia United and the New Normanby make 12 drops per minute less than the other three, owing to the fact that the gold being coarser and more free the ore does not necessitate fine crushing. The fineness of the gratings indicates this. The height of the drop is practically uniform save in the case of the New Normanby, where, owing to the unusual coarseness of the gold and the absence of pyrites worthy of concentration, rougher stamping is permissible.

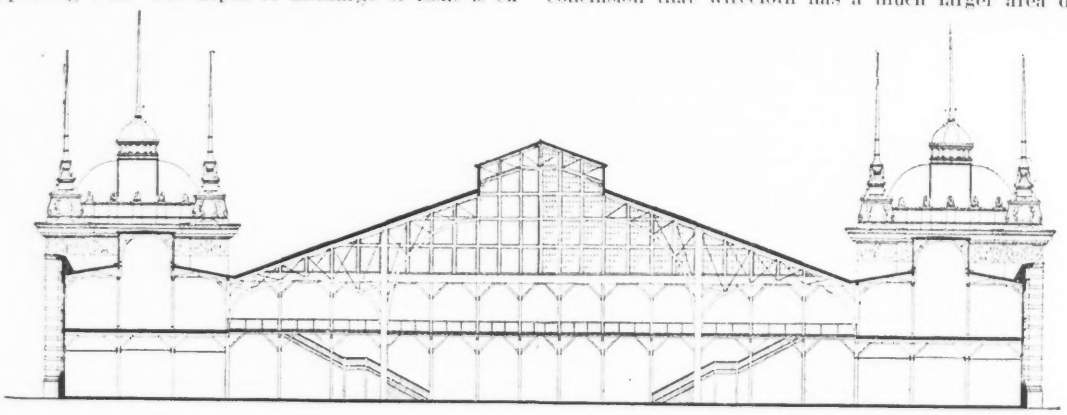
In the matter of the issue or depth of discharge there is that wide variation usually to be remarked in most of the colonial mills. It is a feature of milling the importance of which is too little appreciated all the world over. At the Britannia United and New Normanby mills there is an effort made to prevent too great a variation in the issue as the dies wear down, but at the North Cornish the difference is between zero and 3 in. The effect of a shallow discharge is seen at the Britannia United, which, notwithstanding a much slower speed, has a relatively higher crushing capacity than the Star of the East.

The gratings or screens are all made of the same material, round punched Russia iron. The coarsest sizes are naturally in use at the New Normanby and the Britannia United, the two mills whose ore carries the coarsest gold and in the most "free" condition. The North Cornish uses the finest grating, since the gold of the ore which it treats is the most intimately associated with the pyrites.

In the matter of screens the colonial mills have been keeping to that "follow my leader" policy which is the keynote to all that is deficient in their modes of milling. A little consideration will lead one to the conclusion that wirecloth has a much larger area of discharge than punched iron, having openings of equivalent size. Actual practical tests have confirmed this deduction. The crushing capacity of many of the Ballarat mills would be increased 10 to 20% by the use of wirecloth gratings, and the amalgamation would be in no way altered or decreased. The little extra cost is much more than compensated for by the larger amount of ore which can be treated. The full benefit of the change can be best obtained by having a double set of gratings, so that while one set is in place in the battery the other can be dried and cleaned with wire brushes.

In the matter of concentrates it will have been remarked that the New Normanby ore carries no pyrites worthy of concentration, that the Britannia United mill obtains only 1%, and even that is of comparatively low grade, while the North Cornish, which has much the most refractory ore, has also the richest concentrates. It should be added, however, that the closer work done by the Frue vanners as compared to that of the ordinary percussion tables at the Britannia United assists in keeping up the grade of the concentrates obtained at the former mill. The fineness of the bullion tells the same story as the concentrates, that of the Ballarat mills being of unusual purity and better than that of the Daylesford mill. The retort percentage indicates more accurately than any of the other figures the character of the ore as regards the coarseness of the gold which it carries. Thus the New Normanby amalgam yields 70% of bullion, while the North Cornish produces the more ordinary proportion of 33%.

The time of wear of the screens or gratings is very similar in the first four mills, but at the North Cornish it is decreased to nearly one-half. The explanation is not far to seek. It is to be found in a very shallow, but variable, depth of discharge. When new dies have just been placed in position the top of them is level with the bottom of the screen and the direct splash of the pulp is, of course, violent. From the standpoint of economy this is a mistake. From the point of view of the proper treatment of the ore it would certainly be well to make an effort to regulate the issue and to keep it more uniform. At present it varies from zero to 3 in. It is probable that the extraction of the gold would be benefited by leaning rather toward the greater than the lesser depth of discharge. At the Britannia United the average depth of the issue is no greater, but the variation is between 1 in. and 2 in. This explains why the gratings, assisted by the fact that they are also less fine, have a time of wear double that at the North Cornish.



* Near the famous Canadian lead, which yielded so many of the large nuggets.

† For the half-year ending December 31st, 1890, there were 14,661 tons crushed, yielding: 4,386 oz. 18 dwts. in the mill, and 1,486 oz. 5 dwts. from the 269½ tons of pyrites (concentrates) treated at the chlorination works.

‡ Up to the end of 1890, on a paid-up capital of only £4,000 this property has paid dividends amounting to no less than £85,500.

The consumption of mercury is much less at the New Normanby and Britannia United mills than at the other three, because these two treat ore containing a minimum percentage of sulphurets, and because, therefore, the crushing is less fine. The amount of water used depends upon the grade of the amalgamating tables, itself proportioned to the heaviness of the pulp. It is also largely dependent upon the extent of blanket surface. The North Cornish uses much less water than the others, because the blankets, being followed by Frue vanners, are shorter than at the other mills where simple percussion tables are used.

The consideration of the methods of this district lead one to the conclusion that the mills are not availing themselves as they ought to, and as was to have been expected from so energetic and so productive a mining center, of the improvements brought into successful practice during the last decade. At Ballarat there is neither want of capital nor an inadequate ore supply to excuse the miserable incompleteness of the mills, in so far as concerns appliances and arrangement having in view the automatic handling of the ore. For mining companies like the Star of the East and the North Cornish, both owning magnificent mines paying large and regular dividends, and possessing very considerable ore reserves, there can be no excuse for the non-employment of rock breakers, ore-feeding machines and a proper and adequate concentrating plant. They stand as monuments of what should be more truly called obstinate ignorance and perverse disregard of modern experience than dignified by such a word as "conservatism." It is very regrettable that for reasons, all of them illogical and untenable, the mills of such an important mining district should be so out of date and so incomplete.

In conclusion, therefore, it must be said that while the actual mill work is excellently well carried out the mills of Ballarat are woefully behind the ideal both in that handling of the ore which immediately precedes stamping and in that after-treatment which succeeds amalgamation.

THE BESSEMERIZING OF COPPER MATTE AND PRODUCTION OF PIG COPPER.*

By Charles Wade Stickney, A. B., M. E., Mem. Am. Inst. Mining Engineers.

(*Concluded from page 392.*)

The use of a double set of converters, the preparation of one while its mate is running, the opening of the converter for relining and the handling of it by a crane are great advantages, but they are partially offset by several disadvantages in the practical method of carrying the idea out. The use of cast iron is of no advantage; on the contrary, it makes the converter heavy and unwieldy, and the great mass of metal absorbs a great quantity of heat, thus prolonging both the cooling and reheating operations. Again, the cast iron cracks very soon in every conceivable direction, and frequently two weeks' service will find several bolt holes cracked out. Occasionally, however, one will be found to stand the wear very well. The work of separating the parts, seemingly so simple, is sometimes very arduous, for the reason that the lining bakes together at the junction, becomes continuous, and of a stone hardness. When the bolts are removed, the parts refuse to budge, and much time and hard work are consumed in prying the sections apart, to the frequent injury of the converter. The method of cooling by an air blast is not so expeditious as that described below. Making the converter in three sections instead of two is worse than useless. More time and strength are expended in separating the lower sections than any advantage gained, and hence it is rarely done. The construction of the two lower sections would better be in one section and of a different shape to facilitate the extraction of the old hard-baked lining, the most serious work encountered in handling the process. Below will be found a suggestion upon this subject.

The writer believes that this process may be made more productive, at less expense, by certain changes in the machinery used, and in the method of handling it. The most obvious drawbacks at present are: (1) The waste of heat in cooling the matte and again remelting it; (2) the short life of the lining, with the attendant necessity of cooling the converter and heating it up again; (3) the length of time required to cool converter; (4) the difficulty of separating the parts when held together by the hard baked lining; and (5) the great amount of hard labor required to extract the old lining.

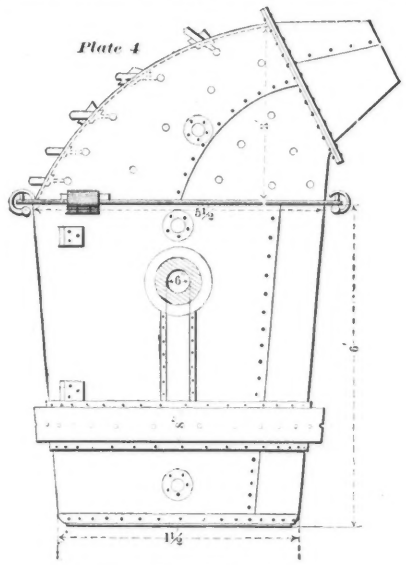
By arranging the blast furnace on an elevation above the remelting furnace, the necessity of much handling of the matte will be avoided. In such a case the matte may be run into small molds the size of bricks, arranged in gangs on one base, and, as soon as they are cooled enough to set, they may be shot down an incline to a small iron bin, which has a small opening opposite and quite near to the feed door of the re-melting furnace. From this bin the cupola man will feed. The mass of matte will therefore enter this furnace at a little less than melting heat. If the blast is at any time producing more matte than is needed at the re-melter, the overplus may be allowed to cool, and, being dumped into another bin, it may be used whenever the blast is producing less than the remelter requires. In this way a large amount of fuel, probably one-third of that now used, may be saved. It must not, however, be forgotten that the temperature of the matte as it enters the converter must be considerably higher than when it leaves the blast furnace, and hence the remelting furnace cannot be done away with.

The duration of the lining may be greatly prolonged by placing an iron hopper with an air tight cover above the trunnion of the converter, forming a communication between the hopper and the blast pipe by a vertical pipe entering the blast pipe at a point near its entrance to the converter. The vertical pipe should have a gate easily closed and opened by the workmen below. The hopper may be filled with perfectly dry and powdered quartz, or with any powdered quartz ore containing no metals except gold and silver. A very small percentage of copper might not be detrimental. By a judicious regulation of the quantity turned into the blast pipe, so that the quantity shall be slightly below the needs of the oxidizing iron in the matte, the lining will be called upon for but little silica, and its life will thus be very greatly prolonged.

The converters may be cooled very much more quickly than is possible by any present or past practice, so far as known to the writer. Air, at the ordinary temperature of the converter building, takes up heat very slowly, and water is a nuisance, when used in bulk. The rapidity with which a cold water mist takes up heat suggests its suitability here. By introducing a small air blast pipe into a water supply pipe near its extremity, and thrusting both through the trunnion into the hot converter, a fine cold mist will fill the interior, and, taking up heat rapidly, issue from the mouth as steam. By keeping the converter placed mouth downward when it gets too cold to produce steam the water will run out, if any should form from the cold mist.

But a more expeditious method of handling this part of the process, obviating the cooling and picking out of the old linings, is to use a differently constructed converter, as illustrated in Plate 4. The converter is made entirely of $\frac{3}{16}$-in. steel boiler plate riveted; the body is made in one piece and the hood in another, these two parts being separable by driving out wedges from dogs on the outer rim. The main body tapers downward about an inch to the foot. A false bottom and sides are made in pieces of $\frac{1}{4}$-in. sheet iron, somewhat similar to the head and staves of a barrel. The hood is made of the same material, but has no false lining. There are pins, however, near the lower edge of the hood, and at intervals over the inside. These pins are kept in place by a small shoulder inside, and by a wedge on the outside which fits into a slot in the part of the pin projecting through the converter shell. These pins take the place of the catches referred to in the description of the former construction and hold the overhanging roof of the converter in place. When it is desired to remove the lining the outside wedges can be quickly driven out, and the pins driven inward through the lining.

The lining is put in place in the following manner. The false bottom and sides are first polished with graphite and placed in position. The bottom is pounded hard with lining composition to a depth of 18 in. A kettle, which has been made of $\frac{1}{4}$-in. boiler iron, $2\frac{1}{2}$ ft. diameter on the bottom, 4 ft. high, expanding at a somewhat greater rate than the converter shell and perfectly smooth on the outside, with handles at the top, is set on the pounded quartz bottom exactly in the center of the converter, and



Stickney Improved Converter
$\frac{3}{16}$" Steel Plates
Removable, Separable, 2 Parts, Taper Body,
False Sides & Bottom, Removable Catch Pins.

the lining is then shoveled in and pounded hard around it. Afterward the kettle is lifted out by a crane and a cavity is left in the center of a strong wall lining about 15 in. thick at the bottom and 12 in. at the top. This wall extends up flush with the top edge of the main body. The top of the wall all around is then sanded with fine dry sand. The hood, having its pins in place, is turned hollow side up, and is plastered with the lining composition to a depth of 12 in. at the edge, and gradually diminishing to 3 in. around the mouth. The hood is then picked up by the crane, turned upright, and placed on the body. The flanged edges are secured together by dogs and wedges, and, after being heated, the converter is picked up by the crane, landed on the carriage and rolled to its place.

When relining is necessary, the converter is again landed on the floor, and the hood detached by knocking out the wedges. The sanded junction in the wall gives a line of easy breakage. If sand is found not to give an easy enough cleavage line, powdered graphite may be used. The crane lifts the hood and places it upright on an iron frame, 3 ft. high and hollow beneath. The pin wedges are knocked out, and the pins driven inward through the lining, with a heavy sledge. The lining is thus broken up and removed. It may be remarked, however, that the hood lining wears a long time and its renewal is required much less often than that in the body. Its removal, however, is necessary when it builds up and chokes the converter.

The body is now seized by the crane, and first turned on its side, and then turned completely upside down, and suspended 1 or 2 in. from the floor. If the whole lining, with the false sides and the bottom together, does not drop out, a few taps on the sides will produce this result. The side and bottom pieces are easily detached separately by jarring, and then the whole lining may be picked up by the crane and placed in an iron mortar, to be broken up by a heavy chunk of iron being dropped on it. The unburned pieces may then be returned to the quartz pan for re-grinding and mixing with new composition. The pieces badly coated and impregnated with copper should be sent to the blast furnace.

The time and labor saved by this construction of converter and its manipulation can hardly be estimated by one who has not witnessed the

* From the "Mineral Industry: Its Statistics, Technology and Trade for 1892." Copyrighted by the Scientific Publishing Company, New York.

daily struggles of workmen with hard baked linings in the old styles of converters. By dumping the old lining while hot no time need be lost in cooling by any system, as the thin steel shell may be sprayed and cooled sufficiently for relining in a very few minutes.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

United States Circuit Court of Appeals.—Ninth Circuit.

Mines and Mining—Width of Claim—Validity of Patent—Landlord and Tenant—Estopped to Deny Title.

In error to the Circuit Court of the United States for the Northern District of California. Action of ejectment in Lakin vs. Roberts et al.

1. Under Revised Statutes (U. S.) Sec. 2320, a patent cannot be issued for a mining claim exceeding 300 ft. in width, although the original location was wider, and was made under the law of July 26th, 1866, by which the width of claim was regulated according to the custom of miners; and when a patent is issued for the full width of such a claim it is void as to the excess, and Revised Statutes, Sec. 2328 cannot be construed to preserve a right to the issuance of a patent covering the full width of the original location.

2. In an action of ejectment by the patentee of a mining claim, where it appears from a stipulation agreed upon by both parties that certain defendants, after the date of the patent, paid a small sum as rent for the privilege of occupying the premises, and it does not appear under what circumstances, nor for what premises, nor for what time, such payment was made, the relation of landlord and tenant is not established so as to estop defendants from denying patentee's title.

Judgment of Circuit Court affirmed. Opinion—McKenna, Circuit Judge. January 30th, 1893.

Treasury Department.

Sampling of Imported Ores.

In the case of ore imported in bags, every tenth bag must be emptied and examined, and ore in bulk on the cars must be carefully tested down to the bottom of the lot.—Treasury Department, Secretary's decision, March 7th, 1893.

Drawback on Litharge.

On the exportation of litharge manufactured by Chadwick Lead Works, Boston, Mass., wholly from pig lead a drawback will be allowed equal in amount to the imported lead used in the manufacture, less the legal deduction of 1%, and the quantity of lead so used shall be determined by allowing 93 lbs. of lead for each 100 lbs. of imported litharge, the net weight thereof to be determined by a United States weigher.—Treasury Department, Secretary's decision, March 13th, 1893.

Supreme Court of Pennsylvania.

Construction of Wills—Coal Mining Rights.

Where a testator devised a parcel of his land to his son, to be enjoyed by him, his heirs and assigns, forever, with free privilege to take what coal he wanted for his own use or plantation of the home plantation; the land devised and the home plantation were both underlain with coal, but the latter, only, had a mine in operation. The privilege of taking coal from the home plantation was personal to the son, and did not descend to his heirs—Youghiogheny vs. Pierce, Supreme Court of Pennsylvania, January 30th, 1893, 25 At. Rep. 1026.

Supreme Court of North Carolina.

Forfeiture of Mining Lease.

Where an agreement is made for a mineral interest in a certain tract of land for a term of years with the privilege of wood and water for mining purposes, imposing upon the lessees the duty of developing, testing and operating for minerals in a reasonable time, and the lessee agrees to pay one-tenth on the mineral that may be obtained, and to forfeit the lease if he fails to comply with his contract, the lessee could not continue to hold the lease without making any effort to mine for the minerals, as it would prevent the lessor from getting his tolls under the agreement, and deprive him of all opportunity to work the mine himself or permit others to do so.—Maxwell vs. Todd.—Supreme Court of North Carolina, 16 S. E. Rep. 926.

The Preparation of Pure Bismuth.—The only impurity contained in the bismuth used for pharmaceutical purposes is tellurium, and users of bismuth for medicinal preparations have been complaining of late. Messrs. Johnson, Matthey & Co., of London, who refine practically the whole of the bismuth used in England, state that there is no suitable or economical method of removing this impurity. They at present remove the gold, copper, lead, arsenic, and antimony. The two latter are removed by smelting the crude metal and allowing the fused mass to remain at a temperature about 513° C. The arsenic slowly volatilizes at this temperature, as also does the antimony at a temperature of 458°.

The Leblanc Process in Russia.—At a meeting of the Society of Chemical Industry held in London, April 10th, Mr. Bowman gave some particulars of the only Leblanc chemical works in Russia. The difficulties met with there were due chiefly to the extremely low temperatures in winter. At first the bleaching powder produced was found to be too strong in winter and unstable in summer, and the defect was only remedied by the introduction of a complicated system of steam pipes into the absorption chamber. The workmen wear a species of diving dress that is quite peculiar to these works. It consists of a leather jacket and helmet fitting tightly about the waist and wrists. The interior is supplied with air through a tube in the top of the helmet and the vitiated air is removed through a tube that leaves the helmet just in front of the mouth of the wearer. An ordinary blacksmith's bellows is used for supplying a current of air. The fuel employed at the works is naphtha residue from the petroleum fields of Baku.

VALVE FOR REGULATING WATER PRESSURE.

The accompanying illustration shows a valve intended to regulate the pressure of water passing through a pipe, which is described in a recent number of "Le Genie Civil." It is the invention of MM. Samain and O. Andre, engineers, of Paris. The regulation of water pressure in this way has not usually been considered practicable, owing to the incompressibility of the fluid and the peculiar ramming effect of a column of water, but the present device, it is stated, works in a satisfactory way. The illustration shows a cross-section of the valve.

In the cylinder E is placed a piston P with leather packing; the piston ends in another piston p, of smaller diameter, which works in a closed cylinder e. This cylinder is pierced at O O by a ring of small holes. The large piston P is held down by a spring R, the tension of which can be regulated by the screw C. The water which might collect under the small piston p is carried off by a small channel made in the piston rod. The current from above enters at A', fills the chamber M, passes the holes O O, and runs into the chamber N to flow out in A. If we suppose that the spring R has been adjusted to counterbalance a column of water of 20 metres head, the piston P will remain at the bottom of its stroke, and the water will flow through freely. If the pressure increases beyond the amount fixed the piston P will be raised, and will raise also the small piston p; the latter will close the openings O O, and the entry of water into the chamber N will be stopped. The spring will then act on the piston, and the flow of water will be resumed. The action takes place so quickly that it can hardly be perceived.

The use of this valve permits the regulation of the flow of water, diminishing the wear of pipes and valves, and also saving water. The regulation of pressure will be of especial use in certain cases, where a regular and steady flow is needed, as in some chemical and sanitary operations. It would also, in many cases, make possible the use of lighter pipes where economy is a special object.

THE ELECTROLYTIC MANUFACTURE OF CAUSTIC SODA AND BLEACH.*

We have from time to time given accounts of the various attempts to manufacture caustic soda by electrolysis, and have pointed out what we considered the chief obstacles to success. Among these the gravest was, in our opinion, the corrosion of the anode. Messrs. Richardson and Holland, of the Electrolytic Caustic Soda and Chlorine Trust, Limited, have attacked this difficulty in a very practical manner, and have, we believe, overcome it to all intents and purposes. Instead of trying to produce or discover some form of carbon which will not disintegrate when used as an anode, they approached the difficulty from another direction and looked for the cheapest possible form of anode. This they found in gas retort carbon in the crude form in which it is obtained from the gasworks. These pieces of retort carbon have two saw cuts made in them at one end, and are then cast into leaden backs. They are thus held in lead. The anodes are so arranged that the lead does not enter the liquid, so that it is not eaten away—chlorine gas having little corroding action on it. These anodes are very cheap, as retort carbon is almost a waste product, and the lead can be used over and over again. The cost of renewal of anodes of this description is very trifling. Messrs. Richardson and Holland are therefore to be congratulated on having overcome the great obstacle to success.

The Electrolytic Caustic Soda and Chlorine Trust have erected model works at Snodland, Kent, England, which are large enough to demonstrate the manufacture of caustic and bleach on a commercial scale. The plant consists of a 50 H. P. engine and dynamo. With these we are not concerned in the present case, as the efficiency of engines and dynamos is well known already. The dynamo gives 80 volts, and the circuit is led to the vat-room, the vats being connected in series. A pressure of six volts is allowed for each vat, which is somewhat high, but experience at Snodland has led to the adoption of that figure. The vats are made of slate. The anode chambers are closed with slate lids, with the lead backing of the anodes attached to the lower side by bolts passing through the lid, which also make the circuit. The cathode chamber is open to the air. There is no porous partition, the side of the anode chamber being merely carried down a little way into the liquid. The inventors consider this point of great value, on account of the saving of the resistance due to the porous diaphragm generally used.

The vats are of such a size that with six volts pressure the liquor gains 1% of caustic per day. It is generally run off at 4%. The chlorine is led off and is conducted to milk of lime agitators, where it is absorbed, and to an ordinary bleach chamber. The milk of lime is best when the bleach is to be used at once, as at Snodland, where it is supplied to a large paper mill close to the works. The bleaching chamber is used to demonstrate the manufacture of ordinary bleaching powder. The caustic liquor, which still contains a large amount of salt, is evaporated down. The salt crystallizes out, and is sent back to the vats again. The caustic made by this process is entirely free from sulphate and carbonate, and practically free from chloride.

The syndicate have secured the services of an experienced alkali manager, Mr. J. Leith, and have given him charge of the works. Mr. Leith, we are informed, makes the process give a balance of 46% above labor and material on a small scale at Snodland, where coal is 11s. per ton, and salt and lime 20s. per ton, and with an old and obsolete type of engine. In an alkali district, where coal, salt, and lime are cheaper, and with an efficient generating plant, he estimates the balance at 265% above prime works cost. This is, of course, an enormous margin, and shows that those who take up the manufacture of electrolytic soda at once may be able to make enormous profits before the price comes down.

The illustrations, Figs. 1, 2 and 3, represent sectional views and a plan respectively of one of the vats.

We hear on good authority that Messrs. W. T. Gibbs & Co. have recently purchased a water-power at Ottawa, estimated at 15,000 H. P.,

* From the London "Industries."

which will be used entirely for electrolytic processes. We believe it is intended, among other things, to manufacture chlorate of potash, caustic potash, and bleaching powder, a good share of which is intended for export. It is also currently reported that Mr. John Brock and Dr. Ferd. Hurter are about to proceed to the United States to critically examine the Le Sueur process and its merits.

Coal Mining Accidents.—The Pottsville correspondent of the Hazelton "Sentinel" has had the patience to make a list of the mine accidents in the counties of Luzerne, Schuylkill, Carbon and Northumberland since 1867. Since that time there have been 4,763 deaths due to mining, and 1,820 which may be classed as due to railroad work, a total of 6,580. Of this number 4,218 were men over 21 years of age, and 3,310 were married.

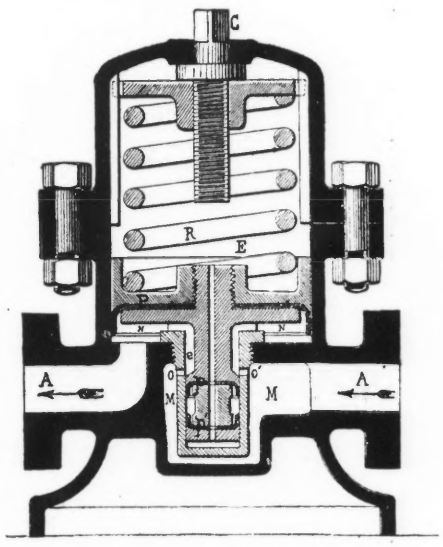
The perils of mining have been greatly diminished within the last few years, but they still call for increased vigilance, the use of all possible safety appliances, and, above all, the employment of intelligent, trustworthy men in positions of responsibility.

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 APRIL 19TH, 1893.

7,302 of 1892. Refining Iron by Blast of Ozonized Air. A. Turner and M. B. Baird, Glasgow.
8,478 of 1892. Coal Washing Plant. W. O. Wood and C. Burnett, South Hetton, Durham.
8,533 of 1892. Discharging Apparatus for Coke Ovens. R. de Soldenhoff, Cardiff.
9,132 of 1892. Welding by Electric Arc. H. Howard, Birmingham.
9,359 of 1892. Explosive Composed of Chlorate of Potash, Cellulose and Starch. J. G. Lorrain, London (G. Schnebelin, Paris).
70 of 1893. Miner's and other Picks, with Renewable Points. W. K. Birkinshaw, Derby.



WATER PRESSURE REDUCING VALVE.

FIG. 1.

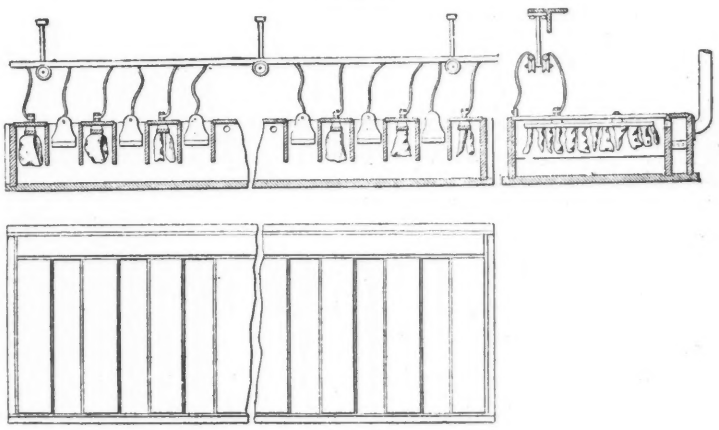


FIG. 2.

FIG. 3.

VAT FOR ELECTROLYTIC SODA PROCESS.

499 of 1893. Producing Pure Nickel Sulphide. W. P. Thompson, Liverpool (Robert M. Thompson, New York).
3,747 of 1893. Electric Refining of Copper. M. Perreur-Lloyd, Paris.

WEEK ENDING APRIL 26TH.

6,799 of 1892. Refining Copper by means of Hydrocarbon. J. C. Bull, London.
7,235 of 1892. Electric Coal Cutting Machines. R. J. Charlton and H. Walker, Newcastle-on-Tyne.
7,758 of 1892. Refining Pig Iron. H. Höfer, Hagen, Westphalia, Germany.
8,079 of 1892. Bucket Chain for Elevating Coal. D. Westlake, Swansea.
9,234 of 1892. Centrifugal Ore Concentrator. J. A. Mays, London.
9,730 of 1892. Miners' Safety Lamps. O. T. Christie and W. Paulson, Nottingham.
10,206 of 1892. Gas Heated Furnaces. J. E. Dowson, London.
11,030 of 1892. Rolling Composite Metal Plates. F. C. Glaser, Berlin.
15,976 of 1892. Pulverizing Cylinders. J. R. Alsing, London.
18,418 of 1892. Coal Washing Machinery. G. E. Allen, Maryport.
498 of 1893. Separating Pure Sulphide of Nickel from Copper and other matter. J. L. Thomson, New York.

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, APRIL 25TH, 1893.

495,989. Method of Welding Metal. Arthur J. Moxham, Johnstown, Pa.
495,992. Windmill and Pump Regulator. Philip A. Myers, Ashland, O.
496,019. Electric Soldering. Elihu Thomson, Lynn, Mass., Assignor to the Thomson Electric Welding Company of Maine.
496,032. Process of Smelting Ores and Refining Metals. Charles M. Allen, Butte, Mont., Assignor of one-half to William J. Chalmers, Chicago, Ill., and Lamartine C. Trent, Salt Lake City, Utah.
496,033. Converter. Charles M. Allen, Butte, Mont., Assignor of one-half to William J. Chalmers, Chicago, Ill., and Lamartine C. Trent, Salt Lake City, Utah.
496,034. Tuyere. Charles M. Allen, Butte, Mont., Assignor of one-half to William J. Chalmers, Chicago, Ill., and Lamartine C. Trent, Salt Lake City, Utah.
496,084. Rolling Mill. Charles L. Fitzhugh, Allegheny; John Z. Speer, and Seward S. Babbitt, Pittsburg, Pa.
496,089. Sectional Steam Boiler. William M. Mackay, Newark, N. J., Assignor to the Richardson & Boynton Company, New York, N. Y.
496,092. Hot Blast Stove. George W. McClure and Carl Ansler, Pittsburg, Pa.
496,109. Process of Manufacturing White Lead. Arthur B. Browne, Cambridge, Mass. Assignor by mesne assignments to the American Lead Company, Kittery, Me.
496,126. Storage Battery. Frederick A. La Roche, Philadelphia, Pa.
496,153. Sectional Steam Boiler. Godfrey Engel, South Baltimore, Md.
496,167. Machine for Shearing Metal. Daniel McGarry, Pittsburg, Pa.
496,205. Process of Manufacturing Oxide of Zinc Pigments. Carl V. Petræus, Joplin, Mo., Assignor to Oliver H. Picher, same place.
496,208. Process of and Apparatus for Tempering or Hardening Steel Wire. Henry E. Procunier, Oak Park, Assignor to the American Spring Company, Chicago, Ill.
496,236. Cable Railway. John B. Smithman, Oil City, Pa.
496,250. Apparatus for Reducing and Smelting Sulphide Ores. Augustus L. Engelbach and Sidney E. Bretherton, Leadville, Colo.
496,316. Hole Straightener. Patrick H. Mack, Bradford, Pa.
496,317. Enlarging Under-Reamer for Oil or Artesian Wells. Patrick H. Mack, Bradford, Pa.
496,323. Bailer for Oil or Artesian Wells. William Plotts, Mount Jewett, Pa.
496,329. Telpher System. Charles J. Van Depoele, Lynn, Mass. C. A. Coffin and Albert Wahl, administrators of said Van Depoele, deceased. Assignors to the Thomson-Houston Electric Company, Boston, Mass.
496,337. Roll for Rolling Wear Plates. James Churchward, Brooklyn, N. Y.
496,384. Furnace. William McClave, Scranton, Pa.

TUESDAY, MAY 2, 1893.

496,391. Gold Separator. Albert M. Blair, Littleton, Colo.
496,395. Manufacture of Guns. John H. Brown, New York, N. Y.
496,427. Electrically Operated Overhead Traveling Crane. William H. Morgan, Alliance, O., Assignor of three-fourths to Thomas R. Morgan, Sr., Thomas R. Morgan, Jr., and John R. Morgan, same place.
496,428. Locomotive Crane. William H. Morgan, Alliance, O., Assignor of three-fourths to Thomas R. Morgan, Sr., Thomas R. Morgan, Jr., and John R. Morgan, same place.
496,430. Locomotive Jib Crane. William H. Morgan, Alliance, O.
496,432. Magnetic Crane. William H. Morgan Alliance, O.
496,433. Pillar Crane. William H. Morgan, Alliance, O.
496,445. Gas Burner for Furnaces. James S. Rogers, Saratoga Springs, N. Y.
496,490, 496,491. Rolling Machine. Aaron B. Shippee, Providence, R. I., Assignor to Albert W. Chapman, same place.
496,523. Hydrocarbon Vaporizer and Burner. Joseph H. Mathews, Canton, O.
496,546. Process of and Apparatus for Recovering Carbon Dioxide. Walter Walker, London, Assignor to Dan Rylands, Limited, Barnsley, England.
496,567. Utilizing Electric Motors for Operating Machinery. Carl Hoffman and Ernst Richter, Berlin, Germany, Assignors to Siemens & Halske, same place.
496,593, 496,594. Electric Forge. George D. Burton, Boston, Mass., Assignor to the Electrical Forging Company, of Maine.
496,615. Apparatus for the Manufacture of Salt. Mauricio M. Monsanto, New York, N. Y. Emma M. Monsanto, administratrix of said Mauricio M. Monsanto, deceased.
496,672. Dumping Car. William A. Thacher, New York, N. Y.
496,687. Process of Treating Phosphates. Phillip C. Hoffman, Baltimore, Md., Assignor to the American Phosphate and Chemical Company, same place.
496,736. Construction of Ingot Molds. Charles Hodgson, Middlesbrough, England, Assignor to himself and John Hill, same place.
496,775. Electric Forge. George D. Burton, Boston, and Edwin E. Angell, Somerville, Mass., Assignors to the Electrical Forging Company, of Maine.
469,806. Furnace. Joseph W. Wilkinson, Des Moines, Ia., Assignor to Robert Dempster, same place.

DIVIDENDS PAID BY MINING COMPANIES DURING APRIL, 1893.

NAME OF COMPANY.	Paid in April.	Paid since Jan. 1st.	NAME OF COMPANY.	Paid in April.	Paid since Jan. 1st.
Alaska, Tr'dw'll, Alaska	$50,000	$125,000	Lexington, Colo.	3,000	12,000
American Turquoise	.....	60,000	Maid of Erin, Colo.	150,000	150,000
Belden Mica, N. H.	5,000	20,000	Mayflower Gravel, Cal.	10,000	40,000
Bimetallic, Mont	40,000	160,000	Minnesota Iron, Minn.	210,000	420,000
Centennial-Eureka, Utah	22,500	67,500	Mollie Gibson, Colo.	150,000	600,000
Champion, Cal.	3,400	13,600	Morning Star D., Cal.	7,200	28,800
Colorado Central, Colo.	13,750	27,500	Napa Cons., Cal.	20,000	40,000
Colorado Fuel Co., Colo.	....	67,120	North Star, Cal.	.....	50,000
Cons. New York, Nev.	.....	10,000	Pacific Coast Borax	.....	15,000
Copper Queen, Ariz.	.....	100,000	Parrott, Mont.	18,000	72,000
Daly, Utah.	37,500	150,000	Pharmacist, Colo.	.....	24,000
De Lamar, Idaho.	150,000	250,000	Plumas, Eureka, Cal.	26,367	26,367
Elkhorn, Mont.	.....	87,500	Quincy, Mich.	.....	150,000
Enterprise, Colo.	25,000	100,000	Red Cloud, Idaho.	.....	10,000
Golden Reward, S. Dak.	5,000	20,000	Seven Stars, Ariz.	.....	97,500
Great Western Quicksilver, Cal.	12,500	50,000	Sierra Butte, Cal.	15,313	15,313
Hecla Con., Mont.	15,000	60,000	Standard, Cal.	.....	10,000
Homestake, S. Dak.	12,500	50,000	Trinity River Hydraulic, Colo.	2,500	7,500
Hope, Mont.	25,000	100,000	Utah, Utah	.....	5,000
Horn Silver, Utah.	.....	50,000	Victor	10,000	30,000
Idaho, Cal	7,750	31,000	W. Y. O. D., Cal.	3,000	12,000
Kennedy, Cal.	.....	50,000	Total	1,050,280	$3,444,700

PERSONALS.

Mr. F. E. Bachman has resigned his position as manager of Salem furnace at Salem, Va.

Mr. Ralph Modjeski, C. E., has removed his office in Chicago to room 769 Monadnock Building.

The office of Messrs. Handy & Harman has been removed to the Mutual Life building, No. 32 Nassau street, New York.

Mr. A. P. Hepburn, formerly Comptroller of the Currency, has been elected president of the Third National Bank of New York.

Mr. Frank Nicholson is now general manager of the Little Fannie Mine at Cooney, N. Mex., which has been leased by himself and some friends.

Col. Henry T. Douglas, formerly of the Baltimore & Ohio, has been appointed chief engineer in charge of the new topographical survey of the city of Baltimore.

Maj. Henry Fulton, mining engineer, of Boulder, Colo., is at present at Michigan University, at Ann Arbor, where he is engaged in some professional work in electricity.

Mr. Julian Kennedy, the well known consulting engineer of Pittsburg, recently delivered a lecture on "Modern Steelmaking" before the students of the Western Pennsylvania University.

Mr. W. D. Rees, president of the Republic Iron Company, has been appointed also treasurer of the Lake Superior Iron Company, succeeding Mr. Joseph S. Fay, who retires from active business.

Prof. Charles E. Wait, now of the University of Tennessee at Knoxville, and formerly of the Missouri School of Mines, has been elected a Fellow of the Chemical Society of London, a well merited honor.

Mr. Walter S. Church, of New York, formerly engineer of the Croton Aqueduct, has gone West for a time on professional business. His address for the present is Dubois, Fremont County, Wyoming.

Mr. Joseph S. Harris, the new president of the Philadelphia & Reading Company, has been appointed one of the receivers of the road also, in place of Mr. A. A. McLeod, who has been relieved by the court.

Mr. Stephen Noble, who has occupied the position of general manager of the Woodstock Iron Company for the past two years, has resigned and has purchased an interest in the Jenifer furnace, about 10 miles south of Anniston, Ala.

Mr. Francis T. Freeland has been appointed manager of the Aspen Contact and Bimetallic Mining Company at Woody Creek, near Aspen, Colo. He has been for 12 years past a resident of Leadville, and was at one time superintendent of the Iron Silver.

Mr. George E. Webber, Jr., has resigned his position as manager of El Callao mines, in Venezeula, and will go to South Africa to take charge of the property of the Deep Levels Mining Company. Mr. Barry Searle succeeds Mr. Webber as manager at El Callao.

The family of the late Prof. John Strong Newberry, formerly professor of geology in the School of Mines, have offered as a gift to Columbia College his large scientific library. The collection will be known as the Newberry Library of Geology as a memorial to Professor Newberry.

The Spanish Cortes can show probably as large a proportion of mining engineers among its members as any legislative assembly of equal importance. Four of its members belong to that profession, Senors Juan Garcia del Castillo, Luis Villanova de la Cuadoa, Lorenzo Martinez and Eduardo Gullin.

Col. George H. Mendell, Lieut.-Col. William H. H. Benyaurd and Maj. William H. Huer, all of the Corps of Engineers, have been appointed commissioners under the act of Congress to create the California Debris Commission and regulate hydraulic mining in California, generally known as the Caminetti bill.

Mr. Robert T. Frazier has been appointed manager of the Washington office of Howson & Howson, patent solicitors. He is a graduate of the Naval Academy at Annapolis, and has had an experience of five years as examiner in the Patent Office, having been promoted to the position of principal examiner.

Through a misunderstanding it was stated in the "Journal" of April 15th, that Prof. C. M. Fassett was in charge of the mineral exhibit of the State of Washington at Chicago. Mr. Leonard Singer has been and is superintendent in charge of that exhibit, and has shown much energy and good management in its preparation and arrangement at the Exposition. Professor Fassett has charge of one department only.

Mr. R. Konda, mining engineer of the Imperial Japanese Household Department, arrived at San Francisco by the "Belgic." It is his purpose to look after the interests of his government in connection with the mining industries department of the World's Fair, and later to make a tour of the United States to inspect the principal gold, silver and copper mines, and obtain information of a technical nature likely to be of benefit in developing the mineral resources of Japan.

Mr. Frederick A. Scheffler has been appointed general sales agent of the Stirling Company, manufacturer of the Stirling water-tube boiler, and will have his office at No. 74 Cortlandt street, New York. Mr. Scheffler is well and favorably known; he was recently superintendent of the Brush Electric Company's works at Cleveland, O., and was formerly with the Westinghouse Electric Company in Pittsburg, and the Erie City Iron Works as superintendent.

Mr. John Fritz, of the Bethlehem Iron Company, has been awarded the Bessemer gold medal by the Iron and Steel Institute of Great Britain. This medal is given from a fund founded by Sir Henry Bessemer, and is awarded each year for distinguished services to the iron and steel industry. It is considered a high honor, but Mr. Fritz has fully deserved it. Among Americans who have received this medal are Mr. Abram S. Hewitt and the late A. S. Holly.

OBITUARY.

William Bryham, prominently connected with coal mining in England, died April 9th.

J. R. Hewitt, civil and mining engineer of Alvaston, England, died at that place March 27th.

William H. Phillips, proprietor of the Taunton Iron Works, Taunton, Mass., died suddenly at his residence in that city, April 23d.

J. Henry Stickney, a well known, retired iron merchant of Baltimore, Md., and the founder of the Stickney Iron Company, died May 3d, aged 81 years. Death resulted from prostration, due to an attack of the grip.

Samuel McHose, who died in Allentown, Pa., April 21st, aged 78 years, was for many years a successful builder and contractor. He built nearly all the blast furnaces in the Lehigh Valley and also several in New Jersey, and very few persons had more experience in that particular line.

Robert Patterson, a member of the firm of Hughes & Patterson, iron manufacturers, died in Philadelphia, April 19th, after a short illness. Mr. Patterson was born near Collegeville, Montgomery County, and was 73 years of age. He went to Philadelphia when about 21 years of age as a clerk in the Fairhill Rolling Mills. It was while thus engaged that he met Mr. Hughes, and the two formed a partnership and erected a small plant at Otis street wharf, which has prospered and developed until now it is one of the largest of its kind in Philadelphia.

SOCIETIES.

New York Academy of Sciences.—At the regular meeting in New York, May 1st, Prof. E. E. Barnard, of the Lick Observatory, California, read a paper on various observations made there on Saturn, Jupiter and some comets.

Canadian Society of Civil Engineers.—At the regular meeting in Montreal, May 4th, a paper on the "Quebec Land Slide of 1889," was read by the author, Mr. Chas. Baillairge. The discussion on Mr. J. S. Armstrong's paper on "Transition Curves" was resumed.

Engineering Association of the South.—At the regular meeting in Nashville, Tenn., April 13th, the subject for the evening was "High Duty Attachments for Non-rotative Pumping Engines." The discussion was opened by Mr. L. d'Auria in an address on various types of engines, and was continued by other members.

Engineers' Club of Cincinnati.—At the regular April meeting Mr. E. F. Layman read a paper on "Sidewalk Improvements in the Vicinity of Cincinnati," which comprised a review of the legislation enacted by the State of Ohio in the last few years pertaining to the construction of and manner of payment for sidewalk improvements, and a description of the proper construction, workmanship and materials necessary to secure the best results in building artificial stone sidewalks, which have been very generally adopted in the suburbs, an expenditure of $400,000 having been made on them in a few years.

American Society of Civil Engineers.—At the regular meeting in New York, May 3d, a paper on the "Improvement of the James River, Virginia," by Mr. H. D. Whitcomb, was read and briefly discussed. This paper is supplementary to one by Colonel Craighill, published in the "Transactions" of the Society in 1888, and gives the results obtained by the work thus far accomplished. The writer was in local charge of the improvement from 1874 to 1881, and also from 1891 to the present time. Colonel Craighill's paper gives a clear statement of the condition of the problem, and work is still prosecuted in accordance with plans there given.

A circular from the secretary states that the board of direction has appointed a Committee of Information and Courtesy, consisting of Messrs. Edward P. North, L. L. Buck, and Foster Crowell, with headquarters at the Society House, to extend to visiting engineers during the Columbian Exposition information and guidance to enable them to gain convenient access to works and objects of engineering interest throughout this country. It is hoped that members will aid the committee in this effort by communicating to it information as to works of either engineering or manufacturing interest, under their direction or in their vicinity, of which they have knowledge, and by extending facilities to visitors who may come properly accredited from time to time during the continuance of the Exposition. The committee has been constituted on the most economical basis consistent with the object, and in order to carry out the plan must rely largely on the voluntary services of members of the Society on the lines indicated. Members willing to co-operate are requested to address Committee Information and Courtesy, American Society of Civil Engineers, 127 East Twenty-third street, New York, giving information in detail, and stating at the same time what foreign language they may personally or through others have at their command.

INDUSTRIAL NOTES

The Jones and Lamson Machine Company is making rapid progress with the construction of its new machine shop at Springfield, Mass.

The Gillette Herzog Company, of Minneapolis, Minn., has decided to erect a foundry building as a part of its plant. The cost will be $25,000.

Mr. James E. Weaver, of Pittsburg, has invented a new process for making fuel gas from crude petroleum, which is now being tested on a small scale.

The Woodward Iron Company, Woodward, Ala., has let the contract to the Elmore Iron Works, of Birmingham, for the construction of additional blast stoves for their furnaces at Woodward.

The Enterprise Boiler Works, Youngstown, O., are building four hot-blast stoves for Rosena Furnace, at New Castle, Pa. They are of the Massick & Crooke pattern, and are 18×65 ft., with stack 50 ft. high.

The Hanlon Manufacturing Company, at Pennington, N. J., is introducing a new automatic boiler feeding apparatus, which is very convenient for use in many places, especially where water is taken from pipes or mains at a steady pressure.

At the meeting of the Fuel Gas Engineering Company held in their offices in Pittsburg recently, the following officers were elected: M. V. Smith, president; C. C. Morrow, secretary; John A. Elliott, treasurer; F. R. C. Perrine, general manager.

The Schultz Bridge and Iron Company, of Pittsburg, has closed a contract with the Akron Steam Forge and Iron Company, Akron, O., for the erection of a new forge and machinery building, for which about 270 tons of structural material will be required.

The present capacity of the Canton (O.) Steel Company is 10,500 tons annually, which includes both tool and spring steel in finished bars. Plans have been prepared for an additional iron building 100×125 ft. and a 15-ton furnace, which the company hopes to erect during the coming summer.

The Gordon Steam Pump Company, of Hamilton, O., and the Laidlaw-Dunn Company, of Cincinnati, have consolidated, and are in correspondence with the Canton (O.) Board of Trade in regard to locating there. The board has offered a tract of 10 acres close to the manufacturing district of Canton.

The Penn Steel Casting and Machine Company, of Chester, Pa., has just delivered to the Baldwin Locomotive Works 8 steel driving-wheel centers. The company is also completing a contract for 14 cast-steel anchors for the United States Government. Ten of the anchors weigh 12,000 lbs. and the others 10,000 lbs. each.

Messrs. John Maslin & Son, Jersey City, N. J., are presenting free to each user of their pulsometer pumps one of their new "perfect" air valves—an important attachment which is found to work well, and is capable of very close adjustment. All they require from users is the size of their pump or pumps.

The Boston & Lockport Block Company has issued its new illustrated catalogue for 1893, which shows a great variety of hoisting blocks of different patterns, differential hoists, sheaves and pulleys. Besides these the catalogue has illustrated lists of car-pushers, warehouse trucks of several patterns, wagon jacks, faucets and mallets.

At the Carnegie Steel Company's works at Homestead, Pa., on the 1st inst., 50 workmen struck against a new wage scale which went into effect that day, and under which a reduction in wages was made. It is said that the former union men intend returning to work to get even with the present strikers, who accepted their positions last summer. Trouble is mentioned in other departments of the mill.

The Bessemer Steel Company, Indianapolis, Ind., has now three cupolas with a combined melting ca-

pacity of 500 tons of metal per day of 24 hours; two 6-ton converters, eight soaking pits, each capable of holding four of the largest ingots; two blowing engines; one 32-in. two-high blooming mill, with 175 ft. of table, and a powerful shear with a capacity of shearing 12×12 in., or slabs 20 in. wide. This machinery is contained in a steel and iron building 350×60 ft. Adjoining that building is the open-hearth department, with two Siemens-Martin furnaces of 15 tons each. Adjoining the shear end of the blooming mill is the architectural steel rolling mill—a brick structure 400×300 ft. In this mill is a 26-in. three-high train, driven by a Porter-Allen 2,000 H. P. engine. The principal product of the works consists of billets, sheet bars, slabs and architectural steel of all kinds.

The stockholders of the New England Telephone and Telegraph Company, at the annual meeting held in New York, May 1st, elected the following directors: Frederick Ayer, John H. Cahill, Benjamin C. Dean, William H. Elliot, William H. Forbes, John E. Hudson, Henry S. Hyde, Albert O. Morgan, David B. Parker, Moses G. Parker, Stephen Salisbury, Thomas Sherwin. The report for the year 1892 shows: Gross earnings, $1,801,567; expenses, $1,365,123; net earnings, $436,444; dividends, $355,726; surplus, $80,718. In six years the number of telephone stations has increased from 16,000 to 24,000, the employees from 500 to 1,000, and the connections from 18,800,000 to 46,000,000 per year. Substantial progress has been made in the extension of the underground system. The company has now 8,281 miles of underground wire in Boston. There was charged to new construction during the year $338,129.

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 of 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.

The third annual meeting of the Southwest Silver Convention will be held at Silver City, N. Mex., on July 4th and 5th, 1893.

Oil.

New York, Pennsylvania, West Virginia and Ohio oil fields show a decrease in new production for April of 1,337 bbls. Indiana, however, shows an increase in new production of 1,330 bbls., making the production as compared with the March report just about balance. In the southwest district, including McDonald and Sisterville, there is a net increase of 57 wells drilling and rigs up.

Summary of completed wells, Pennsylvania and New York district: Total begun, 147 wells; total production, 6,962 bbls.; total dry, 28 wells; increase completed wells, 7; decrease in new production, 688 bbls.; decrease in dry holes, 5; average April wells, 59 bbls.; total drilling, 268; total rigs, 156; increase drilling wells, 62; increase rigs, 26; net increase, 88.

Indiana fields, summary: Wells begun, 39; production, 4,135; dry, 8; increase in completed, 11; increase new production, 1,330 bbls.; increase dry holes, 1; abandoned wells, 2; average production April wells, 133⅓ bbls.; decrease drilling wells, 6; decrease rigs, 1; net decrease, 7.

Ohio field, summary: Wells begun, 135; production, 5,482; dry wells, 24; decrease completed wells, 25; decrease new production, 649 bbls.; decrease dry holes, 7; abandoned wells, 44; average production April wells, 50 bbls.; increase drilling wells, 5; decrease rigs, 6; net decrease, 1.

ALABAMA.

Calhoun County.

(From our Special Correspondent.)

Woodstock Iron Company.—This company at Anniston is still in the hands of the receivers appointed in January last—W. G. Ledbetter, the president of the company, and J. W. Stillwell, secretary and treasurer, were then appointed receivers. They have only one coke furnace in blast, making 120 tons of iron per day. Of the ore treated in this furnace about 300 tons per day is obtained within the city limits and the immediate neighborhood of Anniston. The six-logged washer, or rather three double-logged washers under one roof, furnish 130 tons of washed ore each day, and the remainder is mined on the company's lands by contract.

Cherokee County.

(From our Special Correspondent.)

Tecumseh Iron Company.—This company has added a picking table to the new washer at the State Line ore banks, and started to wash ore for shipment. The ore from this bank is considered one of the best for charcoal iron in the brown ore district. Heretofore it has been screened and calcined previous to shipment, but the waste in treating gravel ore by this method is much greater than by washing, because such a large percentage of the smaller particles of the ore is lost in screening after the roasting, but in washing all, or nearly all, this fine ore is saved, especially when washed in a washer furnished with separators, picking tables and jigs, where all foreign material is carried off in the tailings. This is one great advantage the recently improved washers have over the old style, which, while saving the fine ore, failed to separate sand and slate from it, thereby reducing the value, especially at furnaces which purchased on the unit system, taking 50% metallic iron as basis for figuring value.

Walker County.

Virginia & Alabama Coal Company.—This company has contracted for the building of a large coal tipple at Coal Valley, and is putting in hoisting and other machinery, with a view to working the mines actively.

ALASKA.

Alaska Treadwell Mining Company.—Dividend No. 12, of 37½c. per share, was paid on the 28th ult.

ARIZONA.

Maricopa County.

(From our Special Correspondent.)

Volcanic Copper Mining Company, Phoenix.—This company has been recently organized to work a claim located in the Eagle Tail Valley, 65 miles from Phoenix. A ton of average ore returned at the El Paso smelter: Copper, 23⅛%; silver, 15 oz.; gold, 5-10 oz. Such ore is deposited off to the smelter for $32 per ton. Adjacent to the mine is an abundance of ironwood, valuable for making charcoal, but water has to be obtained by sinking about 50 ft. until the completion of the Orange Belt Canal.

The company organized to work the above property have issued 350,000 shares at a value of $1 each full paid and non-assessable; of these 150,000 are being disposed of at 50c. each to raise a working capital.

Yuba County.

(From our Special Correspondent.)

The Bonanza Mine.—This famous property, situated in the Harqua Hala district, has been sold by Hubbard & Bowers, the purchase price being $1,250,000.

CALIFORNIA.

(From our Special Correspondent.)

The smelter enterprise which William Selover and his associates propose establishing at San Francisco is gradually taking shape. Thirty acres of ground have been obtained at Baden gratuitously on the understanding that work shall be commenced at once. C. P. Huntington, president of the Southern Pacific Railroad, has expressed himself as very much in favor of this new enterprise, and says that the road which he controls will "take over particularly lean ores at any price that does not make an actual loss on transportation."

As a matter of fact for years a Fresno County mine has been operated for the benefit of Denver smelting companies, and for the simple reason that the ore could be shipped East $3.50 per ton cheaper than it could be shipped one-fifth of the distance to San Francisco.

Nevada County.

Federal Loan.—An important strike is reported to have been made in this mine in Nevada district. A new ledge was encountered in the east drift 500 ft. from the surface, the quartz from which shows considerable free gold. Gravel which prospects well has been struck in the Manzanita mine, 1,300 ft. below the top of the incline in the old Nebraska and Live Oak lead.

(From our Special Correspondent.)

The Idaho Mining Company, Grass Valley.—The negotiations pending between the Maryland company and the above corporation for the old Idaho mine, hoisting machinery, etc., previously alluded to in these columns, have ultimated in a sale. All the property belonging to the Idaho company will pass to the new owners excepting the gold in the mill and specimens and money on hand. The Idaho and the Maryland are to be consolidated and the work carried on through the Idaho shaft, the money for the purchase to be paid by the yield of the mine at nine-tenths of the proceeds. By specific agreement Eugene Creller is to have control as superintendent.

San Bernardino.

(From our Special Correspondent.)

A number of Colorado capitalists have located a placer claim on "Old Baldy" mountain, 2,000 ft. below the peak.

San Francisco County.

While excavating for a building on Devisadero street, seams of cinnabar were encountered. Some picked samples assayed as high as 35 to 40% mercury. Prospecting is now being pushed actively.

Siskiyou County.

(From our Special Correspondent.)

The Siskiyou Gold Mining Company.—F. C. Bender, A. Warder and J. D. Byrne, all of Oakland; C. Crowley, of San Francisco, and M. Crowley, of Callahan's ranch, have incorporated the above company with a capital stock of $1,000,000. The company will operate on Bowlder Creek.

Trinity County.

Ward Placers.—Through the courtesy of Gelder, Bailey & Co., of Denver, Colo., we are enabled to give our readers some definite information concerning their hydraulic mines. These placers, which Gelder, Bailey & Co., together with some French capitalists, the Baron Ernest de la Grange and Chaumont Quitry Baronne E. de la Grange, have purchased, comprise several claims, amounting in all to between 400 and 500 acres, in Oregon Gulch Mining District, being practically what is known as the Oregon Mountain, located about four miles northwest of the town of Weaverville. They were located about 1851; are a glacial deposit, filling a channel through Oregon Mountain. The depth of the gravel from the foot is from 50 to 100 ft., gradually increasing to an estimated depth of from 500 to 600 ft. No blasting will be required, though there are some large bowlders, but they are easily handled with derricks, with which the mine is now well equipped. The yield of the gravel, as proved by past workings, as nearly as can be estimated, is about 1c. per cubic yard. This property is particularly well located as regards dumping ground for tailings. These are now dumped into Oregon Gulch. The water is discharged into Trinity River, and from thence into the Klamath River, and from there into the sea, entering no navigable stream and interfering with no agricultural districts. There is a dump of several hundred feet for the tailings, so that the location of the mine in every particular is suitable for expedient work.

The mine has been worked on a small scale in the past, producing only several thousand dollars per year, on account of the limited amount of water to be had. There are now two monitors on the property, and at high water about 1,500 ins. of water available; but this only lasts for a few months in the year. It is proposed by the present owners to expend from $100,000 to $150,000 in the construction of ditches, thereby bringing sufficient water on the property to operate four monitors practically the whole year around, when it is estimated the mine will produce from $200,000 to $300,000 per year.

COLORADO.

El Paso County.

World Mining Company.—The annual meeting of this company was held in Colorado Springs, April 26th. There was a large attendance of stockholders. The treasurer's report since January 17th last shows $2,789 paid out and $2,895 received, and a balance of $105 in the treasury. The manager's report shows that during the past two months the shaft has been sunk to 102 ft. From the latter depth a 32-ft. drift was run, which opened up the Pharmacist vein. The company has buildings and machinery costing $1,500. The following board of directors was elected: J. T. Reed, R. D. Smith, J. K. Miller, J. W. Miller, B. F. Spinney, A. Heizer, David Nevitt, E. F. McCloskey and J. H. Fitzpatrick. A committee was appointed, with Mr. Fitzpatrick as chairman, to look into the affairs of the company and publish their report for the benefit of the stockholders. The committee has found that the books since January 17th are in good condition and that the accounts are correct. Previous to that time, however, a great deal of carelessness has been discovered and many certificates of stock are missing which have not been traced. The management started the mine on April 28th, and will continue development work with three shifts of men. A block of 25,000 shares of treasury stock was sold on the same date to Mr. A. S. Holdrook, which places the company free from debt and with a good surplus to work on.

Lake County.

(From our Special Correspondent.)

A few weeks ago your correspondent mentioned the closing down and probable sale of the St. Louis Smelting and Refining Company's smelter at this point. This sale, however, is not likely to occur, and it is rumored here to-day that the St. Louis company will very likely rebuild and operate the smelter themselves.

The Dunkin is averaging an iron output of 50 tons daily, and this from the five leases that are being thoroughly developed. It was thought some months ago that pumping would be necessary to drain the lower workings of the Dunkin, but for some unknown reason the 40 ft. of water at one time standing in the bottom has disappeared and the mine is perfectly dry. This is probably due to the heavy pumping that has been done for the past six months in the Sixth street, Penrose and Bohn shafts.

At a point 220 ft. down the incline in the Shamrock property a drift was recently run and a winze sunk 50 ft. which resulted in the discovery of a good body of ore. The same ore shoot was encountered in the main drift where 5 ft. of it is now showing assaying all the way from 20 to 388 oz. silver and a good percentage in lead.

At the Small Hopes property the four shafts are all in active operation; they are the Emmet, North, Cary and Kerens shafts, and give a joint output of 100 tons daily.

On the Blakey lease of the Chrysolite work goes forward steadily, and about 20 tons of iron ore is being mined daily. The iron ore bodies seem to be inexhaustible, and the mineral mined averages 18 oz. silver and 25% iron excess.

The Last Chance Mining Company held its annual meeting this week and elected officers for the ensuing year as follows: J. F. Sanders, president; S. Z. Dickson, vice-president; Henry R. Walcott, secretary and treasurer. These, together with Ralph Granger, were also chosen as the board of directors.

The Grey Eagle Mining Company's properties are being vigorously worked. In passing along the main drift in the Penrose, Orion and Pocahontas ground the mineral is found in veins running from 1 to 4 ft. An average of 30 tons daily is taken from the different stopes in this drift averaging 100 oz. in silver and from 20 to 25% lead. The other drifts are also in good ore and the entire workings never looked better than now.

A. Y. & Minnie Mining Company.—This company will close its works for the present, on account of the unfavorable condition of the silver market. On some blocks work will still be carried on by lessees.

Emmons Mining Company.—At this company's Peerless Maud mine, in the Horseshoe District, the shaft is down 100 ft., and by drifting a good body of galena ore has been opened up.

Nisi Prius Mining Company.—Lessees have taken out some 25 tons of good carbonate ore from the old Wier shaft.

Silver Cord Mining Company.—The mill has resumed work, after closing down for several weeks on account of scarcity of water. Connections were recently made in the main tunnel with the Ruby shaft workings.

Valley.—A new chute has been opened up 125 ft. from the surface, showing a good body of carbonate ore.

Wolcott.—The ore body is now showing 3 ft. in width, and the top has not yet been reached.

FLORIDA.

Phosphates.

Riparian Rights.—Florida exchanges state that in the appeal of the Peruvian Phosphate Company against the State board of phosphate commissioners, the Supreme Court has decided that the preference given by the statute to riparian owners cannot be assigned independent of riparian lands.

Alachua County.

Imperial Phosphate Company.—This company has been organized with $500,000 capital to work phosphate mines near Gainesville. The incorporators are: G. W. Oglesby, J. W. Barrett, Dalton, Ga.; J. S. Porter, W. S. Trimble, Atlanta, Ga., S. R. Pyles, Ocala, Fla.

Citrus County.

Cove Bend Land and Phosphate Company.—This company is now shipping from 30 to 50 car-loads of phosphate rock per week.

Optimus Phosphate Company.—At this company's mines, six miles from Rutland, the output is now from 20 to 25 tons per day.

GEORGIA.

Oglethorpe County.

Diamond Blue Granite Company.—This company has been organized with the following officers: Charles Estes, president; E. S. Johnson, secretary, and J. O. Mathewson, treasurer. The capital stock of the company is $80,000 paid in, with the privilege of increasing it to $300,000. The company has bought 63 acres of land and has made arrangements to work a large granite quarry.

Polk County.

(From our Special Correspondent.)

The Hamilton Brothers, interested in the Etna Furnace Company, Rome, Ga., have purchased, in company with Messrs. Sparks and Wimley, of Cave Springs, the Hematite brown ore property situated near the line of the East Tennessee, Virginia & Georgia Railroad in this county. The new company is engaged in shipping ore to the South Pittsburg coke furnaces in Tennessee, and proposes erecting a new double-logged washer on the property at once. At present all ore shipped is lump or "dornick," of which the banks on this property furnish very large quantities.

A fine grade of ore for charcoal iron is being shipped from the property of the Etna furnace, situated about three miles south of the Hematite property on the same line of railroad. This ore is being shipped to the Bass furnace at Rock Run, in Cherokee County, Ala., and is used for the manufacture of car-wheel pig iron. This is the first ore the Etna Furnace Company has ever shipped; heretofore their practice has been to use their ore in their own furnace, which, however, has been out of blast for about two years.

IDAHO.

Custer County.

Idaho Democrat.—Two weeks ago an ore vein was struck which promises well. It was a small seam at first, but it has widened to between 4 to 10 in. of galena, besides some width of carbonates and second class ore.

Owyhee County.

Black Jack.—This mine, it is claimed, now has nearly 1,000 tons of ore estimated to be worth $140 per ton, piled up and waiting for vanners to be put in the mill.

Ralph Mining Pool.—Ruth Mine.—The mine was purchased last summer by the Ralph Mining Pool, partly on its merits and partly because the ledge was known to run toward the Poorman and gave a means of reaching that mine by tunnel at a greater depth than from any other approach. They have run in a tunnel, 200 ft. lower than the old one, following the ledge for 900 ft. About two months ago they cut a small pocket which at the time created some excitement, as it showed assays of over $20,000 per ton in gold. This pocket, however, yielded only a few sacks of ore, says the Anaconda "Standard." Four weeks ago the vein in the tunnel widened out to more than a foot of ore worth about $200 per ton. Keeping on, 10 days ago, it had been widened to 3 ft., when six sacks of ore were taken out one morning which were at first estimated to be worth $5,000 per sack and were probably really worth one-fifth that sum. Now they have drifted through a shoot of ore varying from 1 ft. to 4 ft. in width and 140 ft. long, which a very conservative estimate would make average $200 per ton; and this shoot has 180 ft. of backs. It is the same shoot out of which the rich ore was taken years ago, and which was then supposed to have been worked out. This is one of the veins running through or crossing the famous Poorman lode. It is proposed to continue the tunnel into the Poorman, where it will cut within 1,500 ft. at a depth of 800 ft. from the surface and 400 ft. below the bottom of the deepest shaft.

ILLINOIS.

The United Mine Workers' Convention, assembled in Streator, on April 28th, resolved to sign last year's scale.

INDIANA.

A dispatch from Brazil says that the block coal operators and miners met in secret session there on April 28th. President Comeska and J. H. Kennedy, from Terre Haute, of the United Mine Workers, were debarred from the league, as the miners declared that they would transact their own business with the operators, which resulted in an advance of five cents per ton for the last six months of the year.

MARYLAND.

Coal.

Maryland Coal Company.—The plan for reducing the capital stock of this company has been long in contemplation; the arrangement finally adopted was to issue $2,000,000 preferred stock carrying 10% cumulative dividends; this stock to be exchanged for the present common stock at the rate of 45 shares of preferred for 100 of old stock, the old stock to be canceled. Any surplus of preferred remaining unissued is to be sold, preference being given to shareholders of the company. The exchange of stock may be made at any time before June 15th next.

MICHIGAN.

Copper.

Calumet Mining Company.—The United States Supreme Court at Washington has handed down a decision in the case, long pending in the courts, of Jos. H. Chandler against the above named company. The claim was for some of the land which the South Hecla now own. The decision was in favor of the Calumet company.

Kearsarge Mining Company.—The good showing made in the Calumet & Heckla where the Osceola amygdaloid was encountered has decided the Kearsarge management to start a crosscut to the Osceola amygdaloid, which lies about 2,000 ft. west of its lode, says the Calumet "News."

National Mining Company.—The mass of copper discovered in this mine some time ago has now been blasted out and it is now being cut. It is estimated to weigh 20 tons. The vein in which it was found looks promising.

Ridge Mine.—The tributors in this mine have done fairly well the past winter, the four men having taken out 10 or 11 tons of copper in the upper abandoned levels of the mine, says the Ontonagon "Miner."

Iron—Menominee Range.

Aragon.—This mine began to ship ore to Escanaba at the end of April, having about 72,000 tons in stock at the time, says the Norway "Current." The output is now and has been for the past three months at the rate of 16,000 tons per month.

Cleveland Iron Company.—The Lake Shaft mine of this company sent out its first consignment of ore for the season on April 26th.

Commonwealth Iron Company.—Shipments have begun with about 106,000 tons of ore in stock. The new machinery is already in at the Badger.

Crystal Falls District.—At present a small force is being worked at the Monitor. The Paint River, Great Western, Hope, Armenia, Youngstown, Claire, Crystal Falls and a number of other mines are doing little or nothing. The Shafer and the Dunn are working about the average force while at the Mastodon and South Mastodon but little is being done.

Keel Ridge Mine.—There are about 2,000 tons of ore in stock and explorations are still going on. A crosscut has been driven south 162 ft. Still another to the north cut a large stream of water but no ore.

Waverly.—Work has commenced at this mine under the direction of Capt. I. Williams.

MINNESOTA.

Iron—Mesaba Range.

Adams Iron Company.—This company intends to begin operations at once, says the "Mesaba Range," and is considering bids for the removal of 230,000 yds. of stripping from the North Adams during the present season. The stripping of this amount and other work connected with the development of the mine will necessitate the employment of 250 men.

Cincinnati Iron Company.—A meeting of the stockholders of this mine was recently held to discuss a reduction of the royalty, which was asked for by the Standard Ore Company which subleases the mine. The Standard is now paying 55c. per ton royalty and wants a reduction of 15c., stating that fee-owners of the mine had consented to a reduction of 5c. which would leave only a reduction of 10c. for the Cincinnati company. At the meeting it was stated that the working company has already expended $85,000, of which $25,000 was for advance royalty; that it had sold 25,000 tons of ore at $1.50 per ton. Many arguments were advanced in favor of the reduction, but the Cincinnati stockholders refused to make it.

Little Mesaba—At this mine exploratory work is going on in a satisfactory manner. Several pits have been put through the surface and testings have been continued with a diamond drill to sufficient depths to prove the existence of a large deposit of good ore.

Mesaba & Northern Railroad.—A force of 100 men are now at work on the grading.

New England.—Mining operations at this mine are progressing systematically. Ore is being hoisted from Nos. 1 and 2 shafts, and there is now something like 4,000 tons in stock.

Iron—Vermilion Range.

Minnesota Iron Company.—This company has begun shipping ore. From 50 to 100 cars will be shipped daily. The Chandler will begin this week. The ore docks at Two Harbors are in readiness for receiving. All that prevents lake shipment is the ice, which it is expected will move in a few days.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

Saturday, April 29th, closed a quiet week in the operations of the lead and zinc mines on account of heavy rains and wind storms. Considerable damage was done at Webb City and Carterville by the wind blowing down derrick frames, elevators and tramways. The small output from the mines caused the ore buyers to take about all the surplus stocks of ore they could find. There was a general cleaning up of ore bins at Carterville. The prices of zinc ore remained about the same as the previous week, $22 per ton being the top price and an average of $20.50 per ton throughout the district. Lead ore $22.75 per thousand. Following are the sales from the different camps: Joplin mines, 1,494,610 lbs. zinc ore and 180,190 lead, value $18,509; Webb City mines, 588,600 lbs. zinc ore and 37,840 lead, value $6,745; Carterville, 2,781,950 lbs. zinc ore and 111,180 lead, value $31,010; Zincite mines, 209,030 lbs. zinc ore and 7,410 lead, value $2,389; Oronogo mines, 62,980 lbs. of lead, value $250; Granby, 226,120 lbs. zinc ore, value $226; Galena Kerns mines, 1,035,000 lbs. zinc ore and 252,030 lead, value $16,150; district's total value $75,279; Aurora, Lawrence County, mines, 1,200,950 lbs. zinc ore and 161,800 lead, value $12,583; lead and zinc belt's total value $87,862.

Standard Lead and Zinc Company.—This company's mines at Belville, seven miles west of Joplin, have been mentioned several times as being a typical zinc mine. The development and exploration of the past five years have proved the zinc ore deposits to have been practically confined between walls of two separate formations. The north wall is limestone and the south wall chert. The drifts and levels were driven so as to conform to the contour of the limestone on the north. This has proved that the ore deposit has followed the true course of the inclosing walls and has a strike from the northwest to the southeast. The ore deposit was followed down to a depth of 140 to 150 ft., when a barren stratum or bedrock was supposed to have been reached. To this depth the limestone wall on the north was almost vertical. This barren stratum, which is chert, is not level, but somewhat in the form of a wave; at one point near the main pump shaft it was necessary to shoot out and take up a stope so as to drain the east workings of the mine. In doing this work a second contact was formed which opened up a second deposit of ore. Development work was pushed on this and the miners are working on a 12 to 15 ft. face of ore. The foundation of this deposit of ore is stratified and the ore more solidified than in the other. The limestone wall on the north has changed its course from vertical, and pitches to the north at an angle of about 30°. At the present time the south wall has not been exposed sufficiently to determine its course. The second deposit shows some lead associated with the zinc blende. This mine has now produced and sold over $300,000 worth of zinc ore and the workings have large resources of ore yet in sight.

MONTANA.

Beaver Head County.

Dexter.—It is contemplated that work will soon be resumed here.

Scott & Gallagher Group.—These mines have closed down for the past two months, but work will soon be resumed. This group of mines contains bodies of lead carbonate ores with a good percentage of gold, which can be mined at a small cost.

Midnight.—During the past winter a shaft has been sunk to a depth of 120 ft. on the vein. Recently a strike has been made at the bottom of the shaft. The ore body is now 4 ft. in thickness, and carries in value $80 in gold, 250 oz. of silver and 40% of lead.

Lewis and Clarke County.

Montana Mining Company, Limited.—The suit brought against this company by the St. Louis Mining Company has come to trial in Helena. The St. Louis company claims that large quantities of ore have been stoped from ground belonging to it. The plaintiff has attempted to force the defendant to produce his books, but the latter is unwilling and the right was questioned by his counsel.

Madison County.

Emma Nevada.—This mine is working by lease and the leasers have a quantity of ore on the dump.

Pandora.—This mine is yet in a state of total suspension, but there has been a number of miners who desire to lease it. The company has thus far declined to let it go.

NEVADA.

Storey County—Comstock Lode.

Belcher Mining Company.—The latest weekly official letter says: "On the 200-ft. level the south drift from south cross-cut No. 1 is in 66 ft. The face shows porphyry. The raise from cross-cut No. 3 is up 8 ft. The top is in porphyry. On the 350-ft. level the northeast drift, 50 ft. north of the north winze, is in 74 ft. The face shows porphyry. On the 400-ft. level the northwest drift is being repaired. On the 600-ft. level the southwest drift is in 108 ft. The face shows porphyry. We have hoisted during the week 20 tons of fair-grade ore."

Crown Point Mining Company.—The latest weekly official letter says: We have stopped the west cross-cut from the top of the raise on the 400-ft. level, and have started a north drift from it, which is out 12 ft. It is running through the old stope, some of the fillings of which are of fair-grade, and saved where practicable. Have stopped the west cross-cut 300 ft. south of the shaft on the 400 ft. level, and started a raise from it, which is up 25 ft. The top is in porphyry, with streaks of quartz through it."

Justice Mining Company.—The latest official weekly letter says: "The south drift from the north stope on the 822-ft. level, is in 161 ft. The face shows low-grade quartz. The raise 120 ft. south from the north stope on this level is up 70 ft. The top shows 3 ft. of ore that assays $20 per ton. Shipped to the Washoe mill for reduction during the past week, 149 tons 184 lbs. of ore, the average battery assay of which was $19.63 per ton."

Savage Mining Company.—The latest official weekly letter says: "On the 1,100 level we are still extracting fair-grade ore in east cross-cut two from the south drift. On the 11th floor of this level we have started an east prospecting drift, and advanced some 20 ft. This drift passed through four feet of fair-grade ore. During the week we have hoisted 81 cars of ore from this level. Car samples average $30. On the 1,300 level we have started a south drift from the top of the upraise on the edge, and advanced some 16 ft.; face in quartz assaying from $6 to $7 per ton. On the 1,800 level on north drift, at a point 90 ft. north of the south boundary, we have started east cross-cut one and advanced the same 23 ft., the quartz giving low assays."

Segregated Belcher Mining Company.—The latest official weekly letter says: "The west cross-cut from the south lateral drift on the 1,200-ft. level, 75 ft. south of the north line, is now out 94 ft. The face is in porphyry and streaks of low-grade quartz.

(From our Special Correspondent.)

Some very rich gold mines are reported as having been discovered seven miles northwest from Wadsworth, and miners are flocking from Virginia City as well as from the more immediate neighborhood. The newly discovered ledge is only 18 miles from the Comstock, and by many it is believed to be a continuation of the famous lode. No large quantities of ore have yet been taken out, but specimens have assayed to $600 per ton.

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	Car sam'le Assay	Tons Mil'd.	Av. Bat'ry Assay.	Bullion for Week.	Bullion Shipped
Belcher	20	.....	.....	.....	.....	.....
C. C. & Va.	640	$31.18	630	$26.97	.....	[1]$24,701.1
Justice	...	...	149	19.63	.....	.....
Kentuck	21	31 00	.....	.....	.....	.....
Prfess	492	23.50	450	21 86	...	.....

[1] First shipment to Carson Mint on April account.

Hale & Norcross Silver Mining Company.—M. W. Fox, through his attorneys, filed this week a notice of motion with the Supreme Court to dismiss the appeal taken by the defendants in the celebrated suit. The plaintiff claims that the defendants have not complied with the requirements of the law, as enunciated in the rules regulating the practice of the Supreme Court, by omitting to file points and authorities. "Rule V." states in specific terms: "If the transcript of the record or appellant's points and authorities be not filed within the time prescribed, the appeal may be dismissed on motion upon notice given."

One clause of Rule 2 states with equal clearness when this most important document shall be filed. It says: Thirty days after filing the transcript, the appellant shall file with the clerk his printed points and authorities, with proof of service on the respondent."

Provision is made in Rule 3, clause 5, for a limited extension of time. It states: "The time limited for filing points and authorities shall not be extended except by order of the court, upon stipulation of the parties, or an affidavit showing good cause therefor, and in no case for more than 20 days."

The last sentence wherein is stated the extreme limit of time which the Supreme Court may grant, is decisive. The transcript was filed by the appellants on February 13th, 1893, and the notice of motion to dismiss the appeal was filed on April 26th. It will thus be seen that the defendants, albeit they have had about a dozen lawyers to worry over their case, have overrun the time allowed them by law by about three weeks. By no stretch of the imagination can it be supposed that, by rule of practice or of law, an exception can be made in this case. At the same time the Supreme Court of California has on more than one occasion, and in every instance when the most important issues were at stake, nullified itself by giving a decision in direct conflict with a previous ruling of the same court. On its face the point by Mr. Fox is well taken, and when the matter comes up some time early in May it will be interesting to see if the great suit is to receive its final quietus or have new life injected into it by a ruling adverse to the plaintiff.

NORTH CAROLINA.

Moore County.

Foushee.—A deposit of coal has been found on the Foushee property near Glenn's Mills. The vein is said to be wide, and it is to be explored.

OHIO.

A press dispatch from Columbus says: Reports from various mining centers of the State show that the miners obeyed the order of the Ohio District convention, and stopped work almost to a man May 1st. Not a single mine of any importance in the State was operated on that day, and the coal roads are already feeling the effect of the strike. The Columbus, Shawnee & Hocking, the Columbus, Hocking Valley & Toledo, and the Toledo & Ohio Central railroads have already directed a reduction in freight crews in consequence of the strike. It is estimated that not less than 22,000 men are out for the five-cent advance demanded for pick mining, and the corresponding increase for other work about the mines. There is no disposition among the miners to accept a compromise. It is reported here that several operators have decided to grant the advance rather than permit their mines to remain idle, but there is no sign of a general concession to the demands of the union. The operators are unanimous in the assertion that the action of the union is unjustified, and they say they were assured by officers of the organization of United Mine Workers that an advance would not be demanded unless the scale should be raised in Western Pennsylvania and Southern Indiana. No advance has been ordered in either of those districts."

Hocking County.

Ohio & Western Coal and Iron Company.—The property of this company was recently sold under foreclosure, and bought for $434,000. It is understood that the purchase was in the interest of the bondholders, who purpose reorganizing the company. The property includes 6,000 acres of land, several coal mines, now worked by lessees, and four blast furnaces.

PENNSYLVANIA.

Anthracite Coal.

A press dispatch from Shenandoah says that, in accordance with an order received from Pottsville on April 29th, the Shenandoah City and West Shenandoah collieries were idle May 1st. The suspension is for an indefinite period, and affects directly more than 2,000 men and boys.

The Scranton "Tribune" says that it is now regarded as certain that the new William Penn breaker will be ready for operation May 15th. The structure will be one of the largest in that region. The area covered by the breaker is 170 × 100 ft. The height from the ground to the roof of the "fin" is 110 ft. The cost of the structure will be $75,000. Coal run through the breaker will be sent to market over the Pennsylvania Railroad, which has completed its line from the colliery.

Lower Rausch Creek Colliery.—The culm bank has caught fire. Machinery is being placed in position to assist in extinguishing it, as the bank, which is nearly one mile in length, contains many thousand tons of valuable coal, nut, pea, buckwheat and rice sizes.

Oneida Breaker.—The statement has been made that this breaker was burned recently, causing a heavy loss. The facts are that the fire at the breaker burned only the jigs on one side, which were without water at the time, as that side of the breaker was not in use, and the actual damage done was between $6,000 and $7,000. The breaker was idle less than three weeks, and the repairs could have been completed in two weeks had it been necessary. This fully demonstrates the value of iron breakers; had this been an ordinary wooden breaker it would probably have been entirely destroyed, compelling a suspension of work at the colliery for at least six months. As it was only the jig-room on one side of the breaker and part of the platform were burned, and but one piece of iron in the breaker frame was warped.

Coke.

H. C. Frick Coke Company.—At the Valley mines near Scottdale, this company is testing a patent machine for drawing coke from the ovens. At a recent trial one oven was drawn and the coke loaded on a car in 19 minutes.

SOUTH CAROLINA.

Phosphates.

Rose Phosphate Mining and Manufacturing Company.—At a meeting held recently in Charleston, Joseph W. Barnwell was re-elected president, with the old board of directors. The stockholders voted to order the sale of the company's lands and plant at public sale. The sale will take place May 16th.

SOUTH DAKOTA.

Lawrence County.

Blue Ridge Mining Company.—This company owns 9 full claims between Englewood and Ruby Basin, on which about $2,000 have been expended in prospecting. A shaft is now being sunk on the vein of a depth of 150 ft., and the indications are good.

Deadwood.—A 50-ton cyanide plant is to be erected in this city by Mr. J. S. Childs, superintendent of the Harney Peak tin properties, says the Deadwood "Daily Pioneer." Mr. Childs, with Dr. Taylor, B. E. and M. D. Rossiter, has inspected certain claims recently purchased in Blacktail Gulch. It is reported that Mr. Childs will commence work immediately on the Lewis and Flickinger claims, the ore taken out to be treated by the cyanide process. According to the authority above quoted Dr. W. P. Jenney has favorably reported on the working of the Bald Mountain refractory ores by the cyanide process.

Garden City Mining Company.—In the 85-ft. tunnel a shoot of ore has been penetrated for 65 ft., which assays from $25 to $30 per ton. Another tunnel has been commenced, which is now in 50 ft. It is being run to strike another shoot some distance beyond. The ore is silicious.

Gunnison Lode.—Some 500 ft. of tunneling has been run, of which 280 ft. is in one working. The ore vein was found some time ago, and two important shoots have been cut, the men now being some distrance in the third shoot. From the first to the second shoot the distance is about 12 ft., and between the second and third about 20 ft. The ore body is said to be extensive and of good quality, with considerable free milling ore.

Homestake Mines.—By great efforts on the part of the management and miners the connections between the Homestake and Highland mines and the Deadwood-Terra have been closed by sack filled with moist clay and the gases no longer enter the former works. It is thought probable that work can be resumed within a week.

TEXAS.

Llano County.

Lauderdale.—The owners of this property, which is eight miles northwest of the town of Llano, have been at work for some time exploring, and have recently struck a vein of iron ore 7 ft. in width. The ore is said to be the same as that of the Olive mine, which is good Bessemer ore.

UTAH.

Beaver County.

Rob Roy Mine.—A tramway is being constructed from the mine to the mill and it is expected that the latter will be in running order by July 1st. The mill has 10 stamps.

Juab County.

Mammoth Mining Company.—A meeting of the board of directors of this company was held April 20th, for the purpose of letting the contract for the erection of the 40-stamp mill, but the directors decided to wait for the return of Mr. Robinson, the superintendent, before taking final action.

Tintic Milling Company.—This company is operating the old McIntyre mill, which has been put in excellent condition. The company offers $1 a ton for 20-oz. ore and $2 a ton for 30-oz. ore more than it will bring in the market. Many low grade properties long idle are being worked again, and owners are sorting their dumps and shipping ore of this class heretofore valueless.

VIRGINIA.

Goochland County.

Caledonia.—A letter to the Washington, D. C., "Post" says that mining in the gold fields in this

camp has begun with renewed vigor. Hydraulic mining will commence on the Collins gold mine April 15th. Machinery is now en route to it and will be in operation by contract on the above date. Mr. J. W. Woodside, owner of the Bowles gold mine, who sunk a shaft on his property last fall, has ordered new improved mills. By July 1st Mr. Woodside will have two or three mills of 10 tons' capacity each in full operation on his property.

The Pryor gold property has been sold to Williams & Skelton, of Richmond, for $15,000, and nuggets worth $5, $17.50 and $22.88 were found in it lately.

Free milling ore has been taken from the Busbey vein which assayed high. This mine has not been developed yet, but will be, and improved machinery put on it before August 1st. Washington parties have purchased an interest in the Luce mine, but no figures are given. A "deal" is about to be made of the Kelley mine.

The Powhatan Gold Mining Company, 18 miles from Fredericksburg, and of which Congressman Shonk, of Pennsylvania, is president, is turning out a satisfactory amount of gold, although not yet in operation three months. Senator Sawyer's mine has been sold to an English company. A piece of gold property which the present owner purchased as farm land for $1,200 is now held at $25,000. Two years ago the Moss mine and a three-ton stamp outfit were purchased for less than $10,000 in this county. About $25,000 in profits were taken out of it in two years' work, and recently it was sold for $60,000. Some weeks ago 1,650 lbs. of the ore lying on the top of the dump, from two shafts, some fair and some indifferent, from the Hughes mine, was run through the Crawford mill and yielded $19 in pure gold. The assay called for $26.90 per ton. Some surface ore on the Big Gilmore mine was run through the same mill and panned out $15.75.

WASHINGTON.

Northport Smelter.—It is claimed that the Pyritic Smelting Company, of San Francisco, has made final arrangements for the erection of one of their plants at Northport, to work the ores of the War Eagle and Le Roi mines. It is understood that President Corbin will build an extension of the Spokane & Northern Railroad, 15 miles, to the Le Roi and War Eagle mines as soon as they are sufficiently developed to permit the shipment of ore. Water power will be taken from Deep Creek, 1½ miles from Northport, and affording a fall of 200 ft. in that distance. The Pyritic Smelting Company owns the coalfields near Banff. This coal can be transported to Northport by boat. The company is negotiating for the purchase of the Silver King, a copper and silver mine 12 miles below Nelson, on the line of the Nelson & Fort Sheppard Railroad.

WEST VIRGINIA.

Coal.

Davis Coal and Coke Co.—A press dispatch from Piedmont says that all of the coal and coke companies in which Messrs. S. B. Elkins and Henry G. Davis are interested, except the Junior Coal Company, have been consolidated under the name of the Davis Coal and Coke Company, with Mr. Elkins as president. The capital stock of the consolidated company is $3,000,000, and the company controls 49,000 acres of coal and mineral lands in this State.

Coal.

Montana Coal and Coke Company.—This company's plant, which was destroyed by fire some time ago, has been rebuilt from the designs of Superintendent J. C. Gaskill. There are three coal crushers, two hoists and all the necessary buildings. The machinery is driven by an Atlas engine with 24×30-in. cylinders.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

Kootenai.

Kootenai Placer Mining Company.—This company, which owns about 11,000 acres in Waneta, is constructing a 14-mile ditch which will afford a head of 200 ft. A saw mill supplies timber for flumes. It is said that $59,000 have already been expended and that $25,000 more will be required. Last summer the company worked 70 men and it has 55 now at work.

Sloean.

Dardanelles.—All the ore extracted from this property has been stored on the ground and no shipments will take place until summer. The face of the drift shows one foot of solid ore, with seams of galena through the gangue.

Noble Fire.—About 15 men are now engaged taking out ore, but none will be shipped until transportation becomes cheaper.

CANADA.

Ontario.

Ontario Iron and Steel Company.—The city of Toronto has decided to give this company 150 acres of low ground and a bonus of $75,000 on condition that the company establish its blast furnace in Toronto, the work to commence at once and be finished by December next.

Copper.

Canadian Copper Company.—We are officially informed that both of this company's furnaces at Sudbury resumed operations May 1st.

COLOMBIA.

La Pradera Company.—This company is now producing some 70 tons of castings daily. The works were founded about 12 years ago and have been very successful.

Samaca.—It is reported that the Department of Boyaca has expended $500,000 in trying to establish iron works at this place, but although the ore is of good quality it does not occur in sufficient quantity to make its working profitable.

ECUADOR.

Zaruma Mines, Limited.—The March output was equal to 125 oz. of standard gold, worth £486. The ore does not seem to be improving in quality.

ENGLAND.

Miners' Hours.—The bill making eight hours a legal working day for all workmen engaged in mines was passed to a second reading in Parliament, May 3d, by a vote of 279 to 201. The large majority, it is believed, makes it final passage secure. The division was not on party lines.

Great Western Colliery.—Of the 138 men in this colliery at Pontypridd at the time of the fire on April 11th, 73 came out alive; 61 dead bodies have been recovered and 4 are missing.

New Morgan Gold Mining Company, Limited.—The attempted reconstruction of this company has failed, only £1,214 being subscribed when £10,000 was desired.

Diamonds.

Kurnool.—The Madras "Times" gives a report on this district: The principal fields where diamonds are worked for are Bunganapully, 37 miles S. S. E. of Kurnool, and Ramalcottah, 18 miles W. by S. of Kurnool. The rock and alluvial working at Timapooram, six miles E. S. E. of Ramalcottah, Yembye, Byonpully, Goorramcondah, 24 miles, S. S. E of Kurnool, are reported to be deserted. The quartzites at Bunganapully form a cap resting uncomfortably on the denuded surface of a much older set of shales and traps with some limestone bands. The quartzite covering is from 20 to 30 ft. in thickness, and it is pierced here and there over the end of the hill by shafts of 15 ft. or less, from the bottoms of which nearly horizontal galleries are formed to get at the seams of diamond gangue. The capping is composed of compact grits and sandstones in thickish beds above, and somewhat thinner toward the bottom. Externally the rocks are hard and vitreous. At the level of the galleries there are beds of coarse pebbly conglomerate, occasionally a breccia which is sandy and clayey conglomerate, and with these beds run seams of more shaly and clayey stuff. There is no trace of the clayey constitution on the outside along the outcrop, nor are there any distinct bands of shales. Large stones do not appear to have been found here, the highest value being from Rs. 300 to Rs. 400. The extension of the diamond bearing stratum can be traced for several miles west of the region wherein it is worked.

LOWER CALIFORNIA.

(From our Special Correspondent.)

Cedros.—A gold mining company is being formed by Chicago and San Diego people to operate on the unoccupied portion of Cedros Island. The capital stock will be $500,000.

Montezuma Mine, Alamo.—The Edwards Bros., of San Diego, have secured a new lease of the mine of W. E. Howard, and will reopen it with a full staff of men.

MEXICO.

La Luz de Borda.—This head was used last week under a misapprehension. The mine referred to at that time was not "La Luz de Borda," which is situated in Tlalpujahua, State of Michoacan, and now in the hands of a vigorous company formed in this city, but "La Luz" mines, of Hostotipaquillo, in Jalisco, whose melancholy history should be familiar to every reader of the English mining papers.

(Special correspondence of Richard E. Chism.)

Puebla.—The mining district of Tebela del Oro is attracting some attention just now and a company has been formed in this city to open up some of the old mines there.

The central town of the district lies some 60 kilometres or, say, 38 miles, northwest of the Apizaco station of the Vera Cruz railway, and the region contains about a dozen mines of some fame as well as many prospect holes, which may be developed into mines by proper attention. There is, according to the reports that have reached me, a large amount of ore with an average assay of, say, 20 oz. of silver and about $\frac{4}{10}$ oz. of gold per ton. There is a grand upheaval of feldspar porphyry in the centre of the district, which yields most of the gold ore. As far as the latter is segregated it makes its appearance in narrow ribbons of crystalized quartz; otherwise it is disseminated through certain portions of the porphyry in grains, generally near to the segregated veins. Some pieces of native gold have been found in the veins of one or two inches in length. This gold is always alloyed with silver, so that its average fineness is about 600 thousandths.

Silver sulphide is met with scattered all through the porphyry in fine power or crystalized, and can be separated from the matrix by concentration. The noble metals are always found in this region associated with the more decomposed or metamorphosed masses of porphyry, and it is believed that the unaffected parts of the upheaval or dykes are quite barren.

The great trouble with this district is the narrowness of the veins and the uncertain character of the mineralized portions of the deposit; not even the veins are fissures, as far as I can learn, and the whole exploitation has been, so far, of the most haphazard nature possible to imagine.

There is some talk of setting up a custom mill in this locality, which will be fortunate enough for the district, but probably bad for the owners of the plant if the design is ever carried out.

Durango.—The Tamazula district, in this state, whose mineral centre is Topia, is one of the richest regions of the Pacific slope of Mexico. Topia is situated some 160 kilometres northeast of the city of Culiacan, capital of the state of Sinaloa, from which point a wheezy, rackety railroad runs down to the port of Altata, on the Gulf of California. The Gurney Milling and Mining Company, whose mines are near Topia, is said to have raised a fund of twenty millions of dollars for the construction of a railroad from the town of Topia to Culiacan. The distance by the ordinary mule road, for no wagons have ever traversed this very and most rugged portion of the great Sierra Madre, is said to be some 240 kilometres. Whether the road can get freight through, if built, is the present problem that is occupying the projectors. In my own opinion, whatever that may be worth, it would certainly prove a paying investment; it would traverse one of the very richest parts of Mexico and give a most wonderful impulse, not only to mining, but also to agriculture, for which the valleys are most admirably fitted. The greater part of the region from Culiacan up is admirably fitted for the cultivation of coffee and sugar, being splendidly watered, while the higher mountains are covered with vast growths of pine and the lower foot hills with forests of mahogany and rarer woods.

NEW SOUTH WALES.

Cobar.—This mine, which formerly gave employment to 500 people, has been idle since 1891. The main shaft is 660 ft. deep, and the vein at that point is 40 ft. wide, but water is scarce, and the nearest railway station is 60 miles distant. The mining registrar reports that if work is resumed the ore must be sent to Lithgow, 400 miles distant, for smelting, owing to the difficulty of obtaining fuel at the mine.

NEW ZEALAND.

Gold.

Mangahua.—The official return places the production of gold in this district for the year 1892 at 26,721 oz., of which 5,085 oz. were from placer workings, and 21,636 oz. were obtained from 38,561 tons of quartz crushed.

NOVA SCOTIA.

According to the report of the Mines Department for 1892, the number of gold mines worked in the province were 30, on which 120,761 days' work was done. The number of stamp mills were 24, and 32,552 tons were crushed. The output was 19,988 oz. of gold. Since the report was completed, additional returns were received from the Waverly mine showing that 1,051 tons of quartz were crushed in November and December, yielding 332 oz. gold.

Boston & Nova Scotia Railway and Coal Company.—A bill to incorporate this company was recently introduced into the legislature. This company has acquired valuable coal areas in Inverness County, Cape Breton Island, known as the Broad Cave mines. On account of the poor shipping facilities very little work has been done at these mines in the past. Broad Cove is 32 miles from the government line of railway. The Dominion Government has voted $55,000 subsidy for the building of a road to Broad Cove, and the local government has offered a subsidy of $3,200 per mile for the same work. This road will tap the government line at Orangedale. Four charters have already been granted for a company to build this road, but so far nothing has been done. The new company proposes to commence active operations at once at the mines and also to start the construction of the road as soon as the bill passes the legislature. Great improvements will be made to Broad Cove, and a steamer will be placed on the route to Boston to carry the coal.

Broad Cove Coal Mine.—This property has been sold by the Inverness Coal, Iron & Railway Co. to Mr. Wm. P. Hussey, of Massachusetts, for $100,000.

Consolidated Scotia Coal Co., Limited.—This company has been incorporated at Halifax with a capital of $500 000, with right to increase the same to $1,000,000.

Nova Scotia Gold Mine, Limited.—The last clean up gave 160 oz. of gold from 150 tons of quartz crushed.

North Star Company.—The last four clean-ups yielded gold worth $11,000, the last being 128½ oz.

Richardson Mine.—The 15-stamp mill is now working full time and it is proposed to add 5 stamps, raising the capacity to 500 tons per month. Two shafts are down, the one 35, the other 60, feet.

Vogler's Cove Gold Mining Company.—The dam and race are completed and the mill will be running by the last of April.

Hants County.

Provincial Manganese Company, Limited.—This company, recently organized with $75,000 capital,

has succeeded in placing a large part of its stock, and work has been begun on the development of the property, which adjoins the Churchill mine.

QUEENSLAND.

Coal has been discovered near Oakey. The diamond drill cut through a seam at the depth of 50 ft. which was 2 ft. 6 in. thick. A second seam at a depth of 63 ft. was 4 ft. 6 in. thick and of good quality.

Biggenden Mining Company.—This company's report for the six months ending December 31st, 1892, shows receipts of £3,431 tor gold sold and £3,210 for bismuth sold. The company paid £2,250 in dividends. During the half year the workings were mainly in the old 40-ft. level, and the ore taken out was of good quality. The work of developing the mine was pushed. A cross-cut has been run 120 ft. from the 150-ft. level, and is still advancing. The level following the course of the gold body has been driven 130 ft. and is now in fair paying bismuth ore. A cross-cut driven 35 ft. at the 70-ft. level is also in fair bismuth ore. There was a good supply of water during the half year.

VENEZUELA.

Callao Bis.—Latest advices state that the Independiente lode has not increased in size on the 3d level west, and it only shows traces of gold. On No. 3 up-raise a little ore was found, but it soon pinched out, and at present the air is bad, and it is difficult for the men to work. On Gribble's lode, crossent 2 has been advanced 16 ft. without finding any indication of the lode or branches. If nothing is found in the next 16 ft. the work will be abandoned at that point. Some ore has been taken out of No. 3 level on this lode. On the Providencia lode the quartz is 5 ft. wide on the 3d level east 162 ft. Only 20 stamps are working at the mill.

El Callao Mining Company.—Although the output of the company reached 4,000 oz. during January and 5,000 during February, this does not indicate any improvement in the condition of the mine, but to the continued robbing of the pillars, President Liceoni writing on this point, said: "We are forced to make the increase in output in order to collect a fund to build the road from the Colombia mine to the Callao mill."

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 page 432.]

NEW YORK, Friday Evening, May 5.

The mining market has suffered from the effects of the demoralization of the general stock market. The attention of the stock dealing public has been confined to the "industrials," and a few railroad stocks, and in the panicky feeling, which has prevailed during the greater part of the week, mining shares have been neglected.

For all the dullness in mining stock circles a more hopeful feeling is noticeable and brokers affect to believe that when the stock market quiets down the public will turn to mining securities.

There has been more inquiry for several Comstock stocks and prices show some improvement. Consolidated California & Virginia advanced from $2.45 to $3, with total sales during the week of 450 shares. Gould & Curry also shows an advance; it opened at 85c. and closed at $1.05: total sales, 400 shares. Ophir advanced from $2.90 to $3.60, and was in some demand during the week; transactions aggregate 400 shares. Other sales were as follows: 100 shares of Belcher at $1.35; 100 shares of Crown Point at $1.15; 100 shares of Hale & Norcross at $1.30; 200 shares of Overman at 35@40c.; 200 shares of Savage at $1.25@$1.40; 100 shares of Sierra Nevada at $105; 170 shares of Yellow Jacket at $1.35; 100 shares of Andes at 70c.; 400 shares of Best & Belcher at $1.70@$1.90; 100 shares of Chollar at $1.35; 1,200 shares of Comstock Tunnel at 9@10c; 350 shares of Mexican at $2.40@$2.65; 875 shares of Potosi at $2.65@$2.90; 200 shares of Union Consolidated at $1.50; 125 shares of Utah at $1.35.

Of the California stocks Bodie Consolidated shows sales of 300 shares at 35c. There was a sale of 100 shares of Mono at 20c. Of Quicksilver, common, 300 shares were sold at $2.88.

No sales of Brunswiek are reported this week. The superintendent writes as follows from Grass Valley, Cal., under date of the 26th ult.: We have only been able to work two days in the 700 drift since my last report owing to a breakage of the pumping machinery. The water rises very quick in the mine, and before we got the pumps started the 700 level was full of water. We are gaining on it slowly, and hope to resume work in the bottom Monday. The ledge in the 600 raise shows a little gold and sulphurets, but is still mixed with waste.

Of the Colorado stocks Leadville Consolidated was stationary at 17e., with total sales of 1,500 shares. There was a solitary transaction of 100 shares of Little Chief at 20e. Aecording to the official list of the Consolidated Stock and Petroleum Exchange Lacrosse was dealt in to the extent of 2,000 at 4@5c.

The same authority gives the sales of El Cristo at 100 shares at 24c., and of Monte Cristo 800 shares at $3.15.

Horn Silver was quiet; during the week 400 shares were sold at $2.90 to $3. This is the lowest priee which this stoek has reaehed for many months. The sales of ore for the three weeks ending April 21st amounted to $31,454.22. The expenses for the same period were not over $8,000. The mine continues in excellent condition.

During the week 3,000 shares of Phœnix of Arizona were sold at 12@16c. The reorganization committee has issued the following statement: "A very large majority of the capital stock having been already deposited with the State Trust Company under the plan of reorganization, the committee have declared the plan operative. Pursuant to provisions of the plan, the time for deposits of stock has been extended to May 15th, 1893. Stockholders who have not already deposited their stock may do so on or before that date, upon the payment, however, of an additional assessment of 5c. per share. The committee is authorized at its discretion to waive the payment of the additional assessment of 5c. per share in particular instances if satisfactory excuse is presented for the failure to deposit such stock within the time originally limited." There are over 500,000 of the 600,000 shares already in the possession of the State Trust Company.

Boston. May 4.

(From our Special Correspondent.)

The demoralized condition of the general stock market has caused liquidation in mining stocks, and the pressure to sell has resulted in a general decline all along the line. The proposition of the Boston & Montana to issue new stock was unfortunate just at this time, and the stock declined from $24¾ to $21¼, being the lowest price for it since it was placed upon the market. There was not much stock sold, as the short interest has been pretty nearly eliminated, and there is no disposition to buy it for the long account.

Butte and Boston, in sympathy with its neighbor, dropped to $7, considerable stock coming out at this figure. With its prospects, it certainly looks cheap at this price. Calumet & Hecla is the firmest stock on the list, and sold at $300 early in the week, but declined to $294 on the latest sales. Tamarack was heavy, and considerable stock was put on the market, causing a decline from $158 to $144. Quincy also settled to $115, a decline of $5 for the week.

Osceola opened the week at $32, but gradually settled to $26.50, the lowest price for the year, and if memory serves, has not sold so low since 1891. Centennial declined this week from $9.50 to $7. There is nothing we learn from the mine to warrant the decline, and it must be attributed to the heavy condition of the market. Franklin dropped to $12 and is well held at about this figure. Kearsarge held well at $7. There is not much stock pressed for sale at this price and it looks like a good purchase.

We note sale of Atlantic at $8.75, a decline of 25c. Tamarack, Jr., sold at $17 and $16, only small lots. Wolverine holds steady at about $2.50; National at $1; Allouez sold at 50c. and Bonanza at 29c. In silver stocks, Dunkin was the only one quoted, a lot of 200 shares selling at 14c.

San Francisco. April 28.

(From our Special Correspondent.)

The miniature "boom" that made trading so active for a few days a week ago did not continue. At the beginning of the current week prices gave way and buying was less lively. Yesterday the market has been heavy with light sales. Potosi has been an exception to the rule, however, having shown a gain on last week's ruling sale, and Yellow Jacket has maintained itself throughout the interval without showing a decline. The coming week is looked forward to with considerable interest, as work will probably have been begun by that time that will tend to place the stamp of stability upon the several improvements reported during the past month.

Of the North End Comstocks, Consolidated California & Virginia sold to-day for $2.60, a decline of 20 cents during the week. It closed at $2.50 bid. Ophir at $2.65, Mexican at $1.70, Sierra Nevada at $1.35 and Union Consolidated at $1.20 have also shown declines of from 10 to 20 cents per share.

In the middle group of Comstocks Potosi sold today to $2.70, being held at the close for $2.80. The developments in the mine are considered to be very encouraging, but this stock has been so often manipulated on the strength of reported possible ore developments that it is hard to believe that in the present instance an exception to the general rule is to be observed. Best & Belcher at $1.60, Chollar at $1.25, Gould & Curry at 80 cents. Hale & Norcoss at $1.15 and Savage at $1.20 have shown more steadiness during the week than the North Enders, but sales have not been heavy.

The Gold Hill and South End Comstocks, with the exception of Yellow Jacket, all have displayed a tendency to decline. Belcher sold this morning for $1.25; Bullion, 5½c.; Caledonia, 10c.; Challenge, 45c.; Confidence, $1.60; Con. New York, 10c.; Crown Point, $1; Exchequer, 10e.; Justice, 15c.; Kentuck, 35c.; Occidental, 25e.; Overman, 35c.; and Yellow Jacket for $1.20.

Of outside stocks Bodie has sold for 40e., Mono for 35e., and Bulwer has been held for 25c.

The Tuscarora & Quijotoa stocks have been left severely alone.

SAN FRANCISCO, May 5th (*By telegraph*).—The opening quotations to-day are as follows: Best & Belcher, $1.70; Bodie, 40c.; Belle Isle, 15e.; Bulwer, 25c.; Chollar, $1.20; Consolidated California & Virginia, $2.85; Eureka Consolidated, $1.50; Gould & Curry, 90c.; Hale & Norcross, $1.15; Mexican, $2.05; Mono, 20c.; North Belle Isle, 45c.; Navajo, 10c.; Ophir, $3.10; Savage, $1.25; Sierra Nevada, $1.50; Union Consolidated, $1.35; Yellow Jacket, $1.

MEETINGS.

Claudia J. Mining Company, at the office of the company, Mining Exchange Building, Denver, Colo., June 1st, at 10 a. m.

Golden Rule Mining Company, at the office of the company, Rooms 620 and 621 Ernest & Cranmer Building, Denver, Colo., May 9th, at 10 a. m.

Justice Mining Company, at the office of the company, No. 429 Mining Exchange Building, Denver, Colo., May 25th, at 2 p. m.

Minnesota Iron Company, at the office of the company, in Duluth, Minn., June 12th, at 11 a. m. Transfer books close May 26th and reopen June 14th.

DIVIDENDS.

Calumet & Hecla Mining Company, dividend of five dollars per share, $500,000 payable May 13th at the office of the company in Boston, Mass.

Consolidated Lehigh Slate Company. Coupon No. 6 of the first mortgage bonds of this company will be paid on and after May 1st at the office of the Central Trust Company of New York.

Mollie Gibson Consolidated Mining and Milling Company, dividend No. 34, of fifteen cents per share, $150,000, payable May 15th, at the office of the company in Colorado Springs, Colo. Transfer books close May 8th and reopen May 16th.

Pharmacist Mining Company, dividend No. 6, of one cent per share, $12.000, payable May 15th, at the office of the company in Colorado Springs, Colo. Transfer books close May 10th and reopen May 17th.

Rico-Aspen Consolidated Mining Company, dividend of two and one-half cents (2½c.) per share, payable May 15th, at the office of the company, room 72, No. 22 William St., Denver, Colo. Transfer books close May 10th and reopen May 16th.

Victor Gold Mining Company, dividend No. 3, of tive cents per share, $10,000, payable May 10th, at the office of the company, 40 Tabor Block, Denver, Colo. Transfer books close May 8th and reopen May 11th.

METAL MARKET.

NEW YORK, Friday Evening, May 5, 1893.

Prices of Silver per Ounce Troy.

April.	St. Ex.	London Pence.	N.Y. Cts.	Value of sil. in $1.	May	St. Ex.	London Pence	N. Y. Cts.	Value of sil. in $1.
29	4·88	38 5/16	83⅜	·645	3	4·88½	38⅜	84¼	·651
M y1	4·88½	38 5/16	83¾	·648	4	4·88	38 5/16	83¾	·648
2	4·88½	38 5/16	84⅛	·651	5	4·85½	38⅛	83⅜	·645

Under the demand of India orders silver had a sharp rise. Demands being satisfied, reaction set in—prices sagged off. The fall to-day was accentuated by the sudden decline in exchange to abnormal prices. Market closes uncertain.

The United States Assay Office at New York reports the total receipts of silver for the week to be 62,000 oz.

Gold and Silver Exports and Imports at New York Week Ending April 30th, 1893, and for Years from January 1st, 1893, 1892.

	Gold.		Silver.		Excess of
	Exports.	Imports.	Exports.	Imports.	Exports.
Week....	$3,261,550	$19,716	$473,350	$21,903	$3,694,181
1893.....	51,142,422	5,589,811	10,292,890	931,582	54,913,919
1892.....	20,159,403	5,917,619	8,379,773	460,887	22,160,670

NOTES OF THE WEEK.

The panic so often predicted and so much feared is at last upon us; many failures have already taken place and more will surely follow. There is, even now, rumors of the failure of a national hank. If this takes place the end is hard to foresee. The wisdom of the New York banks in refusing to part with their gold some ten days ago upon the basis proposed by the Secretary of the Treasury is more than made evident by the events of the last few days. Values, both of industrial and railroad securities, have shrunk enormously and prices to-day (Friday) are equal, if not below, the average following the great Baring failure of 1890, and the panic of 1884. As yet the failures have been restricted to brokers, and that it has not spread to the national hanks is in our opinion due to the resolution adopted by the New York banks not to tie up any of their loanable or reserved funds. Even as it is money is scaree and demands high rates of interest, and then is loaned only on unimpeaehable collateral. Industrial stoeks are not so elassified. It would be interesting and instructive as well to quantitatively determine the influenee of the Sherman Silver Purchase Aet in bringing about the present financial depression, whieh, although at present mainly restricted to finaneial eentres, may spread over the entire country and disastrously affect all our industries. The eomplicated nature of the problem precludes all hope of a complete solution, but there is little or no doubt that the influenee of the Sherman hill has been greater than any or all of the eauses eo-operating with it. Some of these eo-operating eauses being more simple in nature can be more eas-

ily gauged. Thus we know that the downfall of Reading was caused by the ambition of Mr. McLeod to control a great railroad system, and his inability to make a law unto himself in the matter of the anthracite coal trade. Even here, it is possible that the Sherman bill may have had a great influence, for it is now rumored that the primary fall in the stock was produced by John Wanamaker who, fearing a silver crisis and unable to persuade Mr. Harrison to issue bonds, threw his large holdings of stock upon the market while there was yet time to realize upon his investment. We know that the failure of the Pennsylvania Steel Company was due to the haggling spirit of its agent who, rather than place a time loan at a fair rate of interest, borrowed the money necessary to carry on the operations of the company, on call, in order to save a beggarly 1½ % in interest. We know that the drop in New England was caused by its association with Mr. McLeod. We know that the enormous fall or shrinkage of the industrials is due to speculation pure and simple; in fact, we have reason to believe that these stocks were listed for no other purpose than to afford to the speculative members of the stock exchanges an opportunity to indulge in their favorite pastime. It is also known that good stocks are sympathetically affected by the failures of worthless ones, and there is no reason to doubt that the present low price of some of our first-class railroad securities is more or less due to the necessities of those owning the more worthless industrials. There remains, however, outside of all of these depressing causes the dominating influence of the silver bill, which has made it obligatory upon the government to inflate the currency when there was no need for such inflation, and which renders it impossible to supply currency other than in a stated quantity when inflation is needed. It may fairly be said that the present crisis is due in a greater degree to the stringency of money than to any other cause. If, then, the present stringency is directly traceable to the Sherman bill our contention is proved.

As is well known, the first effect of the Sherman bill, and for which it was especially designed, was the inflation at the rate of some $5,000,000 per month of our currency. One year later this country saw the most magnificent crops of any year during its existence, which period of abundance was co-incident with failures of wheat and other cereals in Europe, and a tremendous shortage in India and Australia. Our trade balance for the year following, viz., the fiscal year 1892, was one of the greatest in our history. As was to be expected money became extremely easy; a large part of the land mortgages of Kansas and Nebraska were liquidated and business of all kinds received a welcome boom.

With the increased freedom from debt on the part of the West came the inevitable desire for greater luxuries. The consequence of this feeling is to be found in the increased imports of the present fiscal year, which are for the nine months ending April 1st $90,000,000 greater than for the corresponding period of 1892, and $47,000,000 more than our exports for the same period, while at this time last year the excess of exports over imports amounted to $209,000,000, a net change of over $250,000,000. The enormous increase of the imports during the present year has tended to cause a scarcity of money in two different ways. In the first place first place as the balance of trade is now greatly against us, we have been compelled to export large quantities of gold. The exports since January 1st have amounted to over $50,000,000, while during the same period the imports were only $5,000,000; a net loss in our currency of $45,000,000. For the nine months ending April 1st the exports of gold were $70,000,000 and imports $17,000,000; a net loss of $53,000,000. In other words, during the last year the volume of money has been diminished by over $50,000,000 by exports alone. In the second place, the large increase in imports has necessitated a corresponding amount of ready money to carry the same, and it is believed that at the present time not less than $40,000,000 of bank money is locked up in carrying goods imported within the last four months. We have here then a contraction of the currency equal to some $90,000,000.

For the last twelve months, belief has been general among our people that we are rapidly approaching a silver basis. This belief has created a widespread distrust and gold either as coin or as gold certificates has been hoarded. The amount so hoarded is of course a matter of conjecture. It has been estimated as high as $350,000,000, while none of the estimates have fallen below $100,000,000. Taking it at the minimum figure, which is, in our opinion, under the actual amount, we have a total contraction of the available currency of at least $190,000,000, due directly to the Sherman Act.

The specie holdings of European banks at the beginning of May were as follows:

	April 27, 1893.		April 28, 1893.	
	Gold.	Silver.	Gold.	Silver.
	£	£	£	£
England	25,309,018	...	24,279,452	...
France	66,951,918	51,141,952	57,899,000	51,123,000
Germany	32,676,750	10,892,250	35,652,000	11,884,000
Austria-Hungary	10,363,000	17,494,000	5,480,000	16,721,000
Netherlands	3,181,000	7,189,000	3,186,000	6,695,000
Nat. Belgium	2,837,333	1,418,667	2,831,333	1,415,667
Spain	7,713,000	6,126,000	7,440,000	4,056,000

It is now pertinent to inquire into the probable result of the present condition of affairs. As we have already stated, it is possible that the present depression may spread throughout the country and that business in the West and South will be more or less affected by the present stringency at the financial centres. Already there have been a few failures in the West and many more may occur. On the other hand, it is probable that the exports of gold will cease for some time at least and that foreign capital will take advantage of the low price of many stocks and find investment here. There is reason to believe, however, that investments will not be permanent unless Congress at its coming meeting shall see fit to repeal the Sherman bill, and as to this there seems to be room for considerable doubt, though it is again reported that Mr. Cleveland is exerting every endeavor to secure this end. Senator Vest is reported to have said that the silver men would demand some sort of a compromise, and he has suggested three plans:

First, to repeal the Sherman law and re-enact the Bland-Allison law, which provided for the coinage of not less than $2,000,000 per month in silver. Second, to coin the thousands of tons of silver purchased under the provisions of the Sherman Act, and, thirdly, to change the ratio between gold and silver, say, to 20 to 1, and to give silver free coinage at the new ratio. Senator Vest also says that a prominent free coinage advocate is preparing a bill providing for the free coinage of silver at the ratio proposed by the late Dr. Soetbeer.

From our private advices it would appear that there is little hope of repealing the Sherman bill at the coming session of Congress. Some Senators known hitherto as sound money men, it is said, will vote against its repeal, unless some substitute is provided insuring a regular increase in the currency. Some of these men have, we understand, suggested that this be accomplished by repealing the ten per cent. tax on State bank notes; others again have proposed that the present restrictions on the circulation of national bank notes be removed; either one of these plans, *if properly safeguarded*, would supply the great desideratum—an elastic currency—and would, in all respects, be better than the present issue of government notes at all times upon purchases of silver builion.

The operations of the Treasury Department during the month of April, as indicated by the debt statement issued May 1st, show a net decrease of public debt of $3,726,819, the bonded debt decreased $431,005 and the cash in the Treasury decreased $4,147,824, the net result of all being an increase of the debt. The coin certificates and the Treasury notes against which there was cash in the Treasury were at the end of the month $596,016,621, a decrease of $1,411,470. The total cash in the Treasury was $756,544 116, against which liabilities were outstanding, including $97,011,330 gold reserve, amounting to $732,072,542, leaving an available surplus of only $24,471,573. The receipts for the month of April were $28,399,942 and expenditures were $33,771,365. Customs receipts decreased over $4,000,000.

The coinage executed at the United States mints during the month of April aggregated 10,136,500 pieces of the value of $2,403,100 as follows: Gold, 160,500 pieces; value, $1,410,000; silver, 3,786,000 pieces; value, $868,000; minor coins, 6,190,000 pieces; value, $125,100.

Mr. James G. Martin, of Boston, has prepared a statement of the interest on railroad bonds, and other securities falling due in Boston during May. He recapitulates the amount as follows:

Railroad bonds	$1,479,295
City and State bonds	230,482
Miscellaneous bonds	485,370
Railroad companies	1,631,540
Manufacturing companies	112,500
Miscellaneous companies	1,559,160
Total	$4,898,347

as compared with $3,594,348 during May of 1892.

A number of the members of Parliament, among whom are George Howell, W. H. Grenfell, the Marquis of Carmarthen, Sir Henry Meysey-Thompson and others have signed a memorial asking Mr. Gladstone to re-appoint the delegates to the Brussels International Monetary Conference and that said delegates be instructed to give consideration to any method for increasing the use of silver currency.

LATEST, 4:30 P. M.—During the day the panic has increased in force owing to a general break in the industrials. Sugar, generally supposed to be strong, dropped from 86 to 63, Chicago gas from 74 to 60, General Electric from 80 to 69, and Manhattan from 124 to 115. In the afternoon a strong rally took place and prices recovered to a remarkable degree. The failures of Thursday and Friday are nine in number, the most important being Henry Allen & Co., B. L. Smyth & Co., Schuyler Walden, S. V. White and W. L. Patton & Co. London has been a strong buyer, and, under the circumstances, it may safely be stated that no gold will be exported for some time to come. Money closed from 25% to 40%.

Domestic and Foreign Coin.

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

	Bid.	Asked.
Mexican dollars	$.65¼	$.66¼
Peruvian soles and Chilian pesos	.59¼	.60
Victoria sovereigns	4.85	4.88
Twenty francs	3.86	3.89
Twenty marks	4.74	4.78
Spanish 25 pesetas	4.80	4.85

Copper.—The market has all along been very steady and, towards the end of the week, hardened somewhat, mainly because the Calumet & Hecla Co. have now raised their price to 11¼, firmly refusing to book orders at less, this after having sold largely to consumers, as recently noted. The other mining companies are still entering orders at 11c., and, considering that consumers have bought quite freely at about this price, it is not to be expected that there will be an advance, although there certainly is a rather firmer tendency. Electrolytic copper, in large quantities, has changed hands at 10⅝@¾; Arizona refined copper has been selling at 10⅝, common casting at 10¼@⅜, and in all descriptions a good trade has been doing. Arizona pig copper, 96 %, is also somewhat easier in price, and producers have signified their willingness to accept at 9⅜.

Exports are assuming larger proportions, and the demand from abroad continues to be quite good at present prices.

The London market has been fairly steady, Europe taking rather large quantities of refined copper from this side. G.M.B's close a trifle easier, at £4 5s. @ 7s. 6d. for spot and 10s. more for three months prompt, transactions having been limited because of the American pressure to sell. Refined and manufactured we quote as follows: English Tough, £47 5s.@£47 10s; Best Selected, £48 10s.@£49; Strong Sheets, £54 10s.@£55 10s.; India Sheets, £51@£52; Yellow Metal, 4¼d.

We are advised by cable that during the second half of April stocks decreased to the extent of 700 tons.

Abroad the demand is good, especially for copper for electrical purposes, and of furnace material there is a great scarcity, comparatively high prices being bid without bringing out sellers.

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

To Liverpool—	Copper Matte.	Lbs.	
S. S. Gallia	4,196 bags	478,365	$21,000
" Tauric	4,442 bags	507,395	23,000
" Nevada	2,383 bags	213,647	9,000
" Dalton	1,096 bags	120,465	5,000
To Hamburg—	Copper.	Lbs.	
S. S. Taormina	54 bbls.	67,500	$7,425
To Bristol—	Copper.	Lbs.	
S. S Chicago City	731 Pigs.	213,647	$21,000
To Havre—	Copper.	Lbs.	
S. S. La Touraine	4 casks	6,652	$1,000
" "	15 bars	2,046	1,000
To Rotterdam—	Copper.	Lbs.	
S. S. Maasdam	151 bars	56,118	$5,306
" "	1 cask	1,250	150
" "	90 pigs	22,468	2,200
To Vera Cruz—	Copper.	Lbs.	
S. S. Seneca	40 casks	50,000	$5,750

Tin has been rather flat, and sales have been made at somewhat lower prices. The stringency in the money market is the main cause as it compels weak parties to realize on their holdings. A few isolated lots of spot have been sold at 20½, but we have to quote 20⅝ as the proper figure for this delivery, and 20·80 for June and 21c. for July.

The London market also is easier, principally on account of the heavy failures among the Australian banks. Prices have given way to £92 15s.@£93 for spot, and to £88 for June, tin for delivery second half of the year, at seller's option, being quite nominal with no buyers.

To us it looks as if purchases made now on this side of the water would prove rather advantageous, considering that on account of the levying of the duty within a few weeks large quantities cannot be brought in later on.

Lead.—Since the prices gave way, as reported in our last, the market has become very dull with buyers shy and sellers rather anxious to market round lots. Under the circumstances, a further decline must inevitably be recorded. A few sales are reported as having been made at 4c. and more could no doubt be had thereat.

The foreign market is steady, although rather quiet, Spanish lead being quoted at £9 13s. 9d.@15s. and English at prices 2s. 6d. higher.

Spelter has been rather irregular, if not erratic; sales were made at as high a price as 4·30 and even 4·35 East St. Louis, but the strike expected to occur on the 1st having been postponed, for a time, these figures can be shaded somewhat. However, most of the producers are reluctant to offer anything, and we have to quote 4·55@4·60 New York.

In London good ordinary brands are quoted at £18 2s. 6d., and specials at £18 5s.

Antimony is dull and lifeless. Cookson's quoted at 10¾, L. X. at 10⅜ and Hallett's at 10@10⅛.

Nickel is unaltered at from 45@52c., nominally.

Quicksilver.—There is no change to report of the quicksilver market. Quotations are: New York, $39@$39.50; London, £6 15s.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, May 5, 1893.

Pig Iron Production.

Fuel used.	Week ending May 5, 1892.		Week ending May 5, 1893.		From Jan., '92.	From Jan., '93.
Anthracite	94	38,970	73	34,310	662,490	569,990
Coke	164	138,990	146	134,595	2,362,830	2,264,155
Charcoal	55	11,820	36	8,623	167,989	147,907
Totals	313	189,780	255	177,528	3,193,309	2,982,052

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.

The month opens without any change in the pig iron market. The dullness is as great as ever and consumers continue to pursue their hand-to-mouth policy in buying. The likelihood that prices will undergo a still further decline is not very great, but various conditions in the financial and business world tend to make purchasers extremely conservative. Low as the prices above quoted are, the trade would not be surprised to hear of a shading of them by furnaces in need of funds, although we do not hear of any sales making at lower figures. The market may be described as being very dull and altogether featureless.

Billets and Rods.—Steel billets, tidewater, $25.25@$25.50; foreign, $29@$29.50; wire rods, $33.50@$34; foreign, $40@$40.50; Swedish, $52@$53.

Manufactured Iron and Steel.—A few fair-sized sales of structural materials are reported this week and several orders are being bid for. Prices continue low. We quote: Angles, 1·8@2c.; axles, scrap, 1·90@2·10c., delivered; steel, 1·85@2c.; bars, common, 1·55@1·60c.; refined, 1·65@1·9c. on dock; beams, up to 15 in., 2@2·15c.; 20 in., 2·35@2·4c.; car truck channels, 2@2·10c.; channels, 2·10@2 20c., 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, 2·25@2·50c.; marine, 2·50@2·75c.; sheared, 1·85@2·10c.; shell, 2·10@2·25c.; tank, 1·8@2c.; universal mill, 1·85@1·90c.; tees, 2·30@2·60c., all on dock.

Merchant Steel.—There is nothing new to report of this market. 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, $1.70@$1.75; open hearth machinery, $2.30@ $2.40: open hearth carriage spring, $2.10@ $2.20; crucible spring, $3.75@$4.

Old Material.—We hear of a sale of a few hundred tons of car wheels at $13, otherwise this market has been lifeless. We quote: Rails, iron, $16.50@$17; steel, $13@$13.50; No. 1 scrap, $15.75@$16; car wheels $12.50@$13 f. o. b. Jersey City.

Rail Fastenings.—There is nothing doing in rail fastenings. 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.—We hear of no sales of either of these. Quotations are nominally as follows: 10 to 12% Spiegel, $22@$22.50, 20% $25@$25.50. Ferro, 80% $57@$57.50.

Steel Rails.—The rail market is as dull as ever and no sales of any importance are reported. Quotations are unchanged at $29 mill or tidewater. Girder rails, $31@$33. Steel rails fit to relay can be had for $20.

Buffalo. May 4.

(Special Report from Rogers, Brown & Co.)

Several good sized orders have been placed during the week, but the general situation does not show much improvement. The uncertainty of all things connected with business now hanging over the country is having a very depressing effect on pig iron.

We quote for cash f. o. b. cars Buffalo: No. 1 X foundry strong coke iron, Lake Superior ore, $14.50; No. 2 X foundry strong coke iron, Lake Superior ore, $13.75; Ohio strong softener No. 1, $14.50; No. 2, $14; Jackson County silvery No. 1, $17@$17.30; No. 2, $16.30@$16.80; Lake Superior charcoal, $16.75; Tennessee charcoal, $18; Southern soft No. 1, $14; Alabama car wheel, $19; Hanging Rock charcoal, $20.50.

Chicago. May 4.

(From our Special Correspondent.)

A careful canvass among the dealers in pig iron and furnace agents reveals the fact that so far they have experienced no ill effects from the molders' strike. Some 43 foundries and machine shops doing their own smelting have signed the new scale, and no further trouble from the men is expected. Business in crude iron of Northern and Southern make has been uneventful during the past week. With one or two notable exceptions transactions have rarely exceeded several hundred tons, but there is a steadily increasing consumption in this vicinity. Several of the larger implement makers have also placed season's contracts for pig iron, iron, steel bars and special steels. In these latter prices are on the same basis as a year ago. On the whole the iron trade is in fair shape and less gloomy than might be expected.

Pig Iron.—The largest contract taken the past week for local coke iron was 2,000 tons for an implement concern. There is quite a good inquiry floating around and dealers look for an increased volume of business during May. Southern coke iron is in moderate demand and prices if anything a little weaker with a good deal of irregularity. Lake Superior charcoal iron is in some demand in lots of 100 to 200 tons at steady prices.

Quotations per gross ton f. o. b. Chicago are: Lake Superior charcoal, $16.50@$16.75; Lake Superior coke, No. 1, $13.75@$14.00; No. 2, $13.25@$13.50. No. 3, $12.75@$13; Lake Superior Bessemer, $14.75; Lake Superior Scotch, $14.50@$15; American Scotch, $16.00@$16.50; Southern coke, foundry, No. 1, $14.25; No. 2, $13.00; No. 3, $12.50; Southern coke soft, No. 1, $13.00; No. 2, $12.75; 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, $19.50@$20.

Steel Billets and Rods.—The steel mills here report a light demand and prices unchanged at $25 for billets and $32.50 for rods, from stock.

Structural Iron and Steel.—Small lots of beams are in fair request, but the bulk of the inquiry is from outside towns. The buildings on the site of new "Stock Exchange" are being razed. The contracts have been pending some time, but were closed last week. Another office building near the post office has been contracted, requiring 1,000 tons of steel and iron. Quotations, car lots, f. o. b. Chicago, are as follows: Angles, $1.85@$1.90; tees, $2.15@$2.25; universal plates, $1.90@$1.95; sheared plates, $1.90@$1.95; beams and channels, $1.95@$2.15.

Plates.—Manufacturers' agents continue to report an unsatisfactory condition of business, both as regards orders and prices. Warehouse trade is only fair. 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, $2.75 @$3; boiler rivets, $4@$4.15; boiler tubes, all sizes, 60%.

Merchant Steel.—Several large contracts were placed aggregating a good tonnage, and the special features to be noted are that the prices are precisely the same as a year ago. This steadiness in values is stimulating consumers to place orders. 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, $1.70@ $1.75; open hearth machinery, $2.30@$2.40; open hearth carriage spring, $2.10@$2.20; crucible spring, $3.75@$4.

Galvanized Sheet Iron.—A good demand is noted in car lots, and also from warehouse, with steadier discounts at 70 and 10 and 5% 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.—A number of outside contracts were placed last week for delivery before July 1, and at better prices than for late summer shipments, on which 2·80c. for No. 27 common is quoted. Jobbing quotation is quoted 3·10 for iron and 3·10@3·15c. for steel of the same gauge.

Bar Iron.—Inquiry from the implement trade is more active and a mill near here booked 4,000 tons of iron and steel bars at a low price. Some mills refused to meet current quotations, as being too close to cost. Regular prices are 1·50@1·53c. for Chicago. Warehouse business is quoted at 1·65@ 1·75c. for iron or steel bars.

Steel Rails.—Large orders are still withheld, and current business is confined to small quantities at 30@31·50c. Light rails for mine purposes are in better demand and some good orders have been entered.

Nails.—Wire nails continue in moderate demand from mill at $1.62½ base. Jobbing quotation in less than carloads is $1.70@$1.75. Steel cut nails, while in fair demand in mill lots, are easier in price at $1.30 base f. o. b. Chicago. Jobbing quantities are selling at $1.40.

Scrap.—The cheaper grades are in better demand than any other kind just now. Prices are without change. Railroad, $15; No. 1 forge, $14; No. 1 mill, $9.50; fish plates, $15.50; axles, $19.50; horseshoes, $15; pipes and flues, $7; cast borings, $5.50; wrought turnings, $8; axle turnings, $9.50; machinery castings, $10; stove plates, $6.50; mixed steel, $10; coil steel, $15; leaf steel, $15.50; tires, $14.50.

Old Material.—Stocks in holders' hands are reported large. Buyers offer $17.25@$17.50, and railroads want $18, or equal to that for delivery elsewhere. No sales are noted. Steel rails are dull at $11@$14.50, as to condition, etc. Car wheels are easy at $14.50.

Louisville. May 4.

(Special Report by Hall, Bros. & Co.)

Quietness still pervades the iron market. No trades of note have been recorded for the past week. The effect of several recent large iron and steel failures is the current topic of discussion, and naturally tend to further depress an already dull market. Prices of pig remain irregular and concessions are often heard of, but nominally it may be said quotations remain unchanged.

Hot Blast Foundry Irons.—Southern coke, No. 1, $13@$13.25; Southern coke No. 2, $12@$12.25; Southern coke No. 3, $11.25@$11.50; Southern charcoal No. 1, $15.50@$16; Southern charcoal No. 2, $15@$15.50.

Forge Irons.—Neutral coke, $10.75@$11; mottled, $10.50@$10.75.

Car Wheel and Malleable Irons.—Southern (standard brands), $17.50@$18.50; Southern (other brands), $16.50@$17; Lake Superior, $18@$18.50.

Philadelphia. May 4.

(From our Special Correspondent.)

Pig Iron.—Anticipations of greater activity have not as yet been realized. The week's business in deliveries on old contracts was large, but new contracts were unimportant, neither buyers nor sellers showing any concern. Founders buy only as iron runs out and mill men are doing pretty much the same. No. 1 averages $15; No. 2 is going at about $14.25 and mill brands at $13. Freights are $2.25 from Virginia and $4.30 from Alabama furnaces. Some few Southern makers are again trying to place iron in this locality.

Steel Billets.—Buyers continue to take billets in a small way. Offers are made at $24 for early deliveries. The hesitancy to do business grows out of the belief among manufacturers that when general activity sets in much more steel material will be wanted and prices will move up a peg.

Muck Bars.—A small business has started up on a basis of $22.50, mill price, but there is not much shown yet.

Merchant Iron.—Steel bars have been more freely called for of late and more attention is being given to this product. A fair volume of business is being done in bar iron and a further improvement is expected in the iron offices.

Nails.—An active distribution in small lots from store is about all that can be said this week.

Skelp.—Mills are reported as filling up with business.

Pipe.—The placing of several large orders for wrought iron pipe within a few days has stimulated buyers of smaller quantities to come in, and manufacturers take this as evidence of coming activity, and they hope some improvement in prices.

Sheets.—Despite the large volume of business done the card rates do not improve, and buyers say they can place all the orders they want filled for the next six months at present selling figures.

Plate and Tank.—The large order referred to last week of the New York Central Company will run into some 30,000 tons when it is all counted up, according to the statements of the people here who have inside knowledge. An order was placed with the Pencoyd mills for material (5,000 tons) for a large building in New York City. Orders for smaller lots, aggregating 3,000 tons, were also placed.

Structural Material.—The orders above referred to will put the structural mills in better shape than they have been for months. Beams are 2c., angles 1·80. Small orders are increasing.

Steel Rails.—Small orders are rushing in at $29. Large orders would presumably be taken at less. Light sections are being inquired for.

Old Rails.—There are plenty to be had at $18.

Pittsburg. May 4.

(From our Special Correspondent.)

Raw Iron and Steel.—The market at present is far from being satisfactory. Prices for most descriptions are unsettled, and in many instances show a wide range in values. Sales of certain kinds were of limited amounts. In other descriptions sales have been made on a more liberal scale, furnishing evidence that certain consumers have made up their minds that prices will go no lower with chances that they may advance; hence their purchases are in accordance with their views. In confirmation of this view the sales of Bessemer pig and steel billets, blooms and slabs since the middle of April have been on a large scale, extending from July to January, 1894, at prices that are now current. It is also reported that many furnaces have sold all their product for the balance of the year.

There is a heavy consumption of crude material, and the mills, generally, have a large quantity of work on hand, but the delay in specifications has to a certain extent prevented the completion of many of these contracts and kept the mills irregularly employed. As previously noted, the leading producers are well sold ahead, while other grades are not in such plentiful supply as to lead the furnaces to shade prices to effect sales. The situation is not, however, without encouraging features. There is a heavy consumption of iron; stocks both in producers' and consumers' hands are of moderate amounts and the output is not in excess of the demand. Sales show a wide range in values.

Coke Smelted Lake and Native Ore.

Tons.	Cash.
20,000 B., Valley Furnace, July to Jan	$12.90
5,000 B., Valley Furnace, July to Jan	12.90
2,500 B., May, June	13.60
2,000 B., July, Aug	13.50
2,000 B., May, June	13 55
2,000 B., July, Aug	13.55
1,500 B., May, June	13.50
1,000 B., Aug., Sept	13.50
1,000 B., May, June	13.40
1,000 G. F.	12.25
1,000 G. F.	12.25
1,000 Mill Iron	12 25
500 G. F.	12.25
500 G. F.	12.25
300 No. 1 F.	14.00
300 No. 2 F.	13.00
200 W. I.	12.00
150 No. 1 S.	16.00
100 No. 2 S	15.00
100 O. M.	12.60

Blooms, Billets and Slabs.

6,000 B., July to Dec., at mill	$22.00
4,000 B., July to Dec., at mill	21.75
2,000 B. and S., May, June, at mill	22.00
1,000 B., May, June, at mill	21.85
500 B., May, June, at mill	21.80

Charcoal.

Tons.	Cash.
150 F., off grade	$18.00
150 C. B.	26.00
75 C. B.	26 50
50 No. 2 F.	19.00
50 No. 3 F.	18.50

Muck Bar.

300 N., May	$24.15
250 N., May	24.20
200 N., June	24.15

Skelp Iron.

700 N. G.	1.50	4 m.
360 S.	1.70	4 m.
200 W. G.	1.50	4 m.

Steel Skelp.

450 W. G.	1.47½@1.50 m.

Sheet Bars.

1,000 S. B., at mill	28.50

Spelter.

150 Spelter	4.42
75 Spelter	4.45

Bar and Billet Ends.

1,500 B. and B. ends	15.00

Old Iron and Steel Rails.

300 I. R.	20.00
250 S., long	15.89

Scrap Material.

400 No. 1 R. R. W. S., net	15.00
300 C. B., gross	18.00
200 C. M. S., gross	14.00
100 W. I. T., net	10.00

COAL TRADE REVIEW.

NEW YORK, Friday Evening, May 5.

Statement of shipments of anthracite coal (approximated) for week ending April 29th, 1893, compared with the corresponding period last year:

	April 29, 1893. Tons.	April 30, 1892. Tons.	Difference.	
Wyoming region	454,084	449,418	Inc.	4,666
Lehigh region	157,183	124,464	Inc.	32,719
Schuylkill region	232,846	211,094	Inc.	21,752
Total	844,113	784,976	Inc.	59,137
Total for year to date	13,222,025	12,033,192	Inc.	1,188,833

PRODUCTION OF BITUMINOUS COAL for week ending April 29th and year from January 1st:

Shipped East and North:	1893. Week.	1893. Year.	1892. Year.
Phila. & Erie R. R.	1,477	40,532	30,852
Cumberland, Md.	98,827	1,267,708	1,141,278
Barclay, Pa.	1,178	23,506	67,605
Broad Top, Pa.	14,920	263,253	200,935
Clearfield, Pa.	97,371	1,425,942	1,249,187
Allegheny, Pa.	32,857	446,109	390,532
Beach Creek, Pa.	28,745	617,700	894,542
Pocahontas Flat Top	78,445	953,143	816,016
Kanawha, W. Va.	46,275	1,029,975	808,312
Total	400,075	6, 67,868	5,559,659
Shipped West:	**1893. Week.**	**1893. Year.**	**1892 Year.**
Pittsburg, Pa.	27,296	435,685	438,302
Westmoreland, Pa.	38,392	697,866	511,379
Monongahela, Pa.	9,639	219,725	169,944
Totals	75,327	1,353,279	1,119,625
Grand totals	475,402	7,421,147	6,719,284

PRODUCTION OF COKE on line of Pennsylvania R. R. for the week ending April 29th, 1893, and year from January 1st, in tons of 2,000 lbs.: Week, 105,363 tons; year 1,867,321 tons; to corresponding date in 1892, 1,905,379 tons.

Anthracite.

The month opens with a quiet and rather featureless market. The trade during the past week has developed nothing new, and the "uncertainty" and "unsettled feeling," words which many use when speaking of the market, are not in very strong evidence. The restriction in the production for this month is to all appearance being adhered to. The Reading company has suspended operations at 15 of its 51 collieries and other companies have redueed their time. If the agreement is carried out and the amount of coal mined during the month does not greatly exceed the allotment there is no reason why the market should not be in good condition next month, so far as the statistieal position is conеerned. Consumers are not buying as freely as was anticipated, and the western movement whieb was expected to beneiit the tidewater markets has scarcely commenced. Some coals, notably the free burning, are, we understand, accumulating somewhat, but we do not hear of any alarming stocking up. There is some speculation as to a possible advance in price next montb; it is said that the market in its dull state can not stand the raise, but on the other hand the fact is addueed that the restriction in the output for May will do much to strengthen the market by clearing it of superfluous stoeks and thus render possible the advance of 25c. per ton. Certain it is that this has influeneed many dealers, who believe that prices will not go any lower this year and there has been a fair demand from certain quarters.

Tbere is not, as far as can he ascertained, much cutting of prices, which are reported 25c. below the gross eircular. On tbis basis stove and chestnut are selling at $3.90, and egg at $3.65.

The Reading Railroad system reports that its coal shipment (estimated) for last week, ending April 29th, was 420,000 tons, of which 30,000 tons were sent to Port Richmond and 60,000 tons to New York waters. Vessels are in moderate supply at Port Riehmond, and freights are nominally quoted at $1.05@$1.15 and discharge to Boston, and 95c.@$1 to Providence.

The committee from the Pottsville Coal Exchange appointed to arrange wages for the Schuylkill region has fixed the rate at 2% below the $2.50 basis for last half of April and first half of May.

The Reading company is taking advantage of the suspension of operations at its collieries to make extensive repairs and improvements.

Prices are as follows:

Philadelphia.

	Broken.	Egg.	Stove.	Chestnut.
Hard white ash	$3.75	$3.75	$3.90	$3.90
Free white ash	3.65	3.65	3.90	3.90
Shamokin	...	3.90	4.10	3.90
Schuylkill R. A	....	4.00	4.25	4.00
Lykens Valley	4.50	5.25	5.50	4.75

New York.

	Broken.	Egg.	Stove.	Chestnut.
Hard white ash	$4.00	$4.00	$4.15	$4.15
Free white ash	3.90	3.90	4.15	4.15
Shamokin	....	4.15	4.35	4 15
Schuylkill	....	4.25	4.50	4.30
Lykens Valley	4.75	5.50	5.75	5.00

Pea, $2.75; No. 1 Buckwheat, $2@$2.10; No. 2 Buckwheat, $1.25@$1.50.

F. o. b. prices are quoted as under:

	Schuylkill.	Shamokin.	Red Ash.	Lykens Valley.
Lump and Steamboat	$2.20	$....	$ ...	$....
Broken	2.25	....	2.95	2.95
Egg	2.45	2.45	3.05	3.30
Stove	2.60	2.85	3.15	3.55
Chestnut	2.50	2.55	2.55	2.90
Pea	1.25	1.25	1.25	1.60
Buckwheat	0.75	0.75	0.75	1.30

Bituminous.

The soft coal trade just now is quiet and devoid of features of especial interest. We hear of little new business, with the exception of the rather large quantities taken by the warships now in this harbor. The amount of coal coming to seaboard is increasing and railroad facilities show a notable improvement. Should this bettered condition of affairs continue 1893 promises to show a larger yearly output than ever before known, for bituminous coal is eonstantly making inroads into fields where anthracite has hitherto been used exclusively. Notwithstanding the increase in production prices are firmly maintained.

The main feature of the week has been the decline in freigbts, owing to the surplus of vessels. From present appearances rates will go still lower. They are now as follows: From Philadelphia to Providence and New Bedford, 85@90c.; Wareham, $1.05; Boston, $1; Lynn, $1.15@$1.35; Salem, $1; Newburyport, $1.15; Portsmouth, $1.05; Dover, $1.35; Saco, $1.25; Portland, $1; Batb, $1; Gardiner, $1.10; Bangor, $1.05; New Haven, 85c. Baltimore rates are 10c. higher. New York rates are comparatively unchanged.

The strike of the Ohio soft coal miners continues. Tbe operators bave appointed a committee to manage the strike. Pending a settlement, their trade will be supplied with West Virginia coal.

Boston. May 5.

(From our Special Correspondent.)

The situation in anthracite remains unchanged. Consumers will buy only as they are obliged to, as they are still hopeful of lower prices. Stocks here in the meantime are getting beautifully less. Although the companies all maintain schedule prices outside individual operators are shading about 15c. per ton.

Prices quoted here are, f. o. b. net circular N. Y.: Stove, $4.15; egg, $3.90; free broken, $3.90; chestnut, $4.15; Lykens Valley (at Philadelphia) broken, $4.85; egg, $5.45; stove, $6.00; chestnut, $5.00.

In contract work there is not mueh doing. Some of the mills of Lowell closed this week for between 7.000 and 8,000 tons of New River coal. Spot coal is more plentiful than it was and does not bring as much as it did. George's Creek coal on ears here is worth $3.85@$3.90, and Clearfield about the same as the f. o. b. price at tide-water is held firm.

Freight rates are a little lower than they were. From New York, 75@80c.; from Philadelphia, 95c.@$1; from Baltimore, $1@$1.05; to Sound ports, 95c.; to Bath, $1.20; from Newport News, $1; to Sound ports, 90c.

A general reduction of 25c. per ton on the retail priees of coal was the feature of the week. This I expected, getting an inkling of such a projeet several weeks ago. The only wonder is that old prices were held up so long. It was probably owing to the exceptionally good demand in April, which was an unusually cool month and one in which a very large amount of coal was consumed. May, on the other hand, will be rather a quiet month, so it is anticipated. The new retail list is as follows: Stove, $6.25; nut, $6.25; egg, $6; furnace, $5 75; Franklin, $7.50; Lehigh egg, $6.25; Lehigh furnace, $6; soft coal, $4.25.

The reeeipts of coal at the port of Boston for the week ending April 29th were 43,601 tons of anthracite and 23,295 tons of bituminous, against 46,651 tons anthracite and 19,820 tons of bituminous for the corresponding week last year. Since January 1st receipts have been 485,546 tons anthracite and 365, 959 tons bituminous, against 601,637 tons anthraeite and 199,437 tons bituminous for the corresponding time last year.

Buffalo. May 4.

(From our Special Correspondent.)

The fixing of spring prices for anthraeite coal has not yet affected business. Trade is very quiet, with little of interest to report.

Bituminous coal is in good demand for vessels, tugs and manufacturers at nominally unchanged figures; supply adequate to all the requirements of the trade.

Dealers in coal, whether anthracite or bituminous, anticipate a large and profitable business this year. Shipments of coal by lake westward thus far bave been light, for the reason of the scarcity of anthracite.

Vessels have been chartered from Oswego, N. Y., to Duluth with coal at 90c. per net ton, free on and off.

Common Councilman Hanrahan, who was brought before our Mayor Bishop charged with selling coal to the city in violation of the charter, has been acquitted. He proved that the contract was made by and earried out by his son, and that he simply received the city drafts from his son as payment for the coal supplied. Mr. Hanrahan has been a dealer in fuel in this city for the past 25 years.

The firm of J. Langdon & Son, incorporated, dealers and miners of coal, of Buffalo, has undergone some important changes. Mr. C. L. Stillman was elected a director to fill a vacancy, and Mr. W. W. L. Sampson was appointed treasurer. Messrs. C. M. Underhill and C. L. Stillman have formed a copartnership as Underhill & Stillman, and have been appointed Western sales agents for the firm of J. Langdon & Co., with offices in Buffalo.

Nearly all the vessels which have cleared from Buffalo for Duluth have left light. They will make their way to Sault Ste. Marie Canal, and there await the opening of navigation at Duluth and Superior—which seems to be a long way off, from all accounts.

Bids were opened yesterday by the Board of Public Works of the city for supplying the water departments with 22,000 tons of anthracite grate coal for the current year. Mr. E. L. Hedstrom's bid was $4 per net ton, delivered by canal, or $3.92 per ton, delivered by rail. The Philadelphia & Reading Company made a flat bid of $4 net. The Mutual Gas Company offered to supply fuel gas at a priee equivalent to $4 per net ton for coal. It is presumed that the latter will continue to furnish fuel for the pumping stations, as the gas costs no more money, and a saving is effected by doing away with the carting of ashes and the dirt occasioned by the use of coal.

The shipments of coal from Buffalo by lake for the week ending April 29th were 69,658 net tons. The shipments for tbe season to Saturday last aggregated 178,044 net tons, distributed as follows: 105,474 tons to Chicago, 48,139 tons to Milwaukee, 3,900 tons to Duluth, 11,025 tons to Toledo, 600 tons to Detroit, 5,150 tons to Green Bay, 1,000 tons to Gladstone, 550 tons to Bay City, 206 tons to Port Colborne and 2,000 tons to Saginaw. Rates of freight were 60c. to Chicago, Milwaukee and Green Bay; 50c. to Gladstone, Sault Ste. Marie, Ashland, Marquette and Duluth; 25c. to Detroit; 25@30c. to Toledo; 40c. to Green Bay and Saginaw; 45c. to Kincardine; and on private terms to Pt. Colborne.

The coal docks of Milwaukee are crowded with vessels laden with fuel. It will be ten days at least before the present fleet can be unloaded, and more eraft are on their way to that port.

Coal freights are dead at Cleveland in eonsequenee of the Ohio miners' strike.

Conneaut Harbor, L. E., has been dredged to a depth of 17 feet through its entire length and in a few days will he ready to receive ore at the docks and ship coal therefrom. Thirteen Brown hoists will be in use, with all modern improvements.

Chicago. May 4.

(From our Special Correspondent.)

The cold, chilly, damp weather which prevailed throughout April continues and is conducive to a steady consumption of anthracite coal. Retailers are kept busy delivering small quantities, and odd carloads are going into the country to piece out the season. With regard to the new circular, most of the jobbers are disappointed that prices were not made lower as a starter and many of them are incensed at the rather disadvantageous terms whieh it would appear are to rule this season. Their commission has been eurtailed, and their purchases restricted to current month. Much dissatisfaction is expressed as the trade had been led to understand that they would be liberally considered in these matters as also in that of monthly settlements. There is some inquiry for coal, and one prominent shipper states that his sales so far exceed 30,000 tons for immediate shipment. Outside buying will probably be deferred until later in the month, or until buyers come in to see the Columbian Exposition and so combine business with pleasure. A fair amount of vessel coal is arriving and the docks are in good shape to receive it.

Bituminous coal is moving in a moderate way, both wholesale and retail, but without activity. The strike of the miners in Ohio, and particularly in the Hoeking Valley region, will not embarrass Chicago operators, as they have large stocks piled up and can stand a shut-down at the mines for 60 days. Hocking coal is now held firm at $3 on track, and some shippers are getting $3.10. At all of the Ohio ports coal for lake shipment is scarce and will be still more so by end of week. The block coal miners of Indiana have yielded to operators' terms and trouble with them has been averted. The scale to be paid for mining this grade is 75c. from May 1st to November 1st, and 80c. for the six months following. This arrangement is 5c. in favor of the mine owners as compared with their contract last year. The miners of Indiana coal at Coxville and Rosedale have gone out on strike and demand an advanee of 5c. per ton on pick work and 4c. on machine work. As the bituminous miners are well organized, they will probably be followed by all the men in the distriet, some 5,000. In the northern Illinois coalfield there is a good deal of discontent among the men, brought about by the visiting delegates from Ohio and Indiana. The chances are, however, that the miners in the Wilmington district will be conservative in their action. In central Illinois there is no trouble and none is expected; the scale is the same as last year.

Coke is in moderate demand, and now that the molders' strike is practically settled inquiry is already improving.

Quotations are: $4.65 furnace; $5.05 foundry, erushed; $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, $6.00; large egg, $5.35; small egg, range and chestnut, $5.60. Retail prices per ton are: Large egg, $6.75; small egg, range and chestnut, $6.75.

Prices of bituminous per ton of 2,000 lbs., f. o. b. Chieago, are: Pittsburg, $3.35; Hocking Valley, $3.10; Youghiogheny, $3.25; Illinois block, $2.50; Brazil block, $2.50.

Pittsburg. May 4.

(From Our Special Correspondent.)

Coal.—Wise councils have prevailed among the Monongahela miners; they have refused to go on a strike, and all are at work. They have all the work they want at 2½ cents in the fourth pool, and 3 cents in pools 2 and 3. There are empties sufficient in the pools to give them work for a long time. The Ohio River being in good boating order, coal has been shipped as fast as loaded. Coal shipped April, 1892,

was 8,536,000 bushels; coal shipped April, 1893, 14,709,000 bushels. May 2d, 3,000 acres of coal land lying in the fifth pool and on the Washington County side of the Monongahela River was sold for about $80,000. The coal will be developed at once.

Connellsville Coke.—Trade is gradually falling into the old rut it occupied during the latter part of last year. The production has been falling off little by little for some weeks, but last week it was over 3,000 tons short of what it was the week previous. The operators who are obliged to find a market for their coke report trade in an extremely dull condition, but have been holding off from blowing out their ovens as long as possible. A detailed report of the operation and output for this region for the week shows 12,725 ovens in blast and 4,601 idle, with an estimated production of 119,684 tons; compared with the production of the previous week shows a decrease of 3,206 tons: this is the biggest drop in production this year. Week's shipments aggregated 5,543 tons as follows: To Pittsburgh 1,612 cars; points west of Pittsburgh, 2,127 cars; points east of Connellsville, 1,804 cars.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, May 5.

Heavy Chemicals.—The heavy chemical market is quiet and altogether without change from our last report. There has been no feature in the trading of the past week which deserves mention. Caustic soda is quiet and without change as to prices. Alkali and carbonated soda ash have been in fair demand for future delivery. Foreign sal soda has been dull. For the domestic article some demand is reported. We quote 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%, 1·40@1·60c.; 58%, 1·35@1·40c. Alkali, 48%, 1·35@1·40c.; 58%, 1·30@1·40c., according to package. Sal soda, English, on the spot, 1c.; American, ·90@·95c.; bleaching powder, 2·25@2·50c.

Acids.—There is nothing of interest to report of the acid market. There is a fair demand for nitric and muriatic, and the usual business is doing in sulphuric. Prices show no change this week. Our quotations are as follows: 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°, $1.25@$1.50; nitric, 40°, $4; 42°, $4.50@$4.75; sulphuric, 85c.@$1.10; mixed acids, according to mixture. oxalic, $6.30@$6.50. Blue vitriol is quoted all the way from $3.25 to $3.75: glycerine for nitroglycerine, 11½@12½c., according to quality and quantity.

Brimstone.—There is no brimstone on the spot, and no quotation can be given. In future shipments a fair business has been done during the week. We quote brimstone to arrive as follows: Best unmixed seconds, $19; best unmixed thirds, $18.

Fertilizing Chemicals.—The month opens with a quiet fertilizer market, but without much accumulation of stocks. During the past week a fair trade has been done with Northern consumers. The demand from the South having ceased, the price of ammoniates has declined. Our quotations this week are as follows: Dried blood, $2.70@$2.75 per unit for high grade, and $2.55@$2.65 for low grade; azotine, $2.70@$2.75; sulphate of ammonia on the spot, $3.20@$3.22½ for gas liquor. No bone liquor is offering. Acidulated fish scrap, no stocks on hand; dried scrap is quoted at $29.50 f. o. b. fish factory. 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 Savannan, $1.17 ewt., 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 $1.25. In their report on the phosphate market of the United Kingdom, dated London, April 17th, Messrs. Couper, Millar & Co. say: The position remains very much as stated in our last circular. Nitrogenous materials continue in active request, and supply being very limited prices are well supported. Phosphates there has been little improvement in, but we hear of raisers closing down, which must tell in time. There has been an immense demand for fertilizers, and little or no stock of superphosphate exists. Mineral Phosphates—Canadian we hear of no business in, but 10½d. per unit asked for 80%. South Carolina offering at 6½d. per unit. Florida hard rock, 75% guaranteed, offering at 8½d., and sales made into next year at 8¾d. net. River pebble none offering. Land pebble 70% finds a better market in United States. Ground somme, 10d. for 70% and 11d. for 75%, basis c. i. f. London, but no business is reported for United Kingdom. Ground Belgian remains at about 5d. unit f. o. b.

Muriate of Potash.—The scarcity of supplies on the spot, mentioned in our last week's report, continues unrelieved. Holders are asking from $1.83 to $2, according to quantity. 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.—This market is very quiet. 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 practically unchanged. Goods on the spot are held at $2.20@$2.25. Shipments and arrivals are according to position.

Messrs. Mortimer & Wisner, the well known brokers of this city, send us the following interesting statistics, issued on the 1st inst.:

	1893.	1892.	1891.
	Bags.	Bags.	Bags.
Imported into Atlantic ports from West Coast S. A. from Jan. 1, 1893, to date	192,151	236,658	263,013
Imported into Atlantic ports from Europe	16 712	.....	7,100
	208,863	236,658	270,113
Stock in store and afloat May 1, 1893, in New York	33.166	52,838	45,435
Boston	1,500	.....	.....
Philadelphia	.....	.....	.....
Baltimore	.....	4,800	8,000
To arrive, actually sailed	265,000	232,000	114,600
Visible supply to Sept. 1, 1893	299.666	289,638	168,035
Additional charters	200,000	170,000	220,000
Total supply, when shipped	499,666	459,638	388,035
Stock on hand, Jan. 1, 1893	15,454	53,585	36,454
Deliveries past month	56,578	89,888	126,.84
Deliveries since Jan. 1 to date	189,651	232,665	253,132
Total yearly deliveries	.....	685,158	631,207
Prices current May 1	2¼c.	1.70@1·72½	2.15@2.20

Included in the deliveries of 1893 are 9,500 bags shipped to European ports.

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, ℔ lb. .18@.25
Cbromic, chem. pure, ℔ lb. 1.00
for batteries .40
Hydrobromic, dilute, U. S. P. .25@.30
Hydrocyanic, U. S. P. .45@.50
Hydrofluoric .20@.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, ℔ lb. .04½@.05
Lump ℔ ton, Liverpool £5
Aluminum Chloride—Pure, ℔ lb. $1.25
Amalgamating solution, ℔ lb. .60
Sulphate, ℔ cwt. $1.90@$2.50
Ammonia—Sal., in bbl. lots, ℔ lb. .07½@.08
Carbonate, ℔ lb., English and German, .07½@.08
Muriate, white, in bbls., ℔ lb. .08½
Aqua Ammonia—(in cbys) 18° ℔ lb. .03@.04
20°, ℔ lb. .04@.05
26°, ℔ lb. .04¾@.05
Antimony—Oxymur, ℔ lb. .04@.06
Regulus, ℔ lb. .10@.11½
Argols—Red, powdered, ℔ lb. .15
Arsenic—White, powdered ℔ lb. .03@.03¾
Red ℔ lb. .065@.07
Yellow .08@.09
White at Plymouth, ℔ ton £12 2 6
Asbestos—Canadian, ℔ ton $50@$300
Italian, ℔ ton, c. l. f. L'pool £18@£60
Ashes—Pot, 1st sorts, ℔ lb. 4.75@5
Pearl .05¾@.06¼
Asphaltum—
Prime Cuban, ℔ lb. .04@.05
Hard Cuban, ℔ ton $28.00@$30.00
Trinidad, refined, ℔ ton $30.00@$35.00
Egyptian and Syrian, ℔ lb. .05@.07½
Californian, at mine, ℔ ton $12.00@$26.00
at San Francisco, ℔ ton, $15.00@$29.00
Barium—Carbonate, pure, ℔ lb. .45
Carbonate, commercial, ℔ lb. .05@.10
Cblorate, crystal, ℔ lb. .75
Cbloride, commercial, ℔ lb. .05@.10
pure, ℔ lb. .16
Iodide, ℔ oz. .40
Nitrate, ℔ lb. .06½@.07
Sulph., Am. prime white, ℔ ton $17.50@$19
Sulph., foreign, floated, ℔ ton $21@$24
Sulpb., off color, ℔ ton $11.50@$15.00
Carb., lump, f. o. b. L'pool, ℔ ton £6
No. 1, Casks, Runcorn, " " £4 10 0
No. 2, bags, Runcorn, " " £3 15 0
Bauxite—℔ ton $10.00
Bichromate of Potash—Scotch, ℔ lb. .11@.12
American, ℔ lb. .11@.12
Bichromate of Soda—℔ lb. .09½@.10
Borax—Refined, ℔ lb., in car lots .08@.09
San Francisco .08@.08½
Concentrated, in car lots .07½@.08
Refined, Liverpool ℔ ton £2

Bromine—℔ lb. .25@.35
Cadmium Minion—℔ lb. $2.00
Cadmium Iodide—℔ lb. $5.50
Chalk—℔ ton $1.50@$2.25
Precipitated, ℔ lb. .04@.06
China Clay—English, ℔ ton $13@$18.00
Domestic, ℔ ton $9@$11
Chlorine Water—℔ lb. .10
Chrome Yellow—℔ lb. .10@.25
Chrome Iron Ore—℔ ton, San Francisco $10.00
Chromalum—Pure, ℔ lb. .35@.40
Commercial, ℔ lb. .02½
Cobalt—Oxide, ℔ lb. $1.60@$1.70
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ordinary, ℔ lb. .03¾@.03¾
" extra .04½
Nitrate, ℔ lb. .40
Copperas—Common, ℔ 100 lbs. .85@.95
Best, ℔ 100 lbs. $1.35@$1.50
Liverpool, ℔ ton, in casks £2@£2 10s.
Corundum—Powdered, ℔ lb. .04½@.09
Flour, ℔ lb. .03
Cryolite—Pow., ℔ lb., bbl. lots .07@.08
Emery—Grain, ℔ lb. (℔ kg.) .04½@.05
Flour, ℔ lb. .02½@.04
Epsom Salt—℔ lb. .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., ℔ lb. .01@.01¼
Glass—Ground, ℔ lb .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
Cbloride 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 ℔ lb. $90
Iron—Nitrate, 40°, ℔ lb. .01@.01½
47°, ℔ lb. .02@.02½
Kaolin—*See China Clay.*
Kieserite—℔ ton $9@$10
Lead—Red, American, ℔ lb. .06¾@.07½
White, American, in oil, ℔ lb. .06½@.07½
White, English, ℔ lb., in oil .08¼@.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, ℔ lb. .05½@.07½
English flake, ℔ lb. .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, ℔ lb. .02½@.06½
Mercuric Chloride—(*Corrosive Sublimate*) ℔ lb. .62@.64
Powdered, ℔ lb. .6

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, ℔ lb. .25@$6.00
Naphtha—Black
Nitre Cake—℔ ton $10.00
Ochre—Rocbelle, ℔ lb. .01¼@.01¾
Washed Nat Oxf'rd, Lump, ℔ lb. .02½@.06¾
Washed Nat Oxf'rd, Powder, ℔ lb. .07@.07¼
Golden, ℔ lb. .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
Pitosphorus—℔ lb. .50@.55
Precip., red, ℔ lb. .80@.85
white, ℔ lb. .85@.90
Platinic Chloride—Dry, ℔ oz. $7
Plumbago—Ceylon, ℔ lb. .04@.05
American, ℔ lb. .05@ 07
Potassium—Cyanide, ℔ lb., C. P. .70
67%, ℔ lb. .45
fused .38@.40
Bromide, domestic, ℔ lb. .28@.32
Cblorate, English, ℔ lb. .18@.18¼
Chlorate, powdered, English, ℔ lb. .18½@.19
Carbonate, ℔ lb., by casks, 82% .04½@.05
Caustic, ℔ lb., pure slick .05½@.06
Iodide, ℔ lb. $2.58@$2.80
Nitrate, refined, ℔ lb. .06@.08
Bichromate, ℔ lb. .10@.11½
Yellow Prussiate, ℔ lb. .21½@.22½
Red Prussiate, ℔ lb. .29@.33
Pumice Stone—Select lumps, lb .03½@.15
Original cks., ℔ lb. .01½@.02
Powdered, pure, ℔ lb. .01½@.01¾
Pyrites—Non-cupreous, p. units .12@.15
Quartz—Ground, ℔ ton $6.00@$10.00
Rotten Stone, Powdered, ℔ lb. .03¼@.03¾
Lump, ℔ lb. .06@.07
Original cks, ℔ lb. .04½@.05½
Rubbing stone, ℔ lb. .03½@.04
Sal Ammoniac—lump, in bbls., ℔ lb. .80½
Salt—Liverpool, ground, ℔ sack .70
Domestic, fine, ℔ ton $7@$7.50
Common, fine, ℔ ton $4.50@$5
Turk's Island, ℔ bush .26@.28
Salt Cake—℔ ton $10.00@$15.00
Saltpeter—Crude, ℔ lb. .03½@.04
Soapstone—Ground, ℔ ton $8@$
Block and slab according to size.
Sodium—Prussiate, ℔ lb. .22@.24
Phosphate, ℔ lb. .04@.05
Stannate, ℔ lb. .06@.12
Tungstate, ℔ lb. .30@.35
Hyposulphite, ℔ cwt., in casks $1.70@$1.80
Strontium—Nitrate, ℔ lb. .08½@.09
Sulphur—Roll, ℔ lb. .01½@.01¾
Flour, ℔ lb. .01¾@.02
Sylvinit, 27@35%, S, O, P, per unit, 3.7@4

Talc—Ground French, ℔ lb. .01¼@.01¾
American No. 1, ℔ lb. .01¾@.01¼
American No. 2 006
Terra Alba—French, ℔ lb. .65@.80
English, ℔ lb. .65@.80
American, No. 1, ℔ lb. .60@.80
American, No. 2, ℔ lb. .40@.60
Tin—Crystals, in kegs or bbls. .14@.15
featbered or flossed, .9..
Muriate, single .07@.12
Double or strong, 54° B. .10@.15
Oxymur, or nitro .19
Vermilion—Imp. English, ℔ lb. .81
Am. quicksilver, bulk .57 @.59
Am. quicksilver, bags .58 @.60
Chinese .85 @$1.00
Trieste .90 @ .95
American .11½@ .12
Zinc White—Am., Dry, ℔ lb. .04½@.05
Antwerp, Red Seal, ℔ lb. .06¼@.07
Paris, Red Seal, ℔ lb. .07⅝@.08
Muriate solution .06
Sulpbate crystals, in bbls., ℔ lb. .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 .60
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. $5.00
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 $2.20
Thorium—(Metallic), per gram $17.00
Tungsten—(Metallic), per lb. .80
Uranium—(Oxide), per lb. $5.00
Metallic, per gm .20
Vanadium—(Metallic), per gm $22.00
Yttrium—(Metallic), per gram $9.00
Zirconium—(Metallic), per oz $6

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	April 29.		May 1.		May 2.		May 3.		May 4.		May 5		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Adams, Colo.													
Alice, Mont.													
Amador, Cal.													
Atlantic, Mich.													
Belcher, Nev.	1 35												100
Belle Isle, Nev.													
Bodie Cons., Cal.	.35												300
Bos. & Mont., Mont													
Breece, Colo.													
Bulwer, Cal.													
Caledonia, S. Dak.													
Catalpa, Colo.													
Chrysolite, Colo.													
Colorado Central, Colo.													
Commonwealth, Nev.													
Comstock T. bonds, Nev.	.14						.14		.15				3,000
" scrip., Nev.													
Cons. Cal. & Va., Nev.	2.40		2.80		2.75		3.00				3 00		450
Crown Point, Nev.									1.15				100
Deadwood, Dak.													
Enterprise.													
Eureka, Cons., Nev.													
Father de Smet, Dak.													
Freeland, Colo.													
Gould & Curry, Nev.	.85				1 00						1.05		400
Grand Prize, Nev.													
Hale & Norcross, Nev.											1.30		100
Homestake, Dak.													
Horn-Silver, Utah.					3.00		3.00	2.90			2 90		400
Independence, Nev.													
Iron Hill, Dak													
Iron Silver, Colo.													
Leadville Cons., Colo.			.17										1,500
Little Chief, Colo.							.20						100
Martin White, Nev.													
Mono	.20												100
Mt. Diablo, Nev.													
Navajo, Nev.													
N. Belle Isle, Nev.													
Ontario, Utah.													
Ophir, Nev.			2.90		3 65	3.60	3 60				3.35		400
Overman, Nev.					.40	.35							200
Plymouth, Cal.													
Quicksilver, Pref., Cal.													
" Com., Cal.					2.88								300
Quincy, Mich.													
Robinson Cons., Colo.													
Savage, Nev.	1.25				1 40								200
Sierra Nevada, Nev.									1.05				100
Silver Cord, Colo.													
Silver King, Ariz.													
Silver Min. of L. Valley													
Small Hopes, Colo.													
Standard Cons., Cal.													
Yellow Jacket, Nev.			1.35								1.15		170

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	April 29.		May 1.		May 2.		May 3.		May 4		May 5.		SALES
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alpha., Nev.													
Alta, Nev.													
American Flag, Colo.													
Andes, Cal.					.70								
Astoria, Cal.													100
Augusta, Ga.													
" bonds.													
Barcelona, Nev.													
Belmont, Cal.													
Best & Belcher, Nev.			1.70		1.85				1 90		1.90		400
Bonanza King, Cal.													
Brunswick, Cal.													
Bullion, Nev.													
Butte & Bost., Mont.													
Castle Creek, Idaho.													
Chollar.											1 35		100
Comstock T., Nev.	.09		.10		.11	.10							1,200
Con. Imperial, Nev.													
Con. Pacific, Cal.													
Crescent, Colo.													
Del Monte, Nev.													
El Cristo, Rep. of Col.					.24								100
Emmett, Colo													
Exchequer, Nev.													
Independence, Nev.													
Julia, Nev.													
Justice, Nev													
Kentuck, Nev.													
Lacrosse, Colo.			.04				.05	.04					2,000
Lee Basin, Colo.													
Mexican, Nev.					2.55		2 65		2.45		2.40		350
Minnesota Iron.													
Monitor, Colo.													
Monte Cristo, N. S. of C.	3.15		3.15				3.15		3.15		3.15		800
Nevada Queen, Nev.													
N. Standard, Cal.													
N. Commonwealth, Nev.													
Occidental, Nev.													
Oriental & Miller, Nev.													
Phœnix Lead, Colo.													
Phœnix of Ariz.	14	.13	1.16	.12	.13		.15	.12					3,000
Potosi, Nev.	2.90				2.70	2 65							875
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.					1 50				1 50				200
Utah, Nev.	1 35												125

*Ex-dividend. +Dealt in in New York Stock Ex. Unlisted securities. ‡Assessment paid. ‡Assessment unpaid. Dividend shares sold, 7,920. Non-dividend shares sold, 9,250. Total shares sold, 17,170.

BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	Apr. 28.		Apr. 29.		May 1.		May 2.		May 3.		May 4.		SALES.
Atlantic, Mich.			8.75								7.50		200
Bodie, Cal.													
Bonanza Development.							.20						100
Bost. & Mont., Mont.	25.00	23.75	24 00	23.25	23.50	21.50	23.25	22.50	22 75	21.25	22.00	21.25	7,685
Breece, Colo.													
Calumet & Hecla, Mich.	300		300		300	295	295		295	294	294	287	252
Catalpa, Colo.													
Central, Mich.													
Cœur d'Alene, Id.													
Con. Cal. & Va., Nev.													
Dunkin, Colo.											.14		200
Eureka, Nev.													
Franklin, Mich.	12.25		12.25						12.00		12.00		295
Honorine, Utah.													
Horn Silver, Utah.													
Kearsarge, Mich.	7.75	7.00	7.50		7.50		7 25		7.25	7.00	7 25	6 50	634
Lake Superior, Iron.													
Little Pittsburg, Colo.													
Minnesota Iron, Minn.													
Napa, Cal.													
Ontario, Utah.													
Osceola, Mich.	32.00	31.50	31 25	31.00			30.00		29.50		28 00	26.50	820
Quincy, Mich.	120						118		115		115		59
Ridge, Mich.													
Sierra Nevada, Nev.													
Silver King, Ariz.													
Stormont, Utah.													
Tamarack, Mich.	158		156	155	155		155	150	147	144	145	141	410
Tecumseh, Mich.													

NAME OF COMPANY.	Apr. 28.		Apr. 29.		May 1		May 2.		May 3.		May 4.		SALES
Allouez, Mich.					.60		.50				.50		1,310
Arnold, Mich.													
Aztec, Mich.													
Brunswick, Cal.													
Butte & Boston, Mont.	8.75						8 50		7.75		7 50	7.00	1,690
Centennial, Mich.	9.50	9.00			9 00		8 63	8.50	8.00	7.25	7.00	6.75	2,663
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.										1.00			100
Oriental & M., Nev.													
Phœnix, Ariz.													
Pontiac, Mich.													
Rappahannock, Va.													
Santa Fe, N. Mex.													
Shoshone, Idaho.													
South Side, Mich.													
Tamarack, Jr., Mich.													
Washington, Mich.							17.00		16 00		16 00		200
Wolverine, Mich.	2.50		2 50		2 75	2.50	2.25				2.50		1,565

Dividend shares sold, 10,655. Non-dividend shares sold, 7,528. Total shares sold, 18,183.

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.	Alaska	5,000,000	200,000	25				1,500,000	April	1893 .25
3	Alice, s.	Mont.	10,000,000	600,000	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.	1880 .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	*			760,000	Sept.	1892 .10
13	Aurora, l.	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 .19
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	0,000	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, l.	Mich	2,000,000	80,000	25	*			120,000	Mar.	1893 .50
27	Bulwer, g.	Cal.	10,000,000	100,000	10	80,000	Aug.	1889 .25	190,000	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 .08¼
30	Calliope, s.	Colo.	1,000,000	1,000,000					140,000	Jan.	1891 .00
31	Calumet & Hecla	Mich.	2,500,000	100,000	25	1,200,000			39,350,000	May.	1863 5 00
32	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50				645,000	April	1893 .75
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				129,500	April	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	Cœur 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	*			502,500	Jan.	1892 .05
40	Commonwealth, s.	Nev.	10,000,000	100,000	100	190,000	Sept.	1892 .10	20,000	Nov.	1890 .20
41	Confidence, s. L.	Nev.	2,496,000	24,960	100	1,589,350	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				1,360,000	Feb.	1893 .50
46	Coptis	Nev.	10,000,000	100,000	100				67,000	July.	1892 .12
47	Cortes, s.	Nev.	1,500,00	300,000	05	*			687,000	Mar.	1892 .50
48	Crescent, s. L. g.	Utah.	15,000,000	600,000	25	60,000	Oct.	1892 .10	238,000	Oct.	1888 .03
49	Crown Point, g. s.	Nev.	10,000,000	100,000	1 00	2,700,000	Sept.	1892 .25	11,898,000	Jan.	1875 2.00
50	Cumberland, L. s.	Mont.	5,000,000	500,000	10	*			15,000	Nov	1889 .08
51	Daly, s. L.	Utah.	3,000,000	150,000	20				2,762,500	April	1893 .25
52	Deer Creek, s. g.	Idaho	1,000,000	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	2,000,000	400,000	5				809,000	April	1863 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	$120,000	Feb. 1891 .20
2	Allouez, c.	Mich.	2,000,000	80,000	25	737,000	Jan. 1890 .70
3	Alpha Con., o. s.	Nev.	3,000,000	30,000	100	209,000	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, g.	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 .25
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. 1883 .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. o.	Nev.	10,000,000	100,000	100	2,890,000	Aug. 1892 .25
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 .08
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, g. 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, s. g.	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, g. s	Nev.	5,000,000	50,000	50	2,062,500	Jan. 1892 .25
45	Con. New York, s. g.	Nev.	5,000,000	100,000	10	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	10	*	
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	1,000,000	800,000			

DIVIDEND-PAYING MINES.

No.	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	[illegible]	, 0 00		[illegible]	10(,00(	Sept.	1892	.1(	60,[illegible]	Aug.	[illegible]	
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	*				973,045	Mar	1893	.10
59	Enterprise, s.	Colo.	2,500,000	500,000	5	*				825,000	April	1893	.(5
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	1,125,000	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	30,000	50					1,980,000	April	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	April	1886	.25
81	Homestake, G	Dak.	12,500,000	125,000	100	200,000	July	1878	1.00	4,978,750	April	1893	.10
82	Honorine, s. L.	Utah	500,000	250,000	2	37,500	April	1889	.05	125,000	Sept.	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					5,410,250	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	134,000	July	1889	.03	156,250	Nov.	1887	.07½
89	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*				215,000	Aug.	1892	.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					708,500	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					130,000	April	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					3,450,000	May	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					149,600	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					540,000	Apr.	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 Common w'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	471,689	Nov.	1892	.10	230,000	May	1888	.50
128	North Star, G.	Cal.	1,000,000	100,000	10					400,000	Mar.	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	1,595,800	Jan.	1880	1.00
132	Original, s. C	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					‡2,669,9[illegible]6	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	Ridge, C	Mich.	500,000	20,000	25	219,939	Mar.	1886	50	99,785	Feb.	1880	.50
150	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*				585,000	Mar.	1886	.05
151	Running Lode, G.	Colo.	1,000,000	1,000,000	1	*				36,000	May	1892	00 1-10
152	Savage, s	Nev.	11,200,000	112,000	100	6,772,000	Feb.	1892	.50	4,460,000	June	1869	3.00
153	Sheridan, s. G	Colo.	300,000	3,000	100	*				300,000	Oct.	1891	2.50
154	Shoshone, G	Idaho	150,000	150,000	1					7,500	April	1883	.01
155	Sierra Buttes, G.	Cal.	2,225,000	122,500	10					1,544,620	April	1893	.12½
156	Sierra Nevada, s. G.	Nev.	10,000,000	100,000	100	6,411,910	June	1892	.25	102,000	Jan.	1871	1.00
157	Sierra Nevada, s. L.	Idaho	1,000,000	1,000,000	1	*				40,000	May	1889	.02
158	Silent Friend	Colo.	500,000	500,000	1					60,000	Aug.	1891	.02½
159	Silver Cord, s. L. G.	Colo.	4,500,000	450,000	10					265,000	April	1889	.10
160	Silver King, s.	Ariz.	10,000,000	100,000	100	130,000	Nov.	1890	.30	1,950,000	July	1887	.25
161	Silver Mg. of L.V., s. L.	N. M.	500,009	500,000	1					300,000	Dec.	1891	4.05
162	Slide	Colo.	500,000	5,000	100					20,000	Nov.	1891	4.00
153	Small Hopes Con., s.	Colo.	5,000,000	250,000	20	*				32,00,000	Nov.	1892	.15
164	Spring Valley, G.	Cal.	200,000	200,000	1	50,000	Oct.	1886	.25	50,000	Jan.	1881	.25
165	Standard, G. s.	Cal.	10,000,000	100,000	100	100,000	June	'89	.50	3,655,000	Mar.	1893	.10
166	Stormont, s.	Utah	500,000	500,000	1	*				155,000	Nov.	1881	.05
167	St. Joseph, L.	Mo.	1,500,000	150,000	10	*				1,974,000	Dec.	1890	.02
178	Swansea, g. s.	Colo.	600,000	60,000	10					27,000	Mar.	1893	.10
169	Tamarack, C	Mich.	1,250,000	50,000	25	520,000	April	'85	3.00	3,160,000	Oct.	1892	.00
170	Teal & Poe	N. M.	150,000	150,000	1					9,000	Nov.	1891	.01½
171	Tombstone, G. s. L.	Ariz	12,500,000	500,000	25	*				1,250,000	April	1882	.10
172	Trinity Riv'r Hydr., G	Colo.	500,000	500,000	1	*				7,500	April	1893	.00½
173	United Verde, C.	Ariz.	3,000,000	300,000	10	*				207,500	Jan.	1892	.10
174	Victor, G	Colo.	1,000,000	200,000	5					30,000	May	1893	.05
175	Viola Lt., s. L	Idaho	750,000	150,000	5					337,500	Nov.	1888	.37½
176	Ward Con., s.	Colo.	2,000,000	200,000	10					20,000	Dec.	1889	.05
177	Woodside, s. L.	Utah	100,000	100,000	10					25,000	Oct.	1889	.25
178	W. Y. O. D.	Cal.	30,0,00	15,000	4	22,500	May	1891	.10	54,000	April	1893	.10
179	Yankee Girl, s.	Colo.	1,300,000	260,000	5					1,405,000	April	1891	1.50
180	Yellow Jacket, G. s.	Nev	12,000,000	120,000	100	5,808,000	Sept.	1892	.25	2,184,000	Aug.	1871	1.50
181	Yosemite No. 2	Utah	1,000,000	100,000	10					25,000	Oct.	1891	.05
182	Young America, G.	Cal.								175,000	Jan.	1884	1.00

NON DIVIDEND-PAYING MINES.

No.	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied	Date and am't of last.		
55	Denver City, s.	Colo.	5,000,000	500,000	11	*			
56	Denver Gold, G.	Colo.	300,000	60,000	5				
57	Dickens-Custer, s.	Idaho	2,100,000	420,000	5				
58	Durango, G.	Colo.	500,000	500,000	1	*			
59	Eastern Dev. Co., Lt	N. S.	1,500,000	150,000	10	990,000	Mar.	1886	1.00
60	El Dorado, G.	Cal.	1,000,000	250,000	4	*			
61	El Talento, G.	U.S.C.	1,000,000	500,000	2				
62	Emma, s	Utah.	625,000	500,000	125				
63	Emmons, s. L.	Colo.	2,000,000	2,000,000	1				
64	Empire, s.	Utah.	10,000,000	100,000	100				
65	Eureka Tunnel, s. L.	Nev.	10,000,000	100,000	100	*			
66	Exchequer, s. G.	Nev.	10,000,000	100,000	100	940,000	Jan.	1892	.25
67	Found Treasure, G. s.	Nev.	10,000,000	100,000	100	130,500	Jan.	1892	.50
68	Gogebic I. Syn., I.	Wis.	5,600,000	200,000	25				
69	Gold Bank, g. s.	Colo.	250,000	250,000	1	*			
70	Gold Cup, s.	Colo.	500,000	500,000	1	*			
71	Golden Era, s.	Mont.	2,000,000	200,000	10	*			
72	Gold Flat, G.	Cal.	1,000,000	100,000	10	5,000	Mar.	1892	.05
73	Gold King, g.	Colo.	1,650,000	350,000	5				
74	Gold Rock, G.	Cal.	1,000,000	500,000	2				
75	Golden Feather Co., g	Cal.	900,000	180,000	5				
76	Goodshaw, G.	Cal.	10,000,000	100,000	100	*			
77	Goodyear G. s. L	Mont.	1,000,000	200,000	5	13,000	Feb.	1892	.01
78	Grand Belt, C	Tex.	12,000,000	120,000	100				
79	Grand Canyon, s.	Ariz.	375,000	75,000	5				
80	Grand Duke, s.	Colo.	800,000	80,000	10				
81	Gregory Con., G.	Mont.	3,000,000	300,000	10				
82	Harlem M. & M. Co., G.	Cal.	1,000,000	200,000	5				
83	Hartery Con., G.	Cal.	1,000,000	100,000	10	22,000	Oct.	1890	.05
84	Hartshorn, g s. l.	S.Dak	1,250,000	250,000	5	8,750	Sept.	1891	.00½
85	Head Cent. & Tr., s. G	Ariz.	10,000,000	100,000	100	16,981	Mar.	1892	.03
86	Hector, G.	Cal.	1,500,000	300,000	5	45,000	Jan.	1889	.15
87	Highland, C.	Mich.	500,000	25,000	20				
88	Himalaya, g. s l.	Utah.	1,800,000	180,000	10	12,800	Oct.	1892	.00½
89	Holywood	Cal.	200,000	100,000	2				
90	Hortense, s.	Colo.	2,000,000	200,000	10				
91	Huron, C.	Mich.	1,000,000	40,000	25	280,000	May	1887	3.00
92	Idaho, g. s	Idaho	1,250,000	250,000	5				
93	Inez, s. L	Idaho	1,000,000	1,000,000	1				
94	Ingalls, g	Colo.	100,000	20,000	5				
95	Ironton, I.	Wis.	1,000,000	40,000	25				
96	Iroquois, C.	Mich.	1,250,000	50,000	25				
97	Kentuck Con	Nev.	10,500,000	105,000	00	57,750	July	1892	.10
98	J. D. Reymert, s.	Ariz.	10,000,000	100,000	100				
99	Julia Con., G. s.	Nev.	11,000,000	110,000	100	1,463,000	Jan.	1889	.10
100	Justice, g. s. C	Colo.	500,000	500,000	1	*			
101	Lacrosse, G.	Colo.	1,000,000	100,000	10	*			
102	La Cumbre, g. s	Mex.	150,000	3,000	50	*			
103	Lee Basin, s.	Colo.	5,000,000	500,000	10	*			
104	Little Josephine, s.	Colo.	250,000	50,000	5				
105	Lone Star Cons., G.	Cal.	500,000	500,000	1	10,000	April	1892	.00½
106	Lynx Creek, g.	Ariz.	237,500	147,500	5				
107	Madeleine, G. s. L.	Colo.	750,000	50,000	1	4,500	Feb.	1892	.00½
108	Mammoth Gold, G.	Ariz.	2,500,000	500,000	5	*			
109	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	Oct.	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. C.	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., G	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.	[illegible]	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				
201	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.	April 29.		May 1.		May 2.		May 3.		May 4.		May 5		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Balt. & Ohio	.....	.....	83⅞	83	82¼	81	.....	.....	80	78	80¾	78⅛	2,415
do pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buff., R. & P.	.....	.....	33	32¾	.....	.....	32	31⅜	32½	32	31	30	1,150
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambria Iron	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ches. & Ohio	23⅝	23¾	22¼	21½	22⅛	21⅝	21⅝	20⅝	21	19½	21½	17⅛	31,939
do. 1st pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do 2d pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col. C. & I	.....	.....	18	17½	17¼	16	16	15	16	15	16½	.....	2,114
Col. Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado Fuel	61¼	60	60	58⅜	58	57	57	55	54½	50	49¾	46¾	4,230
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col., H V. & Tol.	26¼	....	26	24	24	23¾	24½	22	23½	21¾	23¼	22	8,990
do. pfd	.....	.....	68½	68	.....	.....	.....	.....	.....	.....	63	.....	230
Col. & H. Coal	13¾	11½	12	.....	10¾	9⅝	9	8⅝	9	8	8½	7½	3,440
do. pfd	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cons. Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & Hud. C	128	127½	127	126½	127	126	127	126	126¾	125	124	121	8,133
Del., L. & West.	144⅜	142⅝	143⅜	141	142⅜	141⅜	141⅝	140⅜	141¾	140¾	141⅜	138½	48,670
Hunt. & B.Top.	36½	36	35½	.....	35½	.....	.....	.....	.....	.....	.....	.....	220
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lake Erie & Wes	.....	.....	21	20¼	20¼	20	19⅜	19	18	17	19⅛	17⅜	6,053
do. pref	76⅛	.....	76	74¾	75	74½	73½	72	74	68	70	.....	2,823
Lehigh C. & N	.....	.....	.....	.....	*51¾	.....	51¾	.....	51¾	.....	.....	.....	355
Lehigh Valley	49	48½	48¾	48⅜	48⅝	48⅜	48¾	47⅞	47¾	47½	.....	.....	5,900
Mahoning Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland Coal	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris & Essex	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Cent. Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. J. Central	116	.. ..	114¾	113¾	113½	.....	112½	111	111⅝	107¾	109	104½	5,770
N. Y., L. & W	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Y., L. E. & W	2¼	2⅛	2⅛	1⅞	2¼	1¾	2¼	1¾	1⅞	1⅝	2⅛	1¾	35,430
do. pref	.....	.....	42	41	42	41¾	40	39	39	38	39¾	37½	4,850
N. Y., Susq. & W	16½	.....	16½	15⅝	15½	15⅜	15¼	14	14½	13¾	15½	14	7,430
do. pref	.....	.....	67	65	62	.....	62	60	59⅝	57½	.....	.. ..	2,465
N. & West	.....	.....	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	450
Penn. R. R.	54⅛	54	54	*53⅛	52	51⅞	51⅜	51⅜	51½	51⅜	..	.....	5,785
Phil. & Reading	26⅝	25¼	26⅝	24⅝	25¾	25	25⅜	24	24⅜	24	25½	24	283,524
Tenn. C. & I	20	19⅝	20	18¾	20	19½	19¼	18⅝	19⅛	18	20¾	19	8,030
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
Wheel. & L. E.	.....	.....	.....	.....	16	.....	15⅜	.. ..	13⅞	10⅜	13¾	12	2 015
do. pref	.....	.....	57	.....	.....	.....	.....	.....	51	47	47½	45¼	1,755

*Ex-dividend. Total shares sold, 453,345.

INDUSTRIAL AND TRUST STOCKS.

NAME OF STOCKS.	April 29.		May 1.		May 2.		May 3.		May 4.		May 5.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Adams Express	.....	.....	.....	.....	.....	.....	.....	.....	156	154	.....	.....	45
Am. Cotton Oil.	44⅜	43⅝	43⅝	40½	44	42	42¾	41	41	37	39¾	30	57,345
do. pref	79¼	79	77½	76	77½	77	78¼	75	74	72	74½	55	6,241
Am. Dist. Tel	58	.....	58	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Am. Express	.....	.....	117	.....	117	.....	.....	.....	116	.....	118	.....	250
Am. Sugar Ref.	102⅝	100⅝	99½	98¾	99	96¼	96½	88¾	91¾	83	86½	62	520,890
do. pref	97	.....	99½	95¾	96	95½	95	92¾	89½	85	85	68	14,014
Edison E. Ill. Co.	121	120	120½	120	120	.....	.....	.....	.....	.....	116	110	7,430
Edison Gen. El.	99	9⅝	97⅝	93¾	96	90¼	91¼	88	89¾	79½	82	58	161,366
Nat. Cord. Co.	59½	57⅜	57	4¾	52¾	49½	49¾	35½	57	18¾	21⅝	15½	281,343
do. pref	102	101½	101	99⅝	100	98	98¾	83	78	65	57	45	14,633
do. New	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nat. Lead Co.	85⅛	87½	87⅝	85¾	86½	83⅜	84½	82¾	84¾	82⅝	86	75¼	230,273
do. pref	81½	81¼	81	8 8⅛	81	80	79	78	79⅛	77⅛	77	69½	13,054
Nat. Linseed Oil.	31	.. ..	31	30	28½	.....	.....	.....	.....	.....	25¼	.....	900
So. Cotton Oil.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
U. S. Express	.....	.....	.....	.....	61	.....	.....	.....	58½	.....	58	.....	125
U. S. Rubber	58¾	58	57⅝	56	56	55½	56	48	46¾	45	46¾	39	14,498
do. pref	93¾	.....	.....	.....	90¾	.....	.....	.....	88	83	.....	.....	485
Wells, Fargo Ex	149½	.....	148	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
Western Union	90¼	89⅝	88½	86⅝	87¼	85¼	86¾	80½	83½	82	86¼	80¼	123,413

Total sales, 1,380,695.

CALIFORNIA.

San Francisco.

NAMES OF STOCKS.	CLOSING QUOTATIONS. April 28.	April 29.	May 1.	May 2.	May 3.	May 4.
Alpha	.....	.....	.....	.....	.....	.....
Alta	.....	.15	.....	.....	.15	.....
Belcher	.....	1.30	.....	.....	1.35	.....
Belle Isle	.10	.....	.....	.....	.....	.....
B. & Belch	1.60	.55	.....	.....	1.75	.....
Bodie	.40	.65	.....	.....	.70	.....
Bulwer	.....	.25	.....	.....	.....	.....
Challar	1.20	1.15	.....	.....	1.20	.....
Com'w'lth	.....	.....	.....	.....	.....	.....
Con. C. & V.	2.60	2.65	.....	.....	2.40	.....
Con. Pac.	.....	.....	.....	.....	.....	.....
Crown Pt.	.....	1.00	.....	.....	1.00	.....
Del Monte	.....	.....	.....	.....	.....	.....
E'reka Con	1.50	.....	.....	.....	.....	.....
G'ld & C'y	.80	.80	.....	.....	.85	.....
Hale & N.	1.15	1.10	.....	.....	1.15	....
M. White	.....	.....	.....	.....	.....	.....
Mexican	1.75	1.80	.....	.....	2.10	.....
Mono	.....	.60	.....	.....	.25	.....
Mt. Diablo	.....	.....	.....	.....	.....	.....
Navajo	.65	.....	.....	.....	.....	.....
Nev. Qu'n.	1.40	.....	.....	.....	.....	.....
N. B'lle Isle	.....	.....	.....	.....	.....	.....
N. Co'w'th	.....	.....	.....	.....	.....	.....
Ophir	2.65	2.70	.....	.....	3.40	.....
Potosi	.....	2.85	.....	.....	.....	.....
Savage	1.20	1.20	.....	.....	1.85	.....
Sierra Nev	1.40	1.35	.....	.....	1.20	.....
Uni'n Con	1.20	1.20	.....	.....	1.50	.....
Utah	.....	.20	.....	.....	.21	.. ..
Yel. Jack	1.20	1.20	....	.....	1.20	.....

COLORADO.

Aspen.

	Apr 29. Bid.	Asked
Argentum Junista	$0.70½	$0.73
Aspen Contact	1.25	1.50
Aspen Deep Mining	.10	.11
Best Friend	.08	.09
Bi-Metallic	.10	.11
Bushwacker	.14	.16
Delia S.	2.00	2.25
Gold Valley Placer	.15	.15
Little Annie	.08	.09
Mollie Gibson	7.50	7.60
Pontiac	.10	.11
Smuggler	40 00	50.00
St. Joe & Mineral Farm	.11½	.13
U. S. Paymaster	.20	.20

Colorado Springs. April 29.

	Bid.	Asked.
Anaconda Gold	.40	.41
Calumet	.05½	.05¾
Cleopatra	.12½	.13¼
Fanny Rawlins	.30	.32
Gold & Globe	.08	.....
Gold King	.10	.12
Isabella	.26	.27½
Jack Pot	.01	.01¼
Jeff Davis	...	.01½
Lemhi	1.22	1.25
Matoa	...	.05
Ophir	.11	.12½
Orphan Bell	...	.05
Pharmacist	.23½	.24½
Summit M. & M	.19	.20
Work	.06¼	.06½
World	.06⅜	.07

Denver.

Prices and sales for the week ending April 22d:

	High.	Low.	Sales.
Anaconda	$0.39½	$0.36½	19.500
Amity	.01	.01	21,900
Bangkok-Cora Belle	.04¾	.04½	13,100
Brownlow	.03	.02¾	2,000
Calumet	.07	.06¾	7.200
Claudia J	.01	.01	13,300
Clay County	.01½	.01½	100
Diamond B	.02¾	01½	5,400
Free Coinage	.04½	.04½	500
Get syburg	.03½	.03½	300
Ironclad	.01	.03¾	2,100
Justice	.02¼	.02¼	1,600
Puzzler	.05	.05	500
Tam O'Shanter	.02	.01¼	4,700
Work	.07¼	.06¾	31.700
World	.07½	.05	9,300
Total sales			133,200

Rico. April 29.

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. May 4.

COMPANY.	Bid.	Asked.
Balt. & N. C.	....	.10
Conrad Hill	....	.10
Cons. Coal	....	.32
Diamond Tunnel	....	.10@.15
George's Creek Coal.	1.05	1.12
Howard C. & C.	1.10	....
Lake Chrome	....	.05
Silver Valley	....	.75

MINNESOTA.

Duluth. April 28.

LISTED STOCKS.

	Par.	Bid.	Asked
Biwabik M. Iron Co	100	25.00	25.50
Cincinnati Iron Co	25	.78	.81
Clark Iron Co	100	.40	.75
Cosmopolitan Iron Co	....	.15	....
Great Northern Min. Co.	100	6.00	8.00
Kanawha Iron Co	100	1.18	1.23
Keystone Iron Co	....	.55	....
Lake Superior Iron Co	25	2.50	3.10
Lincoln Iron Co	....	.15	.50
Little Mesaba Iron Co	100	2.00	4.50
Mesaba Mnn. Iron Co.	100	15.00	17.00
Minneapolis Iron Co	100	.15	.50
Mountain Iron Co	100	50.00	80.00
Shaw Iron Co	100	3.00	3.25
Security Land & Exp. Co.	10	22.50	40.00
Washington Iron Co	100	.10	.75

UNLISTED STOCKS.

Adams Iron Co	....	....	11.00
Allegheny Iron Co	10	.12½	....
Aurora Iron Co	....	....	.50
Buckeye Iron Co	100	2.00	2.50
Camden Iron Co	....	....	.25
Chandler Iron Co	....	....	50.00
Chicago Iron Co	100	.60	.90
Charleston Iron Co	100	1.00	1.35
Champion Iron Co	100	.25	.50
Cleveland Iron Co	....	.01	.06
Comstock Iron Co	100	.20	1.00
Columbia Iron Co	100	..	1.00
Dayton Iron Co	100	.15	....
Detroit Iron Co	25	.02	.07
Elmira Land & Iron Co	....	.20	.25
Great Western Mining Co.	100	3.50	4.00
Hall Iron Co	....	....	.50
Homestead Iron Co	25	.05	.07
Horton Mining Co	10	.06	.25
Imp. Iron Mt. Mining Co.	....	....	.50
Kentucky Iron Co	100	.25	....
Kakina Iron Co	25	....	2.00
Lackawanna Iron Co.	100	1.38	1.75
Macomber Mining Co	....	....	.50
McCaskill Mining Co	100	.05	.05
McKinley Iron Co	100	....	23.50
Mesaba Chief Iron Co	100	5.25	6.50
Mesaba Iron Co	....	.10	.25
Mesaba Mineral Co	....	....	.75
Minnesota Iron Co	....	65.00	....
Myrna Iron Co	10	....	.25
Northern Light Iron Co	100	.10	.18
New England Iron Co	100	....	2.00
Ohio Mining Co	100	9.75	11.00
Oneota Iron Co	100	.10	.25
Ophir, gold	....	1.20	1.50
Pennsylvania I. & S. Co.	100	.15	.25
Pioneer	....	....	1.00
Putnam	....	....	.80
Rouchleau Iron Co	100	.50	.80
Republic Iron Co	25	.10	.70
Red Hematite Iron Co	100	....	.15
Standard Ore Co	25	.60	4.00
Stowell Iron Co	....	.01	.05
Towanda Iron Co	100	1.90	2.00
Zenith Iron Co	25	1.50	2.00

MISSOURI.

St. Louis. May 3.

Closing quotations:

	Bid.	Asked.
Adams	.80	.90
American & Nettie, Colo.	.38¾	.40
Bi-Metallic, Mont	....	5.75
Elizabeth, Mont	.46¼	.50
Granite Mountain, Mont.	5.00	5.50
Hope	3.50	4.00
Leo	.05	.07
Pat Murphy	.01½	.05
Small Hopes	.75	....

MONTANA.

Helena.

Prices for the week ending April 22:

	Bid.	Asked.
Bald Butte (Mont.)	$1.90	$2.25
Benton Group (Neihart), Mont.	17½	.25
Combination (Phillipsb'g), Mont.	1.10	1 25
Cumberland (Castle), Mont	.15	.25
Elizabeth (Phillipsb'g), Mont.	.47½	.52½
Florence (Neihart)	.17½	.22
Helena & Victor, Mont	.15½	.60
Iron Mountain (Missoula), Mont	.65	.80
Peorman (Cœur d'Alene), Idaho	.50	.75
Whitlach Union & MacIntyre	.35	.50
Yellowstone	.10	.15

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

PENNSYLVANIA.

Philadelphia. April 27.

	Bid.	Asked.
Bloomington C. & C	....	....
Buck Mountain C	....	....
Cambria	70	71
Connellsville Gas Co	...	....
Excelsior B. & S	....	....
Locust Mt. C. & I	....	....
Penn. Salt	103½	104¼
Penn. Steel	50	80@120
Penn. Gas Coal	....	....
Royal Gas	....	....
Westmoreland C	65½	68

Pittsburg. May 3.

	Bid.	Asked.
Bridgewater Gas Co	27.00	40.00
Chartiers Val. Gas	10.00	10.50
Enterprise Mining Co	1.50	....
Hidalgo Mining Co	5.50	6.50
La Noria Mining Co	.08	....
Luster Mining Co	8.88	9.38
Manufacturers' Gas	....	30.00
N. Y. & Clev. G. D.	51.00	51.50
Pennsylvania Gas	9.50	10.00
People's N. G. & P. Co.	15.63	15.75
Philadelphia Co.	20.63	20.75
South Side Gas	....	26.00
Tuna Oil	....	20.00
Wheeling Gas Co.	23.00	23 50
W'house Air Brake Co	....	140.00

SOUTH DAKOTA.

Deadwood. Mar. 2.

	Bid.	Asked.
Deadwood Terra	$1.50	$1.75
Double Standard	.22	.25
Golden Reward	1.10	1.50
Hawkeye	.62	.65
Iron Hill	.12½	.15
Isadora	.25	.30
Mutual	.01¼	.01¼
Ruby Bell	.22	.25¾
Seg. Iron Hill	.01	.01
Tornado	.25	.30

Pipe Line Certificates.

Week Ending March 31.

	High.	Low.	Sales.
April 1	....	....	.....
" 3	68	67⅜	17,000
" 4	....	....	.....
" 5	....	....	.....
" 6	....	....	.....
" 7	....	....	.....
Total sales in barrels			17,000

FOREIGN QUOTATIONS.

London. April 22.

	Highest.	Lowest.
Alaska Treadwell	£2¼	£1¾
Amador, Cal	1s. 3d.	9d.
American Belle, Colo.	2s. 6d.	2s.
Can. Phosphate, Can	£¼	£¼
Colorado, Colo	£1 5-16	£1 3-16
De Lamar, Idaho	£1 5-16	£1 3 16
Dickens Custer, Idaho.	7½d.	4½d.
Eagle Hawk	1s. 9d.	1s. 3d.
Eberhardt, Nev	6d.	3d.
Elkhorn, Mont	£1 3-16	£1 1-16
Emma, Utah	1s. 3d.	9d.
Esmeralda, Nev	....	....
Flagstaff, Utah	10½s.	7½s.
Golden Leaf, Mont	1s.	6d.
Jay Hawk, Mont	10s.	9s. 6d.
La Luz, Mex	1s.	6d.
La Plata, Colo	10½d.	7½d.
Maid of Erin, Colo	£¼	£¼
Mammoth Gold, Ariz.	1s. 9d.	1s. 3d.
Montana, Mont.	2s. 3d.	1s. 9d.
Mount McClellan	4s.	3s.
New Consolidated	....	....
New Guston, Colo	7s. 6d.	6s. 3d.
New Hoover Hill, N.C.	2s. 6d.	....
New Russell, N. C	....	....
New Viola, Idaho	....	....
Old Lout, Colo	3s. 6d.	2s. 6d.
Parker Gold, N. C	....	....
Pittsburg Cons., Nev.	2s. 6d.	1s. 6d.
Plumas Eureka, Cal.	£9-16	£½
Poorman, Idaho	8s. 6d.	8s.
Richmond Con., Nev.	10s.	7s. 6d.
Ruby, Nev	6d.	3d.
Sierra Buttes, Cal	7s.	5s.
" Plumas Eur., Cal.	£9-16	£7-16
Silver King	....	....
United Mexican, Mex.	2s. 6d.	1s. 6d.
Yankee Girl, Colo	2s.	1s. 6d.

Paris. April 20.

	Francs.
Belmez, Spain	129.00
Golden River, Cal	130.00
" " parts	30.00
Laurium, Greece	634.00
Lexington, Mont	83.75
" parts	2.00
Nickel, New Caledonia	740.00
Rio Tinto, Spain	396.25
" " oblig	517.00
" " " 2d	512.50
Tharsis, Spain	130.00
Vieille-Montagne, Belgium	503.50

ASSESSMENTS.

COMPANY.	No.	D'l'nqt in office.	Day of sale.	Amt. per sh're.
Alta, Nev	43	May 31	June 21	.15
Baltic Con. Cal.	...	May 5	.....	.02
Belle Isle, Nev.	18	April 24	May 25	.10
Bullion, Nev	41	May 17	June 7	.25
Challar, Nev	34	May 23	June 13	.25
Con. Imp'l, Nev.	35	April 26	May 17	.15
Con. Wyoming	....	May 15	.....	.10
Delhi, Cal	3	Apr. 12	May 3	.10
Goleta	2	April 22	May 16	.05
Gould & Curry, Nev	71	May 15	June 6	.25
Gray Eagle, Cal	32	May 10	May 30	.02
Jack Rab'it, Cal	3	May 2	May 22	.05
Jackson, Nev	14	April 29	May 22	.20
Lady Washington, Nev.	9	May 23	June 13	.10
Mexican, Nev.	47	Apr. 16	May 11	.25
Navajo	25	April 24	May 22	.10
No. Belle Isle, Nev.	23	May 23	June 21	.10
Occidental, Nev	12	April 17	May 11	.25
Overman, Nev.	67	June 2	June 23	.20
Pine Hill, Cal	2	April 27	May 24	.03
Savage, Nev	80	April 16	May 9	.50
So. Eureka, Cal	3	May 10	June 5	.01
St. John Con., Cal	....	May 13	.....	.05
Union Con.	47	April 16	May 11	.25
Utah Con., Nev.	17	April 26	May 15	.10
Yellow Jacket	54	April 10	May 19	.25