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CONTENTS.

IT is noted as a somewhat extraordinary fact that complaints have recently been made by purchasers of Swedish steel of the high silicon contents of the metal, a fact which the producers find it difficult to understand, as they are not aware of any recent changes in their product. A Swedish engineer has advised the adoption of the basic process, which also seems extraordinary in view of the advantage in purity of raw material which has always been conceded to the Swedish-steel makers.

THE issue of April 21st of London *Engineering* must be noted as a remarkable achievement in technical journalism. It consisted of 142 pages, nine large double-page plates and four full-page plates. Besides these plates, some of which are engravings of a high order, while all are good, there are a large number of smaller illustrations in the text. Nine of the large engravings and 40 pages of the text are given up to a very complete description of the new Cunard steamers "Campania" and "Lucania," while four plates and 93 pages of text, including many engravings, are devoted to our own Columbian Exposition, in which *Engineering* has always shown a most friendly and intelligent interest. Our contemporary is to be congratulated on this admirable number, and on the success which it has well earned by good work.

WE note with great satisfaction the announcement which comes from Boston that the Calumet & Hecla Mining Company will shortly issue a full and detailed report, accompanied by maps of the mine, etc. We have not been unprepared for this announcement since the publication of "The Mineral Industry," in which was analyzed the cost of producing copper by the Calumet & Hecla and several other Michigan companies, and, assuming the correctness of the statement, we congratulate the directors of the company upon their decision to afford their stockholders that information to which they are fairly entitled, but which they have long asked for in vain. We are quite convinced that the regular publication of itemized statements of costs of doing work will shortly result in a vast economy in the expenditures of this great company.

THE electric motor is becoming a factor of importance in transportation in many places, although it is not as likely to supersede the steam locomotive as some of its sanguine advocates claim. Under present conditions the steam motor is more economical than its electric competitor, except under circumstances found only in the few places where large water powers can be cheaply utilized; but the electric locomotive can be used in many cases where steam and smoke are annoying or dangerous, as in cities, in tunnels, in mines and similar places. Some electric motors of very large size are now under construction in this country for moving freight trains through a tunnel, while in France the Northern Company has undertaken to make a test to determine the place of a similar motor in suburban passenger service. In the French case the storage battery system is to be used, and the success of the test, if it is successful, will very probably lead to a wider application of that system than has yet been made.

THE producers of zinc ore in Missouri and Kansas who are anxious to enter the European market will have an excellent opportunity to show their mineral at the international exhibition to be inaugurated at Antwerp, Belgium, on May 5th, 1894, at which there will be a special section for mines, minerals, and metallurgy. Antwerp is the port where the zinc ores from Sweden, Spain, Algeria, Sardinia, Italy, and Greece are received, and the central market for the spelter works of Belgium, the north of France, and the Rhine provinces of Germany; hence an exhibit of ores at that place would surely come under the notice of the people most interested. The proposed exhibition will remain open for at least six months; the buildings will be located in a new quarter of the city, near the river Scheldt, and will cover an area of about 75 acres. Mr. A. Hertogs, alderman in charge of the public works of the city of Antwerp, sivice-president and general manager of the committee at the head of the Exposition, which will shortly issue complete specifications relating to exhibits.

THE San Francisco *City Argus* in its issue of April 29th called attention of the practice of the Comstock ring of saddling a large amount of charges, altogether disproportionate to the amount expended in beneficial work, upon the already overburdened stockholders. It seems that the Utah mine has four miners only at work, earning $416 monthly, and to supervise these $1,083 are expended for the executive staff and office force. The Crown Point is worse off yet. Here 14 miners, earning $1,456 monthly, have to be watched and superintended by $3,174 worth of executive attention; while the Savage mine was not producing ore, yet the expenditures rose up as high as $6,000 monthly, apparently without any benefit whatever to the stockholders. A number of useless offices have been created and are filled by equally useless men, who have proved themselves, however, as thoroughly attached to the interests of the ring as they are negligent of the welfare of the stockholders. Reform has been often promised for the Comstock; but until these extravagances are curtailed and until operations in these days of *borrasca* are conducted with the utmost economy, it it certain that the assessments by which the stockholders are periodically bled will be kept up indefinitely.

THE extent to which nickel is coming into use in Europe for smal articles which have hitherto been only nickel-plated is worthy of note. Thus one may see in the shop windows scores of things, such as door-plates, oil-cans, settings for spirit-levels and the like made of solid nickel. It is now generally recognized that nickel-plating is not durable, and as the price of the metal declines we shall doubtless see a large increase in its consumption for such purposes as those named. It is, of course, the manufacture and use of nickel-steel to which the producers of nickel look for the great increase in the demand for that metal; but how great will that demand be? It is only within a few years that we have commenced to study the question of the alloys of steel, and although many useful ones have been invented and brought into use, we really know little about their properties. May not some cheaper alloy having all the advantages of nickel-steel be discovered in the near future?

One thing definite may be said, we think, about nickel. The decline in its price which has taken place during the last two years will be maintained, and in all likelihood it will go still lower. There has been recently an industrial revolution in this metal equal in importance to that which followed the opening of the mines of New Caledonia. The discovery of the Sudbury deposits, and the Orford process by which nickel-copper matte can be cheaply and successfully treated, have made America independent of the world for its supply of nickel, and it now threatens the European markets, the cost of production having been brought below that of the metal of New Caledonia. European metallurgists have not been standing still, however, for an improved process, the invention of M. D. LEVAT, formerly director-general of the *Société du Nickel*, has already been put in operation at Havre, France. This is a dry process; indeed, it may be said that the day of wet processes for nickel-winning is past. We hope to give a description of M. LEVAT'S method in a future number of the ENGINEERING AND MINING JOURNAL.

UNIVERSAL BIMETALLISM AND A MONETARY CLEARING HOUSE.

THE Australian papers have commenced a discussion of bi-metallism, and of the clearing-house plan proposed by the ENGINEERING AND MINING JOURNAL. We have received many letters from that country, as indeed from almost all other countries, favoring this plan. Wherever it has received careful attention, it seems to meet with approval, the most common objection urged being that some of the nations may not be willing to adopt it on the assumption that it would be more beneficial to some one else, and still others might object because the supervision which the clearing-house would exercise over, and the knowledge the whole world would have of, their money transactions, would render it impossible to prepare secretly large funds with which to wage war against their neighbors.

This last difficulty is quite true, but the world does not want war, and the disputes between nations can be more justly, satisfactorily and economically settled by arbitration than by war.

As to the other objection, the adoption of the plan will certainly benefit every nation, though it will also undoubtedly benefit most those which manufacture most for the silver basis countries, and which are their largest creditors. It would benefit the United States less than other countries because we have but a small export trade to the silver countries, and hold none of their securities, and being the largest holder of money of all the great nations we would, under the plan, be the heaviest purchaser of silver.

The advantages which the adoption of this plan would bring to each nation, and to the whole world, in the stability and value it would give to the world's money, in the vast and incalculable impetus it would give to industrial enterprises everywhere, in the closer knitting together of the interests of mankind, rendering the maintenance of peace easier and the making of war more difficult, and in the betterment it would bring to the people of the whole world, so infinitely outweigh the petty sacrifice of national vanity involved in relinquishing to the international monetary clearing house the right of judgment as to what is unsafe in creating national money that no one could seriously discuss it.

All the great civilized nations have settled by arbitration international disputes of much greater difficulty and involving much more serious consequences than are inherent in this silver problem. Why, then, cannot the solution of this question be left to the adjudication of this international commission? Surely the decision of such a permanent board of experts, representing the interests of the whole world, would be more just and wise than would probably be the decision of any one nation interested in one direction or another.

The question to be settled is not whether gold is or is not a better money metal than silver, or whether the gold in existence is sufficient to carry on the business of the world. It is primarily whether the industry and commerce of the world shall be disturbed or in a great measure destroyed by the sudden destruction of the international value of the money of two-thirds of the world, to the advantage of no one, or that the nations shall unite—without loss to any—to support and improve the money of these countries by adopting a permanent solution which provides a stable money for the world, and which is yet so flexible as to meet, without a panic or danger, the changing conditions of production of the money metals.

The advocates of silver, as well as those of gold, claim only what they believe just. If silver is not greatly overproduced at the ratio of 16 or 20 to 1 of gold then this ratio will be maintained and everyone will be satisfied. If, on the other hand, as the gold advocates contend, the production of silver should so greatly increase as to endanger the stability of the world's bimetallic basis then the ratio will be changed very gradually until an equilibrium be established, and no panic, no disaster, no derangement of industry or commerce can take place.

The adoption of the clearing-house method by greatly increasing its efficiency will tend to lessen the need of money and will probably lessen the volume of uncovered paper money, but, on the other hand, the impulse the adoption of this plan would give to the world's active industries and wealth would create a fresh need for money which would readily absorb an increasing production of the precious metals. Moreover, the assurance of permanent value for these would induce their greater employment in the arts and thus lessen the amount offered for coinage.

THE ELMORE COPPER DEPOSITING PROCESS.

The British public has always had a reputation for gullibility, at least so far as its attitude towards public companies is concerned. Its desire to rush frantically into investment in mining companies is proverbial, and the more outrageous the promises and the larger the sum required, the greater the desire to plunge. The collapses of the last few years have temporarily quenched this ardor, or perhaps the supply of ready cash has failed for the moment. Whatever the cause, the amount of speculation is at a minimum at present. We wish to draw attention to the reconstruction of Elmore's Patent Copper Depositing Company, of London, a step which was decided on at a meeting of the shareholders held on April 7th. This company was started some three and a half years ago, to work the process invented by the brothers ELMORE for combining the electrolytic refining of copper with the manufacture of copper tube, by depositing the copper direct upon a revolving mandrel, the deposit being continually consolidated by the action of an agate edge. Reference has been made heretofore in the ENGINEERING AND MINING JOURNAL for March 21st, April 18th, and August 29th, 1891, and February 27th, 1892, to the peculiar methods of the promoters and managers of the concern. Details of the process and the cost of working have never been made public, and metallurgists have hesitated to express a definite opinion of its merit, but have waited with considerable interest for the results of experience. When the process was only in an experimental stage the ELMORES, in seeking capital to prosecute their investigations and for the manufacture of their tubes, fell into the hands of the "Baron" MAURICE GRANT, company promoter and money lender. This "Baron," at once grasping the possibilities of the ELMORES' process, and the opportunity it afforded him for realizing a large sum of money immediately, instead of carefully and wisely laying out a small amount of capital to develop the process into a commercial success, floated one after another a series of public companies and raised without difficulty in all about $6,000,000. The first was the Elmore Patent Copper Depositing Company, Limited, and the others were tributary companies, such as the Elmore Wire Manufacturing Company, the French, the Austro-Hungarian, the German, the Colonial and the American companies. These latter were organized for the purpose of purchasing the rights to manufacture Elmore copper outside of the United Kingdom: and they were to make incomes by selling or leasing these rights to further sub-companies. As regards the parent company, the amount paid for the patents went mostly to "Baron" GRANT and the ELMORES had to be content with a few hundred pounds. Not long after the organization of the company the Wire Manufacturing Company was formed and paid for its patent rights £103,000 to the parent company, whose directors immediately declared a dividend of 50 per cent. and so disbursed some £70,000. After that the parent company bought land for works and spent £67,000 for that, erected works and plant to produce 20 tons of tubes per week, and spent a further £11,000 in buying stock of the Wire Company in the open market with the obvious object of creating an artificial demand for the stock.

The manufacture of the tubes seems to have occupied the attention of the directors to an infinitesimal extent and it was evidently the last thing they thought of. The plant erected turned out to be bad, engine foundations sank, vats leaked and the mandrels were found to be unadapted to their object.

The consequence was that the average output was about 1½ tons per week instead of the full capacity. Most of the production has been disposed of to users of copper pipes, but among these users there do not appear to be any who would specify the item of strength to be the primary requirement. The price also, under the circumstances of working, has been necessarily a nominal one, and bears no definite relation to the cost of manufacture. The state of disorder in the company from bad to

worse, the liabilities accumulated, and the creditors grew impatient. It was found necessary to call a meeting of shareholders on March 16th to decide on future action. It was then determined to appoint a committee of inspection from the shareholders. The report of this committee was read at another meeting held on April 17th. They reported favorably on the process, though they offered no expert opinion nor quoted tests; they recommended the issue of 8,800 preferred shares to be cumulative as to dividend, and to bear interest at 10 per cent. per annum, sufficient calls on these shares to be made to raise £17,600, of which £7,600 should be used in clearing away pressing debts, and £10,000 to provide sufficient working capital. This proposition was agreed to unanimously by the stockholders, and immediate steps are to be taken to place the business on its new footing.

Thus closes this chapter in the history of the Elmore Patent Copper Depositing Company, Limited. After having got rid of the promoters, old directors and marauders generally, it appears possible that we may now become acquainted with the merits and practical results of this interesting process. Let it be said in conclusion that, out of all the immense sums raised for the various Elmore companies the ELMORES themselves received no more than a few hundred pounds, and that their services were retained from year to year in return for a beggarly pittance. The only one that has been enriched so far to any extent is this "Baron" MAURICE GRANT. This man has promoted many other shady schemes than this, among them being the floating and reconstructions of the firm of WOODHOUSE & RAWSON, electrical engineers and contractors. This firm nominally had the placing of the Elmore companies on the market, and it also was used as sponsor for many other of the "Baron's" money-raising schemes, and they have become totally discredited even by the most credulous and gullible section of the public. The ENGINEERING AND MINING JOURNAL many times warned the public against the ELSMORE schemes, and effectually prevented the investment of American capital in them,

NEW PUBLICATIONS

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.

This little volume describes and illustrates the great variety of methods which may be used to fasten a rope, in which the sailor is usually supposed to be an expert. It covers the subject very completely, and may be consulted by all who are interested in it, or who want to know in how many different ways a knot can be tied.

AUSFÜHRLICHES HANDBUCH DER EISENHÜTTENKUNDE. Part II., Volume I. By Dr. Herman Wedding, Brannschweig, Germany: Friedrich Vieweg & Sohn. Pages 390; illustrated. Price (delivered in New York) $4.

The present issue brings the second and carefully revised edition of Dr. Wedding's standard work on the metallurgy of iron up to page 896. The first part was issued over a year ago. The part now presented continues the discussion of the metallurgy of iron and steel, with especial reference to chemical analysis and microscopical investigations. A full review of the book must be deferred until the whole is published.

THE COLORADO MAGAZINE. Volume I. No. 2. Denver, Colo.; The Denver Publishing Company. Subscription $2.50 yearly.

This new candidate for favor among the magazines starts out well with an interesting list of contents and some good engravings. There is an article on the "Indian of To-Day," by one of their number; one on "Panama," very fully illustrated; one on "Electricity as Applied in Colorado," and a variety of lighter matter. The magazine is well printed and presented to the public. The illustrations are nearly all half-tones from photographs, and are generally good. The magazine will do well if it keeps up to the standard of its opening numbers.

MUNICIPAL IMPROVEMENTS. A MANUAL OF THE METHODS. UTILITY AND COST OF PUBLIC IMPROVEMENTS FOR MUNICIPAL OFFICERS. By W. F. Goodhue, C. E. New York: John Wiley & Sons. Pages, 130: illustrated. Price $1.50.

This book is not an exhaustive treatise on municipal improvements by any means, but must be regarded rather as a primer or collection of first lessons on the subject. It is written purposely without technical terms and details, and in a style readily understood, and its object is to give information to municipal officers who have to pass on local improvements, their necessity and value. Undoubtedly there are many such who wish to do their duty to the public, but whose previous experience has not been such as to enable them to form an opinion on what may be important matters. This is especially the case with members of city councils and similar bodies; and many such will find this a very useful book. It has chapters on bridges, building laws, gas, water-works, sewerage, street grades, street pavements, fire apparatus and other subjects of the same class. It is clear and condensed in style and the information given is generally excellent. It is a book which ought to have a wide circulation.

THE SILVER SITUATION IN THE UNITED STATES. By F. W Taussig, LL. B., Ph. D., Professor of Political Economy in Harvard University. New York: G. P. Putnam's Sons, 1893. Pages, 133. Price, 75 cents.

This book was originally published in January, 1892, by the American Economic Association, as No. 1 of Vol. VII. of its publications. The limited edition having become exhausted, it has been revised, and is now issued as No. 74 of Putnam's "Questions of the Day." It is, for many reasons a most important contribution to the discussion of the vexed and vexing silver problem. It is concise, yet clear; the incisive sentences of the writer enabling him who runs to read and understand. It is fairly impartial, and the deductions drawn are in great part conservative.

We by no means agree with all the author's sentiments and conclusions, but we welcome the book as an honest and able contribution to the subject. Professor Taussig divides his study of the question into two parts: The economic, which includes the history and working results of the silver legislation, and the political, which embraces the intricate questions of policy involved, the right and wrong of the legislation, the evils or benefits that have ensued and may be expected, and the best course to be followed in view of all the emergencies of the situation. The economic discussion commences with an account of the Act of 1878, commonly known as the Bland Bill, which provided that the government should buy and coin not less than $2,000,000 worth nor more than $4,000,000 worth of silver per month. The causes leading to this act, the reception given the coins issued, the institution of silver certificates, first of large and finally of small denominations, and the attitude of the banks and the efforts of the Treasury to force this money into circulation are all duly considered.

In order to make the question of circulation perfectly clear, its history is divided into four periods: The first running from 1878 to 1884, a period of ready circulation; the second, 1885-1886, a period of contraction; the third, 1886-1890, during which the silver circulation again expanded; and, lastly, 1890 to the present time, which is considered a phase by itself. The history of these periods is further explained by a large diagram showing the total silver currency authorized, the total silver currency in circulation, silver coins in circulation, and net gold held by the Treasury.

Some of the facts shown by this diagram are very interesting. For example, it is shown that, notwithstanding the efforts made by the Treasury, and the annual appropriations made by Congress, to enable the Government to ship the coins free to all applicants, it has never been able to get much more than $60,000,000 in circulation.

In closing the history of the four periods, Professor Taussig corroborates what we have many times stated in these pages, that the outflow of gold from this country is not alone due to the fear on the part of foreign investors that we are rapidly reaching a silver standard, but also to the fact that we have too much currency. Professor Taussig says: "The decline in the gold reserves; the growing use of legal tenders in government payments; the collapse of customs gold receipts in New York; the accumulation of currency in that city; the devices resorted to by the Treasury to draw gold to it—all give evidence of a redundancy of money, and all seem to indicate that the issues of 1890 are greater than can continue to be long put forth without causing a cessation of gold payments."

That the continued purchase of 4,500,000 oz. per month will eventually lead to the suspension of gold payments is considered clear beyond a doubt, and, although this will be accompanied by plenty of money and higher prices for both commodities and wages, the readjustment would not take place pari passu with the depreciation of the currency, and labor would inevitably suffer. In Part Second, the claims of bimetallists and mono-metallists are discussed, and although we cannot agree with the conclusion that, under existing conditions a single gold standard is better than certain forms of bimetallism, we willingly concede that Professor Taussig presents the arguments in a very able manner.

For his reasoning we must refer the reader to the book. With regard to "the appreciation of gold and the decline of general prices," and regarding the claim of the bi-metallists that owing to the appreciation of gold there has been a steady, and on the whole, permanent decline in general prices, and the counter-argument that the decline is due, not to the appreciation of gold, but to the decreased cost of production consequent upon new inventions and improved industrial processes, Professor Taussig says: "So far as this train of reasoning (decreased cost of production) undertakes to explain the mode in which the fall in prices has been brought about, it seems to me impregnable. But, in so far as it endeavors to disprove the appreciation of gold or to show that the general fall is not due to this appreciation, I have never been able to see its force. The appreciation of gold is the general fall in prices. The two are not related as cause and effect; they are simply two names for one and the same thing."

It is, perhaps, incorrect to use the expression "appreciation of gold" without adding "as measured by certain other things." The cost of producing gold has probably declined, as has the cost of other articles when measured in day's labor—but it has not declined as much as have silver, copper, iron, cotton goods, and many other articles, and it has consequently appreciated as compared with these. There is no absolute standard by which to measure the appreciation or depreciation of any article; even the day's labor has appreciated by becoming more productive, owing to greater intelligence and skill in men, and better tools for the performance of work; all values are relative, not absolute, and there are many complex facts to be considered in arriving at even an approximate solution of the problem.

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.

North Carolina Agricultural Experiment Station. Bulletins Nos. 88-90. Raleigh, N. C.; State Printers.

Keep's Test for Cast Iron. By W. J. Keep. Detroit, Mich.; published by the author. Pamphlet, 32 pages.

Blast Furnace Equipment. The Philadelphia Engineering Works. Philadelphia, Pa. Pages 144; illustrated.

Transactions of the Association of Engineers of Virginia. Volume II.: July, 1891, to *March,* 1893. Roanoke, Va.; published by the Association. Pages 166.

Mining and General Telegraphic Code. By Bedford McNeill, F. G. S. London, England; Whitehead, Morris & Co. Pages 810. Price (delivered in New York) $8.

Tenth Annual Report of the Board of Control of the State Agricultural Experiment Station at Amherst, Mass. Boston, Mass.; State Printers. Pages 354; illustrated.

U. S. Department of Agriculture, Division of Chemistry. Bulletins Nos. 36 and 37. Washington; Government Printing Office.

Statistik der Oberschlesischen Berg- und Huttenwerke fur das Jahr 1892. By Dr. H. Volz. Kattowitz; published by the Oberschlesischen Berg— und Huttenmännischen Verein. Pages 84.

Annual Statistical Report of the American Iron and Steel Association. James M. Swank, General Manager. Philadelphia, Pa.; published by the Association. Pages 108; illustrated by diagrams.

Report of the Proceedings of the 25th Annual Convention of the American Railway Master Mechanics' Association. Angus Sinclair, Secretary. New York; published by the Association. Pages 256; illustrated.

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.

The Silver King Mining Company.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: As one of your subscribers, I would venture to ask if you can give me any information regarding the Silver King Mining Company, Limited, and the property which is represented to be situated in the mining district of Calico, San Bernardino county, California. They state that their property consists of upward of fifty mines, mining claims and fractions of claims, with a 30-stamp mill. The company appears to have been formed in April, 1891, and claims to have produced from that period to December 31st, last, about 314,000 oz. of silver, and since then considerably more. They are now trying to raise £50,000 on debenture for the purpose of increasing the number of stamps from 30 to 70, and for other purposes.

HOUSE OF COMMONS, April 27th, 1893. CHARLES C. CONNOR, M. P.

(The property of the Silver King Mining Company, Limited, is situated as represented, in Calico, San Bernardino county, Colo. The ore is now low grade, but free milling. The intended increase in crushing capacity will undoubtedly prove a wise step, if enough ore is available. Of the actual condition of the mine, we have received no report for some time, and it is therefore impossible for us to make any estimate as to the future of the property.—Ed. "E. & M. J.")

Exports of Mexican Lead Ores.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I notice in a recent number of the "Journal" a short article on the dearth of Mexican ores for export. There has been some falling off lately, largely due to two reasons; first, the terrible drought which has now held almost all Northern and Central Mexico for two years, making a great scarcity of water for ordinary mining operations, but chiefly causing a great increase in handling charges, by reason of the entire lack of forage on the roads and the very high cost of feed. Mining camps located near or on the railroads do not show any falling off, with few exceptions, but rather an increase, due again to the lack of water and high price of feed, facts which bear heavily on the patio process, making it cheaper to ship some ores which would otherwise be treated at home. Zacatecas is a notable example of this; two weeks ago straw, the staple horse and mule feed, cost $40 per ton at that place, and coal $15.10 per ton. Coal costs in the City of Mexico between $19.50 and $20 per ton. The second reason above alluded to, and the one which especially refers to lead ores, is the general belief that the American Government is going to take the duty off lead ores. Small shippers who can make but little at present are holding off. I do not believe the smelters being erected at Magdalena or Chihuahua will affect the situation much, or that the El Paso Smelting Company is very badly frightened. W.

CITY OF MEXICO, May 1, 1893.

Exploring Gold Placers.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Your correspondent, Walter S. Church, in your issue of April 29th, opens his letter by referring to your editorial comments of January 14th, 1893, on a "Venezuelan Placer;" this is an evident slip, as your article in question refers to the much talked of Ecuadorian Placer, the Playa De Oro. Much could be said about the reports that have reached us from this property, but any criticism would be out of place, as three experienced American engineers are now examining it, and their full reports are anxiously awaited. As regards Mr. Church's questions as to the results of the Nueva California Placer in Peru, so carefully examined by Mr. A. D. Hodges, and referred to in your issue of September 5th, 1891, it can only be said that owing to the death of Mr. Wm. H. Cilley, and other circumstances, actual work has still been deferred. All Mr. Hodges' work, and especially that on Nueva California, has been so carefully done that I concur with Mr. Church that the matter is reduced almost to a mathematical certainty. The expense of this examination was not as great as might appear; it must be remembered that the Indian peons received only the equivalent of 30 cents, United States money, per day, and hence the expenditure for labor was not excessive. Mr. Church's suggestion regarding the use of well boring appliances as a means of sampling such deposits seems to be entirely impractical and wrong in principle. Even if the hole were free from water the gold would tend to concentrate in the bottom, and little could be learned from the wet or dry sludge obtained from drilling. I, for one, would not like to depend on the results of tests made by well borers under contract.

Careful and oft-repeated tests, such as those described by Mr. Hodges, necessitating much time, are absolutely required in the examination of gold placers. Besides the tests of the gravel, long continued observation of the rainfall and determination of the area of the water shed and the catchment of the possible dams are generally necessary. Gravel banks are usually intersected by ravines, so that many points of attack are presented, from which measured and reliable samples can be much more satisfactorily taken than by any mechanical means. The pan or batea, with the rocker and sluice, afford the simplest and best means of testing the gravel. The expertness of the South American gold washers is wonderful; what the good batea-men cannot save in their wooden bowl no hydraulic sluice in the world will get. I have had Peruvian and Colombian Indians who could wash carefully at least two cubic yards of dirt in a day, saving even the minutest colors of gold from each batea. In their skill they exceed the best California gold panners I have ever seen.

No. 18 BROADWAY, NEW YORK, May 12, 1893. E. E. OLCOTT.

"The Mineral Industry" for 1892.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We are in receipt of your book, entitled "Mineral Industry" and congratulate you on the success you have attained in making such a collection of valuable material. It is certainly a very valuable work of reference. CASTNER & CURRAN.

PHILADELPHIA, April 21st, 1893. General Agents Pocahontas Coal Co.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We have been looking into the volume entitled "The Mineral Industry, Etc.," for 1892, and think it is one of the most valuable books of its kind that we have had the opportunity of reading.

JULIUS BEILER,

PITTSBURG, Pa., April 27th, 1893. Secy. and Treas. Crescent Steel Co.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We beg to acknowledge receipt of "The Mineral Industry," and we are highly pleased with it. It gives a multitude of information of great value.

THOMAS HEIL.

ST. LOUIS, April 25th, 1893. President Henry Heil Chemical Co.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We wish to compliment you most highly on the marked success that you have made in the collection of statistics of the various metals. We consider the book not only indispensable to everybody connected with the metal trade, but also a book of absorbing interest to any thoughtful person.

JERE ABBOTT & CO.,

NEW YORK, April 25th, 1893. Metal Dealers.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I want to express to you personally, my appreciation of the excellent manner in which this very useful volume has been prepared. Considerable experience in statistical work enables me to appreciate the magnitude of such an undertaking and the difficulty of preparing a volume of such scope and detail. The completion of this work is certainly an achievement to be proud of. I am very glad to have the volume upon our library shelves.

EDWARD H. SANBORN.

BALTIMORE, April 21st, 1893. Managing Editor "Manufacturers' Record."

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We beg you to accept our thanks for such a splendid compendium of information on the mineral production of the United States and the world. We think that praise could hardly be made too strong in recognition of such an achievement. In the "Iron Trade Review" of this week we have made mention of the work, and, while we could wish that we had had time and space to give it a review worthy its merits and importance, we trust you will accept what we have said as a small recognition of the great service you have rendered the interests which you so well represent.

A. I. FINDLEY.

CLEVELAND, O., April 27th, 1893. Editor "Iron Trade Review."

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Permit me to congratulate you upon the brilliant success of the "Statistical Number." I prophecy for it a cordial reception at the hands of financiers, students of economics, producers and consumers of metals and minerals, and, in fact, any one who has occasion to make use of its pages. The work exhaustively treats a field of technical literature heretofore indifferently and incompletely covered. The fact that it not only makes a specialty of details, but so classifies them that their bearing on one another and the primary subjects are clearly shown greatly enhances its value. May the reception of the work meet with deserved success. F. B. PHELPS.

NEW YORK, April 23d, 1893. "Wall Street Journal."

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Volume I. of "The Mineral Industry" at hand, and I congratulate you most sincerely on the great success you have made of it both from the binding and general make up and the vast amount of valuable matter to be found in it. I have only had time to glance through it as yet, but have been highly pleased with what I have seen. The articles on gold chlorination and the cyanide process are alone worth the price of the book; the tables and general information in regard to the minerals are more than a combination of the "U. S. Mineral Resources," and "Dana." The early appearance of the first edition of a work of such magnitude is a great credit to the ability and energy of an American institution, and is a worthy adjunct to the leading mining journal of the world. I wish you the continued success so well earned by the records of the past. WINTHROP W. FISK.

BOSTON, April 21st, 1893. Mining Geologist.

MINING AT THE COLUMBIAN EXPOSITION.

In the general description of the Mines and Mining Building given last week, we referred to the fact that, not only the building itself, but also the exhibits contained in it, were in a better condition and nearer completion than those in any other department. This was largely due to the energy and ability of Mr. F. J. V. Skiff, Chief of the Department, who has done a great deal of hard work himself, and has also understood how to collect and organize a capable staff of assistants. We give herewith a portrait of Mr. Skiff, who has had charge of his department from the first, and has also for a great part of the time acted as secretary of the Executive Board, which is composed of the director-general and the chiefs of departments. Mr. Skiff has had an extended experience in mining, and has been, therefore, familiar with the needs of his department. At the time of his appointment he was a resident of Colorado.

THE STATE EXHIBITS.

Arizona.—The exhibit of this territory consists of cabinet collections of specimens, particularly from the copper regions. The Copper Queen Consolidated Mining Company has contributed fairly from its great mine. The trophy in the center of the space is a huge square block of beautiful azurite, from one of Arizona's mines, and is surrounded by a base of malachite, forming a pleasing contrast in blue and green. In the cabinets can be found every combination of carbonates, oxides and native copper, together with beautiful silver incrustations. The petrified wood exhibit from this territory is exceptionally fine. The Drake Manufacturing Company manufactures this wood into ornamental forms, and have a display here. A number of relics of mining instruments, such as stone axes and gads, found in the territory, will be placed on exhibition. This exhibit is in charge of Mr. T. R. Sorin, who represents the Territorial Board, of which Mr. S. Price Behan, of Prescott, is Vice-President.

California.—The collective display of this State is entered through a handsome triumphal arch, faced with marble of different varieties from the quarries of the State. A very fine collection of minerals has been secured through the efforts of Commissioner McMurray, and his able assistant, Mr. William Irelan, the State Mineralogist. The Forty-Niners' Association have loaned for exhibition an extensive historical collection of relics of the early days in California. The southern counties of the State have formed a society called the California World's Fair Association, the efforts of which in securing interesting exhibits have been very successfully conducted by Mr. Frank Wiggins, of Los Angeles, the secretary.

Colorado.—This State displays in cabinets a great variety of precious metals and gems, metalliferous ores, coal, iron, building stones, clays, salts, mineral waters, oils and metallurgical products. The striking feature of the display is a circle of classic columns of characteristic marble from the various parts of the State. These columns are surmounted by huge masses and blocks of ore. A parapet faced with highly polished Colorado onyx has been built as an enclosure. The county displays have been arranged separately in the cabinets surrounding the space. The valuable Breckenridge collection of gold nuggets will also attract considerable attention. A series of models and geological charts are exhibited by the technical mining schools of the State. Mr. S. Ward, superintendent in charge of the collective mining and mineral exhibit, was a United States juror at the last Paris Exposition. He has been ably assisted by Mr. V. C. Heikes, of the Colorado School of Mines.

Connecticut.—This State contributes to the departmental exhibit of building stones, a series of cubes of uniform size from all of the principal quarries in the State. Mr. J. H. Vaill, the executive manager and secretary of the board, has had this matter in charge.

Florida.—The space is occupied by a display of samples of the various grades of phosphates, mined by the many companies engaged in the industry in that State. This exhibit is shown in bottles and trays. In connection with this are shown a series of fossil remains, which have been found imbedded in the phosphate deposits. Mr. S. B. Turman has been commissioner in charge.

Idaho.—Gold and silver ores predominate in the excellent cabinet collection filling Idaho's space. The mining companies of that State have been very liberal and prompt in contributing their rarest and most beautiful specimens. Each county is represented by a typical series of minerals. The wonderful resources of the State in mica are fully brought out by sheets 10×12-ft., without a flaw, and as thin as tissue paper. Mr. James M. Wells, the Executive Commissioner of the State Board, has managed this exhibit, being assisted by Mr. Alliene Case, his secretary.

Indiana.—This State has on exhibition its commercial minerals, such as brick, terra cotta, roofing tile, slate, cement, plaster, marble and building stone, limestone, coal, oils, etc. The Executive Commissioner, Mr. B. F. Havens, of the State Board, has been assisted in gathering this collection by Prof. S. S. Gorby, State Geologist.

F. J. V. SKIFF, CHIEF OF DEPARTMENT OF MINES AND MINING, COLUMBIAN EXPOSITION.

Iowa.—This State has built on her space a section of a typical coal mine, the sides of which are lined with the various and characteristic coals of the State. Displays of quarry products, coals, clays, gypsum, etc., are also made. A grotto of spar and stalactites, with a mineral basis, has been built. Commissioner Duncombe has been in charge of the mining exhibit, and his superintendent is Mr. T. Meers.

Kansas.—The exhibit of this State is confined to material of economic importance. Two hundred specmens of stone 6 in. square, the ornamental stones being highly polished, form a very complete and interesting collection. The Atchison, Topeka & Santa Fe Railroad has made a special exhibit, illustrating the resources of Kansas in coal. The economic geology of the State has been brought out by Prof. F. W. Williston, of the State University. The different counties are represented by products of clay, and such metals as zinc and copper ores. Maps showing the location of all the quarries, coal veins, and lead and zinc deposits in the State are also on exhibition in the space.

Kentucky.—This space is ornamented with a turreted arch of cannel coal, while sections of the same material from the different mines are on exhibition within. There has also been arranged a room in exact representation of one of the most famous chambers of the Mammoth Cave. This room is lined with stalactites and crystals, and upon its walls are hung pictures of the striking features to be found within this celebrated cave. A veteran cave guide is in constant attendance to explain to visitors the many wonders of the place. Several trophies showing the position of the different geological horizons of economic importance have been arranged, and pyramids of building stone, coal and clays built. There are maps and charts showing the position particularly of the coal fields, and also a huge relief map of the State. Col. M. H. Crump, of Bowling Green, is in charge of this exhibit.

Louisiana.—The exhibit of this State consists chiefly of salt, including

a statue representing Lot's wife, about 8 ft. high, and made of rock salt from the New Iberia Mine. There is also a small display of the commercial minerals, such as sulphur, cement, etc. Commissioner John C. Wickliffe has this exhibit in charge.

Maine.—The exhibit of this State consists of a systematic collection of the scientific and economic minerals, filling about twenty cases. The building stone specimens, which have been selected upon the advice and judgment of George P. Merrill, Curator of the National Museum, are in small slabs of uniform size. There will also be a small exhibit of the quartz used in manufacturing sand paper, and a varied assortment of construction materials. The exhibit is in charge of Mr. Bayley, of Watertown.

Massachusetts.—A scientifically arranged collection of the minerals of the State is shown in the technical mineral display of the Mining Department. The display illustrates mineralogy and petrography. Mr. E. C. Hovey, of Boston, is the Executive Commissioner and Secretary of the State Board. The details of the collection and arrangement of the minerals were in the hands of Mr. George D. Ladd, of Melrose Highlands.

Michigan.—This exhibit occupies a prominent position in the Mining Building, being located on the central court. An entrance of red sandstone from the Upper Peninsula has been erected in the shape of an arch, together with a parapet enclosure of the same material. The great copper companies of the Lake Superior region have responded liberally to the call of the State board for exhibits of copper, and show a great variety, from huge masses of ore and native copper, to collections of crystallized copper in curious and interesting forms. Four obelisks of pure copper, ranging in weight from 50 to 500 lbs., and also a quantity of wire and sheet copper, drawn and rolled from the native metal, is on exhibition. A model of the Calumet & Hecla mines, belonging to the Museum of the University of Michigan, is also placed on exhibition, and a number of other valuable models, constructed especially for this exhibit. There is also shown a collection of copper alloys. Mr. Hubbel, one of the directors of the Calumet & Hecla Co., has been very energetic in furthering the interests of the copper exhibit. Salt, in which Michigan ranks first as a producer, is represented by an excellent and select display. There is also a fair display of ores, iron and copper Gypsum, coal and building stone form the principal parts of the exhibit of materials from the Lower Peninsula. An interesting model of a regular sized apparatus illustrates the methods of transporting ores from the mines to the stamping mills, and the appliances for washing, stamping and separating the ores. Mr. Peter White, of Marquette, is in charge of the general exhibit, being assisted by Mr. Samuel Brady, who is superintendent of the installation.

Montana.—This State has a scientific display of the ores of the precious and base metals. This collection has been carefully prepared under the supervision of scientific men, and has been drawn from the producing mines of the State. In addition to the ores, there is a considerable and attractive collection of the bullion and other products of the mines and furnaces. A collection of marble and building stones, coal and fire brick, clays and coke is also on exhibition. The striking feature of the exhibit is the silver statue of Justice, in heroic size. The silver bullion in this statue is valued at $32,000, and it rests upon a solid gold plinth valued at $300,000. A trophy of sapphires and other precious gems gives an idea of the extent and variety of the resources of this State. There are two glass models on exhibition, showing underground workings, and illustrating mining engineering. There are over 2,000 exhibitors in the collective exhibit of the State. The exhibit is in charge of Mr. William Bickford, Executive Commissioner, and Prof. F. W. Traphagen, of the Montana College, of Deer Lodge.

Minnesota.—The resources of the iron mines and the numerous quarries of the State have been drawn upon to furnish the display. A collection of mineral specimens has also been arranged for exhibition. The space is surrounded by a facade built of the quarry products of the State. The variety of the color and texture of the stone makes a pleasing appearance. Upon each stone in the arch of this facade will be printed in gilt letters the name of the quarry from which it is produced. Working models of mining plants and accessories have been placed on exhibition, and a number of trophies and ores are attractively disposed about the space. Books, maps, charts, etc., illustrative of mining engineering, are also included in the exhibit. Mr. H. B. Moore, commissioner of the State, and Mr. D. H. Bacon, have charge of the display.

Missouri.—This State has provided an attractive pavilion, constructed of native terra-cotta. Within the area thus formed is to be found a very interesting technical display of the lead and zinc ores. Products are shown illustrating metallurgy and the preparation of building stones and clays, together with a varied assortment of the minerals of the State in all stages, ranging from crude to finished material. There is an exhaustive cabinet presentation in lithology, crystallography and geology. A number of topographical models and geological sections of the State are shown; also models of reduction works as operated throughout the State. There are also a number of exhibits illustrating the work of the Geological Survey. Mr. J. K. Gwynn, Executive Commissioner of the State, with the assistance of Professor Winslow, State Geologist, has had direct charge of the exhibit. Mr. E. O. Hovey has superintended the placing of the mineral display.

Nevada.—This State will be represented by a number of collections of minerals, particularly of gold and silver ores, many of which are worth thousands of dollars. The collection will comprise over 5,000 specimens. The exhibit is in charge of J. A. Yerrington, chairman of the State commission.

New Jersey.—The exhibit of this State has been secured and arranged through the instrumentality of the State Geologist, Prof. J. C. Smock. It comprises an exhibit of minerals of economic importance, such as potter's clay, sands, etc. The work of the Geological Survey is fully represented by systematic collections of rocks, ores and minerals, as well as by maps, charts and other publications. Prof. Nason has been placed in actual charge of the State exhibit in the Mining Building.

New Hampshire.—The building stones of the State are liberally represented in the departmental collection by cubes of uniform size from the various quarries. The mica industry is also presented in its various phases. Mr. E. N. Shaw, executive commissioner, has arranged the details of the exhibit.

New Mexico.—The mineral exhibit from this territory is one of the finest of the Exposition. It comprises many private collections of a varied assortment of minerals, as well as many extensive and rare county collections. The central feature of the display is a miner's cabin, covered with crystalline minerals of great variety. This cabin was erected by the Sierra County Association. A relief map of the territory is also included in the exhibit of that territory. The Atchison, Topeka & Santa Fe Railroad Company has assisted in making an interesting coal exhibit. The exhibit is in charge of Mr. T. B. Mills, executive commissioner, and W. H. H. Llewellyn, secretary of the Territorial Commission. Prof. J. C. Carrera is superintendent of the mineral exhibit.

New York.—A handsome pavillion, designed by a leading New York architect, fronts the space assigned to that State. At the entrance a geological pyramid has been erected, showing the formations of the State from the old Laurentian system to the base of the coal measures measures. A great variety of valuable stones and ores are exhibited in this enclosure. The famous salt works of the State have an interesting exhibit of their products. Mr. Fred J. H. Merrill, secretary of the State Museum at Albany, is in charge of the exhibit, his assistant on the grounds being Mr. H. Ries.

North Carolina.—The State has erected a pavilion of mica, within which are shown, under glass, the many varieties of gems and gem stones, gold nugget and precious metals found in the State. Of the ores and metals, copper, lead, zinc, iron, etc., as well as coal, of from 500 to 600 varieties, are shown. The corundum and abrasive exhibit is very fine. The exhibit of gems, including rubies, sapphires, ornamental emeralds and topaz, garnets, amethysts, quartz of different colors, spinels and beryls of all shades. The display has been prepared under the direction of the State Board, and Mr. T. K. Bruner, commissioner of exhibits for the State.

Ohio.—This pavilion is entirely of building and ornamental stone and fancy brick, and presents a most solid and imposing appearance. The exhibit of the State is principally of the industrial and economic minerals, especially of clays and coal. A cube exhibit of sandstone has been prepared, and the United Salt Company will demonstrate the methods of preparing salt for the market. The executive commissioner, D. J. Ryan, aided by Mr. Haseltine, chief inspector of mines for the State, has prepared and arranged the exhibit.

Oregon.—A representative mineral exhibit is shown in cabinets within a pavilion of artistic design. The many new quarries of ornamental stone, such as serpentine, have the qualities of their product represented. Mr. C. Clarence Ayers is in charge of the display.

Pennsylvania.—This State makes probably the most complete and scientific mineral display of all. Nearly every group in the classification of the department is amply represented by samples from the mines and quarries of this State. The mineral collections comprise thousands of specimens. There is a full series of samples of anthracite and bituminous coals, with analysis in each case. The artificial mineral products of the State, as well as building stones, clays, sands, graphites, asbestos, mica and sandstone, are represented, as are also the varieties of practices in making charcoal and coke, and the various processes of treating pig iron, and a display representing the manufacture of zinc oxides. Improvements in mining machinery are brought out by means of models. The Geological Survey has a full set its publications and maps on exhibit. The State has spared no expense in the matter of installation and preparation. A special feature is arranged for in the shape of a pyramid of anthracite coal, 62 ft. high, representing the width of the greatest anthracite coal seam in the State. Mr. A. B. Farquhar, executive commissioner of the State Board, and Prof. Louis E. Reber, of the State College, have supervised the work of collection and arrangement, being assisted by Prof. Romeyn Hitchcock, formerly of the United States Museum.

South Carolina.—Phosphate mining, the principal industry of this State, is represented by an interesting display of the phosphates, shown in glass jars. The products thus exhibited will include both the crude and the prepared article, and in connection with the exhibit will be shown a number of the fossils found in situ. A pyramid of phosphate adorns the center of this space. The exhibit has been secured and arranged through the efforts of Mr. E. L. Roche, of Charleston, National Commissioner.

South Dakota.—The Black Hills region furnishes the main body of the mineral display for South Dakota. It comprises a great variety of gold, silver and tin specimens. The State School of Mines has furnished a number of scientifically arranged collections. The exhibit of this State is within a handsome and classic inclosure. Mr. Thomas H. Brown, secretary of the South Dakota World's Fair Commission, is in charge of this exhibit.

Tennessee.—The display of this State, consisting largely of building and ornamental stones, marbles, etc., coal and other commercial products, has been made very interesting and complete. Mr. L. W. Rockwell is the secretary of the board in charge of the exhibit. The building stones have been shown in the form of a pyramid, erected in the center of this space, while the front is adorned with panels of marble, terra-cotta, etc.

Utah.—The mineral exhibit is exceptionally fine, all of the prominent mines having contributed specimens to the collections, which include gold, silver, lead, copper, zinc, antimony, bismuth, tellurium and quicksilver ores. There is also a display of the commercial minerals, such as selenite, gypsum, salt, coal, asbestos and slate. The list of gems represented includes topas, garnets, opals, malachite, onyx, agates, crystal quartz and wood opals. Mr. Don Maguire is superintendent of the mining exhibit, and its success is attendant, for the most part, on his efforts.

Vermont.—A cube exhibit of the building and ornamental stones of the State is Vermont's contribution to the general display in the Mining Building at the Exposition. These specimens are derived from every

leading quarry in the State, and are dressed to a size corresponding with that adopted by the United States National Museum, with the different faces finished in different manners, thus showing the various characteristics of the stone to the best advantage. Mr. McIntyre is Executive Commissioner for the State and has had charge of all arrangements for the display.

Virginia.—This State has a good exhibit of almost all the minerals and ores of iron, manganese, lead, zinc, barytes, ochres, asbestos, mica, coal, onyx and other marbles, sandstones, soapstones, slate and other building stones. A series of metallurgical samples illustrating the process of reduction is shown. A pyramid of ores will be arranged as a trophy in the central space of the exhibit. Photographs and drawings of the coal and iron mines, and of the most typical apparatus employed in their operation are exhibited on the walls. Dr. J. S. Apperson, of Richmond, the Executive Commissioner of the State Board, has been particularly instrumental in gathering and installing this fine State exhibit.

West Virginia.—Coal and coke forms the prominent part of the exhibit, although a large variety of iron ores is also shown. This exhibit, together with several other varieties of commercial products of more or less mineral character, will be disposed in attractice forms about the space, such as in facades, trophies, arches, etc. Mr. W. N. Chancellor, of Parkersburg, president of the State Board, is in charge.

Washington.—In this space is a very attractive collection of gold nuggets, valued at thousands of dollars. Many varieties of gold and silver ores, copper ores, magnetic iron ores, garnets, and of building stone, coals, etc., have a place. A systematic search for handsome and attractive specimens was made by the Board of Managers of this State, and the 150 tons of minerals were collected from every county and mining district. Mr. N. G. Blalock has been ably assisted by Mr. George E. Pfunder in arranging this exhibit.

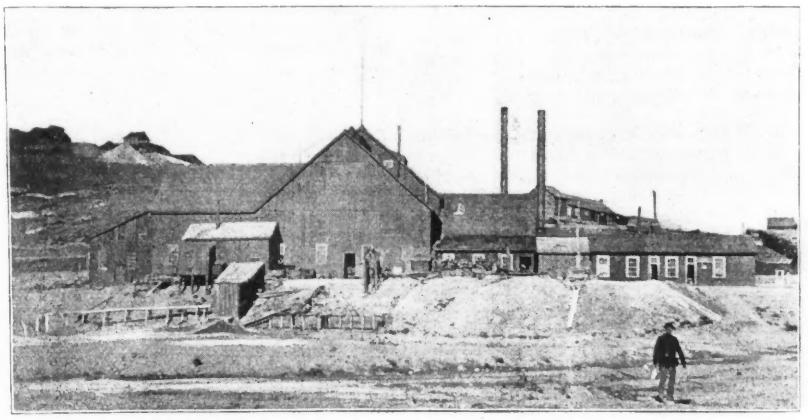
Wisconsin.—The space is situated on Bullion Boulevard, and is marked off by striking monoliths at the four corners. Garnet, lime and sand rocks, iron ores, and especially lead and zinc ores, play a most prominent part in this mineral exhibit. Other special features are gold and silver, quarts, copper, diamonds, jasper and serpentine. The pearl display is exceptionally fine. This exhibit has been assembled through the efforts of Mr. John H. Savage, of Shullsburg, with the co-operation of the Executive Commissioner, Mr. R. B. Kirkland, of Jefferson, Wis.

Wyoming.—This exhibit consists principally of samples of the precious metals; the exhibit includes, also, specimens of iron ores, building stone, etc., produced in that State. A map of the State, showing the distribution of the minerals geographically, is on exhibition, as well as maps showing underground workings and illustrative of mine engineering. This display has been gathered by the efforts of Mr. Elwood Mead, secretary of the Commission, and Mr. L. D. Ricketts, Commissioner.

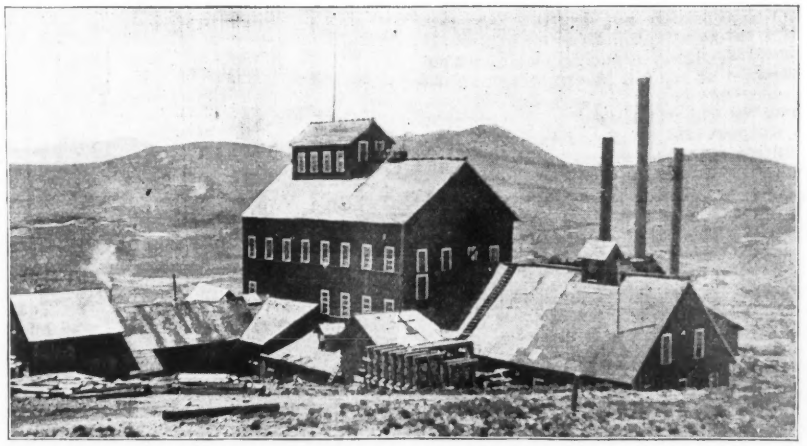
AN ELECTRIC MINING PLANT AT BODIE, CAL.*

The Standard Consolidated Mining Company has recently completed arrangements for a water-power and electric transmission plant to run its mill at Bodie, Cal., where it was believed that an important saving could be realized in this way. As wood costs about $10 per cord at the mill, and the fuel bills frequently exceeded $2,000 monthly, there was certainly an opportunity for improvement.

An excellent water-power was found at Green Creek, a mountain stream on the north slope of Castle Peak in the Sierra Nevadas, forming one of the chief sources of the East Walker River, and arrangements were made for a perpetual right to its use for power purposes, under very favorable conditions. This stream carries 500 miner's inches of water at its lowest stage, and runs six or eight times that amount at the time of melting snows. An old ditch was cleared out and practically rebuilt for a length of nearly one mile, and a site selected for a power-house at 355 ft. vertically below the lower end of the ditch. The work of clearing the ditch, building dam, head-gate, waste weirs, flume and penstock, the power-house, and of laying and anchoring the pipe, was pushed during the months of August, September and October, and in November the water wheels were put in place, so that by December the water-power plant was completed and ready to run. A pole-line was constructed following a straight line 12½ miles in length over the mountains from the mill to the power-house, the copper wire was strung thereon, and 14 miles of telephone line was built between the Bodie office and the power-house, but at a distance from the power line in order to avoid induction and consequent bad service of the telephones. The motor foundations were also put in at the mill, and a motor room 26 by 18 ft. built, while the necessary counter-shafting and pulleys for making the connection between the motor and battery shaft were made ready to be put in place.



THE STANDARD MILL, BODIE, CAL.



THE STANDARD HOISTING WORKS, BODIE, CAL.

Lumber and other material from the old Bulwer-Standard mill was used in construction at Green Creek, thereby greatly reducing the cost. The power-house, 30 by 40 ft. in size, was the former salthouse, and the penstock, or pressure tank, was one of the water tanks at that mill, while the steel receiver at the lower end of the pipe was made at the mine from an unused steam-drum. The ditch is 4,558 ft. long and is connected with the penstock by a short piece of flume fitted with the usual screen, sand-box, waste-weir and flushing-off gate. The pipe leads into a steel receiver, 40 in. in diameter by 9 ft. 8 in. long, from which four taper pipes lead the water under pressure of 350 ft. vertical head on to as many 21-in. Pelton water wheels, each pipe being fitted with two nozzles, and each wheel capable of developing 62½ H. P. The wheels run at 865 revolutions, and the wheel shaft will be connected by a patent insulating coupling to the armature shaft of a Westinghouse 120-kilowatt alternating dynamo, generating current at

*Abstracted from report of the Standard Consolidated Mining Company.

3,530 volts. A Doolittle governor is attached to the wheels, and a No. 2 Pelton motor has also been put in to run the exciter required for generating the initial current in the fields of the large machine.

The poles of the line are of round tamarack timber 21 ft. long, 5 in. in diameter at the top, 25-ft. poles being used through the town and where the ground required it. They are spaced 100 ft. apart, and fitted each with a 4-in. by 6-in. by 4 ft. cross-arm, boxed into the top of the pole, and fastened with one bolt and one lag screw. The wire is of No. 1 B. & S. gauge soft drawn bare copper, and is attached to standard double petticoat, deep grooved glass insulators carried on Klein ¾ in. by 8 in. iron pins. The wire used is of large section, but the distance of transmission is just at that midway point where the cost of converters about equals the difference in cost between a No. 1 and a No. 6 wire; hence it was considered better to use a higher potential and large wire and avoid the complicated and often troublesome converter. The loss of potential on the line is estimated at 15%, and the current delivered to the motor will therefore be of 3,000 volts tension. The motor is of 120 H. P., and will be brought up to speed by a small motor of 3 to 4 H. P., which is built on the same bedplate with the larger, and thrown out of circuit as soon as the latter is running at the proper speed, or in synchronism with the generator at the power-house. Two transformers, ratio 30 to 1, of a capacity of 100 incandescent lights each, will be used for lighting the mill and offices at Bodie.

The cost of this plant is given as follows: Water-power, including ditch, pipe, water-wheels, etc., $8,915; wire line, 12·46 miles, $10,474, or $840.63 per mile; motor-room, countershafts and pulleys at mill, $1,791; telephone line, 14 miles, $1,099, or $78.52 per mile; sundry expenses, $305; total, $22,584. This does not include the dynamos and motors, which had not been put in at date of the report. The cost of the work was somewhat reduced by the use of material from the old mill, as stated.

MINERAL EXPORTS OF MEXICO.

Written for the Engineering and Mining Journal by Richard E. Chism.

The latest report issued by the Treasury Department gives a statement of the exports from Mexico for the half year from July 1st, 1892, to January 1st, 1893. The values given are in Mexican dollars. The exports of precious metals were: Gold ores, $86,806; coined gold, $60,087; gold bullion, $169,204; gold in mixed bullion, $177,810; total, $493,907. Silver ores, $5,008,265; coined silver, $16,456,496; silver slags, $1,292; silver sulphides, $743,982; silver bullion, $2,506,642; silver in mixed bullion, $1,339,356; argentiferous lead, $3,184,082; total silver, $29,056,115. The total value of gold and silver exported was thus $29,550,022. The value of the copper exported was: Argentiferous copper, $1,600; copper, $785,167; total, $786,767. Of this copper 4,700,000 kilogrammes were exported from the port of Santa Rosalia, in Lower California, where is located the French Boleo Copper Company; 331,345 kilogrammes were exported through New Laredo, Tamaulipas, and probably came from the copper mines of Concepcion del Oro, in the State of Zacatecas and from the Panuco mines, near Candela, in the State of Coahuila. The exportation of copper through Eagle Pass was 37,302 kilogrammes, probably from mines along the line of the Mexican Central Railroad in the State of Aguas Calientes. The total exportation of copper was 5,088,742 kilogrammes, of which 378,872 kilogrammes went to the United States, 500 kilogrammes to France and 4,709,370 kilogrammes to England. Copper ore was exported to the amount of 435,685 kilogrammes, valued at $11,512.

Besides the argentiferous lead or base bullion noted above, pure lead was exported to the amount of 225,161 kilogrammes, valued at $60,691. Of lead ores there were exported 19,755 kilogrammes, valued at $500. Zinc ores were exported to the amount of 163,926 kilogrammes, valued at $8,000.

Other notable exports were 5,824,768 kilogrammes of coal, valued at $22,764, all to the United States; 894,200 kilogrammes of rough marble (called Mexican onyx), valued at $123,357, and 208,,500 kilogrammes of graphite, valued at $3,600. This latter was all exported through Guaymas, Sonora or Nogales, Ariz., and proceeded from some mines in the State of Sonora, owned by parties in San Francisco. Summing up the total of exports, I find that the value of the precious metals of Mexican origin exported was $29,550,022; the value of the base metals and base metal ores exported was $867,470; the value of all remaining exports, mostly agricultural products, was $9,697,296; making a total of $40,114,788.

This total differs slightly from the figures stated in the Treasury report, from which the statistics are taken, as I have omitted some exports of foreign origin which were included in the official figures, in order to show only the exports actually of Mexican origin.

It will be noted that iron is not included in the list of Mexican exports, although the country contains some of the largest deposits of that metal in the world. What the present production of iron is in the country cannot even be guessed at, but the subject was investigated in the first two months of this year by Mr. John Birkinbine, of Philadelphia, who will have some most valuable reports to make if the circumstances of his visit here should enable him to give his figures to the public.

The most notable thing in all the arrays of figures is that the silver product, or at least the silver exported, which is the measure of the product, has diminished $2,429,830 from the amount exported during the half year from July 1st, 1891, to January 1st, 1892. This represents the first-fruits of the mining law which has been lately adopted in Mexico, and which, during the first six months of its operation, has caused a falling off of the silver product to the extent of 8·38%.

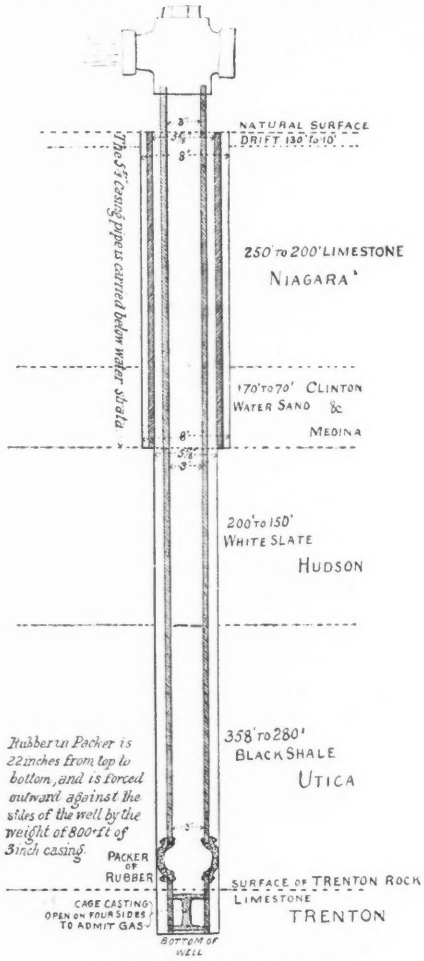
Quicksilver in Spain.—In the year 1892 the Almaden Mines produced 20,473 tons of ore, of which 14,488 tons were treated. The output of quicksilver was 44,804 flasks of 34·5 kilos. "El Porvenir," a new mine in the Asturias, working a sandstone carrying sulphuret of mercury, produced in 1892 from 5,350 tons of ore, 2,087 flasks of quicksilver.

THE INDIANA NATURAL GAS FIELD.

Written for the Engineering and Mining Journal by C. R. Boyd.

The great yield of the Indiana gas field and the nature of its topography, make its geology an interesting study. The extensive inclosures of natural gas, doubtless all connected in one vast reservoir, are at Alexandria, the center of the field, 858 ft. below the surface; at Muncie, on the east, 954 ft.; at Anderson, on the south, 838 ft.; at Elwood, on the west, 936 ft., and at Marion, on the north, 878 ft. The productive and most porous portion of this gas belt is about 1,600 square miles in extent. In ascertaining the surface railway level notes have been used, and these often disagree with each other. The best data have been collected by a careful study of the position of the streams, considered with the readings of the large number of wells sunk throughout the region, giving the true position of the broad Cincinnati arch, as well with reference to the general surface of the land and to the surface of the Trenton limestone, the pores and cavities of which constitute the great gas reservoir above alluded to.

These conditions may be comprehended by reference to the accompanying cross-sections taken at almost right angles to each other—one



GAS WELL AND CASINGS.

north and south, the other east and west. An enlarged section is also given, showing the geological horizons with the thicknesses of the various rocks, as well as the manner in which the wells or bores are fitted with their casings. This enlarged section is an average, taken from the records of Mr. E. D. Brooks, who has bored over 20 wells about the center of the field.

Comparing these sections with the notes recorded by the State Geologist, Mr. S. S. Gorby, and the State Gas Supervisor, Mr. E. T. J. Jordan, there is no wide departure from these measures throughout the most porous or high-pressure gas field, but near its margin differences in the reading begin to be marked.

One of the causes of obscurity in interpretation of the successive strata has been the failure to bore with the diamond drill and thus secure a core of sufficient dimensions for paleontological as well as structural identification. The churn drill has been employed in sinking nearly, if not quite, all the wells, because of greater cheapness and less liability to accident when the high-pressure gas was struck. In one of the wells, near Alexandria, the gas, when struck, actually raised the drill with 5⅜ in. bit, weighing 2,000 lbs., many feet. Where the Trenton rock might prove less porous, as now and then occurs, the diamond drill might be employed entirely through that rock, as well as down to its surface; certainly to the advantage of the student in determining the nice questions involved in the origin as well as the probable quantity and life of the gas.

Throughout the entire field, the surface is strewn with larger or smaller fragments and even boulders of Laurentian, Huronian and Taconian rocks, specimens of the transporting power of ice in the glacial epoch. These fragments are embedded in the soil overlying the glacial drift, which drift is from 5 ft. to 140 ft. thick, overlying the Niagara limestone, in the main. Occasionally, the first layers of this

limestone, now so widely employed for building purposes, look as if they could be readily mistaken for Corniferous instead of Niagara limestone, on account of the presence of a peculiar horn-shaped fossil embedded in the even slabs. The whole column appears as in the cross-sections given. The geology of this column has, however, been well ascertained by such paleontologists as Prof. S. S. Gorby, of Indiana, and Prof. Edward Orton, State Geologist of Ohio, to both of whom I am indebted for much assistance in this work, as well as to the memoir of Dr. Arthur John Phinney, which, with those of Orton and Gorby, now constitute a part of the literature of the United States Geological Survey.

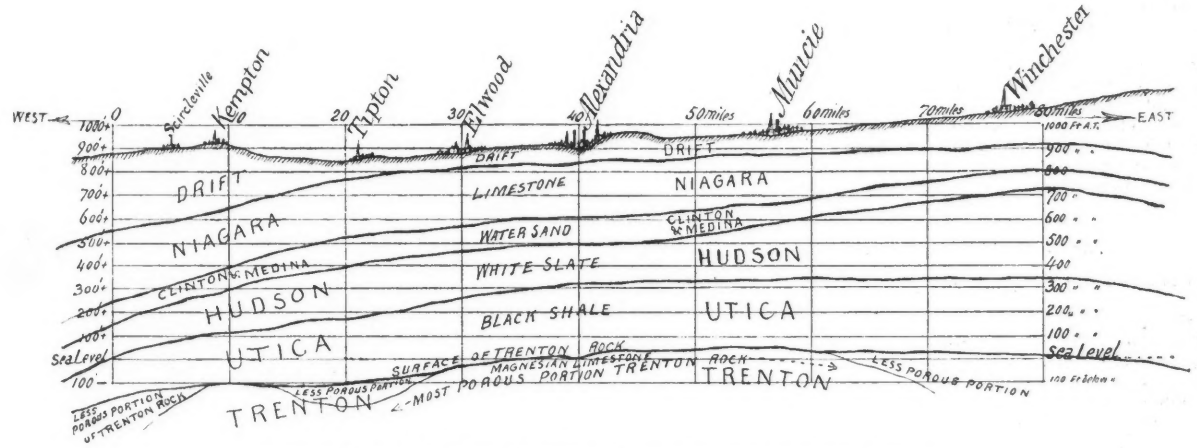
The names and probable relative quantities of those fossil forms existing in the Trenton limestones and Utica shales overlying, from the decomposition of whose originals the gas was doubtless derived, cannot be given, owing to want of proper borings.

Through what changes the several sub-divisions of the Trenton rock may have passed in the time since they were deposited, in order to arrive at their present condition, as the reservoir of this gas, it is extremely difficult to conjecture. Through many changes of temperature, doubtless, if not of consistency. Near the middle of the gas field, in the vicinity of Alexandria, the temperature of the gas in the Trenton rock is 60° F.; at Marion, and further north toward Wabash, the earth at even a greater depth is 50° F. While at the former place, the Trenton rock has been penetrated to a depth of 68 ft. with the drill, nothing issues as yet but dry gas. At Marion and Hartford, on the northern margin of the productive field, the 10° cooler temperature seems to have congealed much of the gas into oil, and, possibly to have partly closed the pores, of the magnesian limestone, of which the upper portions of the Trenton rock is composed.

Near the center of the belt, to a depth of over 50 ft. in the gas reservoir, the Trenton rock is porous or cavernons to the extent of 10 to 25% of the rock exposed by the drill, jndging by fragments loosened by the drill and ejected by the gas; and by careful measurements the gas is held under a compression of 290 to 325 lbs. to the square inch. From these data, the contents of a square mile of this rock to a depth of 68 ft. would be computed as enormous; but this method is hardly a certain one. There is also a strong probability that a great part of the volume of gas is derived from the bituminous portions of the Utica black shales overlying the Trenton. Looking at the cross-sections, this derivation of an additional amount of the gas is explained in this way: The Trenton and Utica rocks both begin to dip as you approach the ends of the sections; further from the dome observed in the sections—except in the direction of Cincinnati, and probably toward Chicago and Findlay—this condition of downward dip of the margins increases, and becomes so marked as to suggest the idea that, at several places, the Utica shales are turned down and almost crumpled under the Trenton. This was a slow movement doubtless, and at a time when all was plastic. Thus, large gas producing areas of the overlying rock was brought to much lower levels than the present gas reservoir occupies in the center of the great dome-like inclosure. All gas and oil liberated under such conditions would travel upward or laterally, following the most accessible cavities and fissures and, if it did not find its way to the surface, would be arrested and confined in any cavities that might exist beneath the impervious and unbroken part of the entire formation.

This explains Professor Gorby's statement, that the Utica shales are very largely the source of the gas of Indiana. It is also consonant with the theories of Profs. I. C. White, Lesley, Ashburner and Orton.

In the chemical changes which then took place iron sulphates in solution may have taken part, though there is no sulphuretted hydrogen in the gas. Sodium, magnesium and calcium chlorides, aluminum oxides and hydrated ferrous solutions, in the presence of masses of carbonaceous or bituminous matter and some silica, played the most important part; and the temperature which existed there then, and may still modify conditions in those zones, was doubtless as much due to chemical reactions as to any other cause.

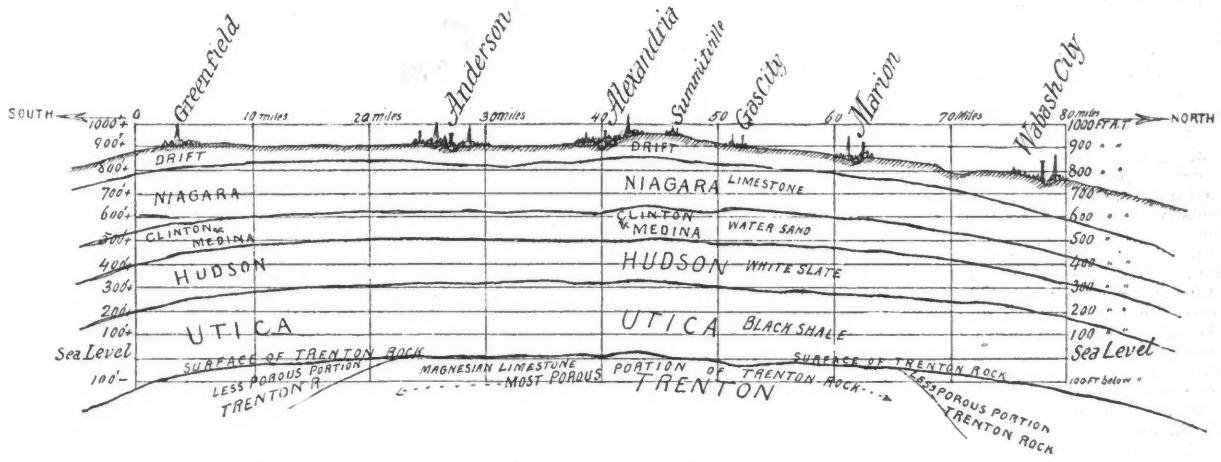


SECTION EAST AND WEST THROUGH MOST POROUS GAS FIELD, INDIANA.

As long as abnormal conditions of temperature can be detected at those depths in which the gas was formed, the production of natural gas is probably still in progress. The State law of Indiana should be enforced, which prohibits wells from being sunk thicker than one to every 40 acres, and, at the same time, all waste should be stopped, to prolong the life of the field.

The analyses of Indiana gas made by Prof. C. C. Howard and others show a remarkable uniformity of composition. They are almost identical with that given by Mr. W. J. Taylor in his paper published in Volume XVIII. of the "Transactions" of the American Institute of Mining Engineers, which is as follows: CO, ·50; H. 218; CH_4. 92 60; $C3H_4$. ·31; CO_2, ·26; N. 3·61; O. ·34. The weight is about 45·6 lbs. to the cubic foot, and the heat units in 1,000 cu. ft. are 1,100,000.

The field for the use of Indiana gas, in all cases where it is as dry as it now is in the central portion, must expand to the requirements of all metallurgical and domestic purposes; for its quantity, purity, heating capacity and cheapness are practically demonstrated. It is so cheap indeed that it is now guaranteed to manufacturing enterprises, indefinitely, free of cost and free of all restrictions except such as are imposed by the laws of Indiana and municipal corporations for its preservation. The present average producing capacity of the wells in the central part of the field is about 8,000,000 cu. ft. in 24 hours.



SECTION NORTH AND SOUTH THFOUGH MOST POROUS GAS FIELD, INDIANA.

Smokeless Coal.—A recent German invention for the purpose of preventing smoke when coal is used as fuel consists in reducing the coal to a powder and feeding this to the furnace with an air blast. The coal so prepared ignites at once upon entering the furnace and gives an intense flame. The dust does not fall, but floats in the furnace chamber and is entirely consumed. There are no ashes, and it is said there is no smoke from using coal in this shape. The fires can be regulated the same as when oil is used, and, as with the use of oil, the fires can be started or extinguished at pleasure.

REPORTS OF THE MINE INSPECTORS OF PENNSYLVANIA FOR 1892.

ANTHRACITE.

Since 1869 the anthracite coal mines have been under the inspection of persons selected after a competitive examination, and who are commissioned by the Governor to serve four years. They report annually to the Secretary of Internal Affairs, their reports covering the calendar year. As the coal operators are required to make returns of production, etc., to them for the same period, it is quite impossible for the inspectors to complete their returns until a considerable period afterward. The last of the anthracite mine reports for 1892 has just been received. The accompanying table shows the production and number of persons employed during the last five years.

The anthracite coal region is divided into eight districts. The first district comprises parts of Lackawanna and Susquehanna counties, and the mines in this district are inspected by Edward Roderick. The total production of coal in the district was 5,854,638 tons, an increase of 469,466 tons over that of 1891. The general condition of the mines is reported as excellent, and ventilation during the year was greatly improved by the erection of new fans and the sinking of several new air shafts. In all 9,940 persons were employed at the close of the year. The average time worked by 43 collieries was 209 days. The number of fatal accidents was 55, of which 36 were caused by falls of coal and rock. The inspector's report contains some interesting remarks concerning the causes of fatal accidents. Nearly all of the mines are free from carburetted hydrogen and accidents from explosions are few, but persons who are constantly exposed to danger regard their situation with indifference and too many lose their lives in consequence. Very often, for instance, a miner knows that a prop should be put in a certain place, and neglect to do this frequently costs him his life.

The second district comprises a part of Lackawanna County in which is included the mines at Scranton. The mines in this district are inspected by Patrick Blewitt. The quantity of coal produced was 6,013,537 tons; quantity shipped, 5,461,843 tons; while 346,276 tons was consumed by the collieries. The number of mines in this district is 42; the average number of days worked, 185; number of miners employed, 3,490; number of miner's laborers, 3,290; number of other persons employed in the mines, 3,128; number employed outside, 4,525; a total number of 14,433 employees. The number of fatal accidents was 33.

The third district comprises parts of Luzerne and Sullivan counties, and the inspector is Hugh McDonald. The abandoned portions of the largest collieries have been filled with culm where indications existed of the weakening of the pillars and a crushing of the roof. Orders compelling the miners to pay greater attention to propping are being more strictly enforced by the foremen than heretofore, and will have the effect of reducing the number of accidents, since the most frequent cause is the neglect of miners to observe this precaution. This district has been free from any musual disasters during the year, but there have been some destructive fires.

The fourth district comprises a part of Luzerne County, and is inspected by G. M. Williams. The mines at Wilkes-Barre are included in this district. The quantity of coal produced during the year was 7,549,605 tons, or 89,645 tons less than was produced in 1891. The number of fatal accidents was 83, or 13 less than for the previous year. The number of serious non-fatal accidents was 180. Nothing especially new is reported regarding the condition of the mines, but some improvements in ventilation have been made. The mines in this district are nearly all very dry and dusty, especially the workings below tide-level, and the dust in the face of the workings in a source of annoyance and hindrance to the circulation of the air current. The inspector asserts that it has not been proved that the dust of anthracite coal promotes explosions, but it may assist to intensify the heat of the gases in an explosion, and, if so, the expansion is enhanced and a greater force is developed, increasing its destructive power. The accessible parts of abandoned workings throughout the district are generally in safe condition.

The fifth district comprises a part of Carbon County, and that part of Luzerne County which lies south of the Wyoming coal field. The mines in this district are inspected by John M. Lewis. The production of coal for 1892 was 5,842,720 tons, an increase of 38,756 tons over that of 1891, and the largest output reported for any year. In all 48 lives were lost during the year, five less than the previous year. The number of non-fatal accidents was, 10, also five less than the previous year. One life was lost for every 121,725 tons of coal mined, and there was a non-fatal accident for every 53,116 tons mined, or an accident of some kind for every 36,979 tons of coal mined. By another calculation one person in every 339 employed was killed and one person injured in every 148, and one either killed or injured in every 243 persons employed.

The sixth district comprises a part of Schuylkill County, and is inspected by William Stein. The production for 1892 was 6,382,346 tons, 36,956 tons less than was produced the previous year. The total number of tons shipped to market was 5,630,825, or 751,496 tons less than in 1891. The condition of the collieries in this district has been considerably improved, and increased vigilance during the year has resulted in diminishing the number of accidents. In many cases an additional assistant mine foreman has been employed, who is required to visit the workmen as often as practicable, and to give suggestions for avoiding risks. Notwithstanding these precautions 54 fatal accidents occurred, although only 19 of them could be called purely unavoidable. Four lives were sacrificed by a premature explosion, these men having gone back to the shot before giving it time to explode. Nine lives were lost by jumping on cars and by getting on the high side of gangways instead of the low side to permit cars to pass. The law expressly prohibits employees from riding on cars at all in consequence of the danger. The seven deaths from the explosion of gas were caused by the carelessness of the victims themselves, some of them being the most skilled miners in the district. Nine were killed by falls of coal, two by machinery on the surface and four by miscellaneous causes; for example, a miner firing a shot without giving notice to his neighboring workmen, or not retreating far enough away when going to fire a blast.

The seventh district comprises the whole of Northumberland and Dauphin counties and a part of Schuylkill County, and is inspected by Edward Brennan. The quantity of coal produced in 1892 was 5,464,678 tons, an increase of 143,634 tons over the production in 1891. The number of fatal accidents was 45, or 11 less than recorded for 1891.

The eighth district comprises parts of Schuylkill and Carbon counties, and is inspected by Samuel Gay. The total output of coal for 1892 was 3,066,092 tons, an increase of 36,992 tons over the previous year. The production per life lost was 61,321 tons, against 108,274 tons the previous year. There were 22 more lives lost through various causes than during 1891, or a total of 50; while the loss for the previous year was 28. New breakers have been completed with large capacity. The new breaker at the New Silver Creek shaft has a capacity of 1,000 tons a day, while the one at the Lytle colliery can crush much more. Mr. Gay's report contains some very interesting remarks concerning the condition of the collieries and the cause of accidents in them. He says that if the death-roll of the past year was compared with previous ones and readers rendered their verdicts thereon, the impression would be that the mines were not as safely conducted as formerly, but such a verdict would be far from a just one, for even this death-list is not to be compared with those of former years when the mine law first came into force. A great many lives were lost in the York Farm and Lytle collieries. Outside of these the general condition of the mines is good, and with the exception of some small concerns, or in some parts of the larger collieries where nothing but "robbing back" is being done, the ventilation is adequate. The report contains an elaborate description of the disasters at the York Farm and Lytle collieries.

(To be Continued.)

PRODUCTION OF COAL AND NUMBER OF EMPLOYÉS BY COUNTIES IN THE ANTHRACITE COAL REGION OF PENNSYLVANIA.

Counties.	Tons produced.					Employés.				
	1888.	1889.	1890.	1891.	1892.	1888.	1889.	1890.	1891.	1892.
Columbia	712,821	515,018	599,418	761,355	889,186	2,087	1,886	2,219	2,787	2,424
Carbon	1,499,032	1,044,145	1,266,314	1,191,156	1,427,531	4,563	2,715	3,075	3,312	3,848
Dauphin	579,941	606,773	577,490	624,567	639,878	2,136	2,276	2,203	2,145	2,104
Luzerne	18,397,153	16,264,446	15,825,874	17,526,260	17,584,515	48,495	46,488	43,680	46,710	48,369
Lackawanna	10,206,055	8,197,280	9,374,360	10,391,307	11,410,553	24,731	23,321	25,095	24,849	27,533
Northumberland	3,075,548	2,973,239	3,204,861	3,701,028	3,724,237	11,491	12,298	12,291	12,549	13,254
Schuylkill	8,097,123	8,740,521	9,061,887	9,681,339	9,659,513	26,073	28,872	30,503	30,289	22,189
Susquehanna	213,595	261,827	315,315	366,261	457,622	591	478	669	823	999
Sullivan	84,031	71,390	63,745	74,884	76,209	273	256	237	229	261
Totals	42,815,299	38,971,639	40,289,355	44,321,157	45,833,543	120,446	118,590	119,972	123,702	120,972

Exports of Emery from Naxos.—In 1892 about 3,800 tons of emery were exported from Naxos, Greece, the greater part of which went to Havre and Hamburg. It was expected that the exports would be considerably larger than this, as at the beginning of the year the Grecian government gave the leasers very favorable terms.

New Uses for Aluminum.—Every day we see aluminum applied to new uses, in articles where a saving in weight is desirable and strength is unimportant. One of the latest novelties is a tripod for landscape cameras made of aluminum tube; another is a fine chain for eyeglasses, no coarser than the ordinary chain of gold and several times lighter. The consumption of aluminum is not likely to be perceptibly increased by these uses, but they are illustrative of the great variety of purposes for which the metal can be advantageously applied.

Tests of Cut and Wire Nails.—The committee having in charge the competitive tests of cut nails and wire nails recently made at Watertown, Mass., has submitted the final report of the engineer, Mr. W. H. Burr. In all 58 tests were made, each including 10 cut and 10 wire nails. The nails were driven in spruce, and the smaller sizes of box nails were driven in pine also. The nails tested varied in length from 1¼ in. to 6 in. The report states that in all the tests the cut nails showed superior holding power, especially when driven with taper perpendicular to the grain of the wood. In the nails driven in pine the superior holding power of the cut nails was more marked than in spruce.

International Hygienic Exposition.—An international exposition of medicine and hygiene is to be held in Rome, Italy, beginning September 15th, and remaining open one month. The International Medical Congress will be held in Rome during the continuance of the Exposition. All who are interested in the Exposition are invited to communicate with Prof. L. Pagliani, who is president of the commission, at Rome. Apart from purely technical medicine, the Exposition will include several classes of general interest, among them being life-saving apparatus and methods; apparatus and methods for purification of the soil; apparatus and methods for hygienic service of cities, and for hygienic service and improvement of dwellings; hygienic constructions generally; hygiene of workshops and factories; individual hygiene. The representation of European exhibitors will be large.

THE ENDLESS TROUGH OR PAN CONVEYOR.

The accompanying illustrations show a form of hoist or conveyor very useful for clay, ores or coal, which is made by the Link-Belt Machinery Company, of Chicago. Fig. 1 shows a general view, while Fig. 2 is a view showing the method of construction. The engraving is from a photograph of one of these conveyors in operation at the yard of the Alsip Brick Company, Chicago, conveying the clay from granulator to rolls. A uniform supply of clay to the rolls is maintained by the use of this conveyor. The pans are also made to overlap each other, and are attached to outriggers with flanged carrying rollers or sliding blocks, designed for running on a track. These conveyors are also in use for carrying slag and hot ores from the roasting furnace. The Bunker Hill & Sullivan Mining Company has had two, each 100 ft. centers, in use at its mill at Wardner, Idaho, for several years, and they have worked exceellently. One of the same pattern, 410 ft.

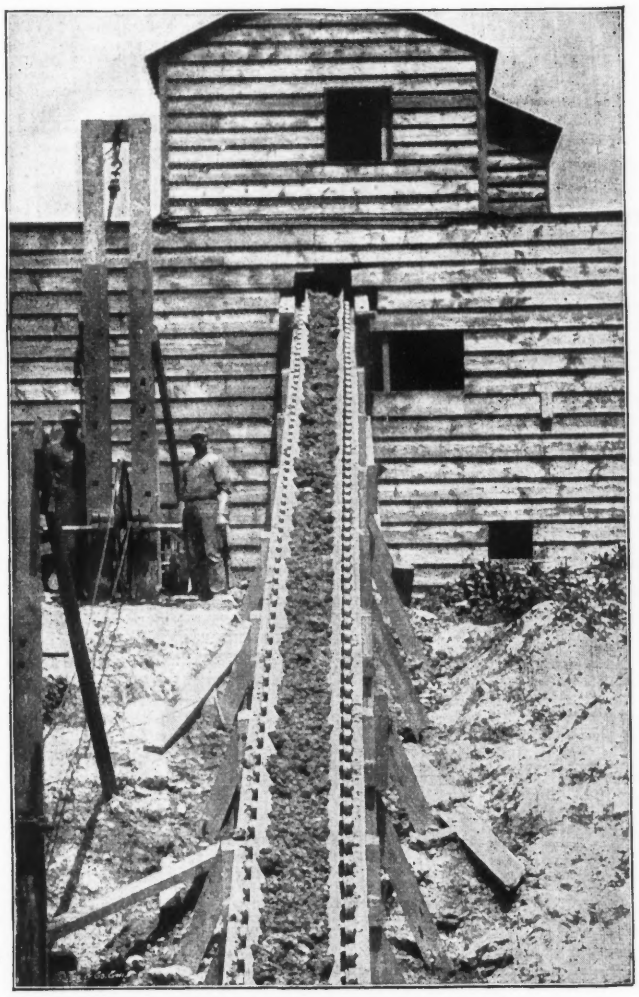


FIG. 1.

PAN CONVEYOR FOR COAL, ORES, ETC.

long, is in use at the Miller Portland Cement Works, at Warners, N. Y. The construction will be readily understood from the engravings.

The Chenhal Process for Solidifying Petroleum.—In brief this process consists in heating 600 parts of the oil with 300 parts of melted and dissolved soda, 10 parts of concentrated calcium chloride solution and 90 parts of resin. After the mass has become solid it is cut up into briquettes, which can be used in the same way as coal or any other similar fuel.

Coal Output of Poland.—In 1892, the 17 collieries of the kingdom of Poland situated near Dombrovo and Sosnowice, produced 3,366,000 tons of coal; an increase of 306,000 tons over 1891. The yield, it is stated, would have been much greater if the Warsaw-Vienna railway had possessed during the last quarter a larger number of wagons. The prices obtained were a little better, especially for superior qualities than those of 1891.

Utilization of Coal Shale.—For several years past Mr. Mitchell has been experimenting at the Mitchell Main Colliery, South Yorkshire, in the hope of discovering some means for the utilization of the vast amount of coal shale which is brought up out of almost every colliery in Yorkshire. His ideas have centered chiefly in the manufacture of water gas, and, according to the "Iron and Coal Trades Review," he has devised an apparatus which is said to be inexpensive, to be easily manipulated, and to give very satisfactory results. At some experiments recently made it seems that the shale gives as a product 34% of generator gas and 92½% of water gas. The whole of the colliery premises are lighted by gas made from the shale, and it is intended to heat the boilers by means of the generator gas, thus effecting considerable economy in working the colliery.

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—Estoppel 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, involving property in Plumas County, Cal. Plaintiff appellant.

1. Under Revised Statutes U. S., Sec. 2320, patent cannot issue for mining claim exeeeding 300 ft. wide, though original location was wider and made under act of July 26th, 1866, by which the width of claims was regulated according to custom of miners; and where patent is issued for full width of such claim it is void as to the exeess, and Revised Statues U. S., 2328, cannot be construed to preserve a right to the issuing of patent covering the full width of the original location. —(5, Fed. Rep., 3333 affirmed.)

2. In an aetion of ejeetment by patentee of mining claim when 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 circumstanees nor for what persons, nor for what time such payment was made, the relation of landlord and tenant is not established so as to stop defendants from denying patentee's title.—(53 Fed. Rep. affirmed).—McKenna, Chief Justiee, delivered opinion. Judgment of court below affirmed, January 30th, 1893.

PATENTS PUBLISHED IN GREAT BRITAIN.

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

WEEK ENDING MAY 6TH, 1893.

8,551 of 1892. Aluminum Solder. C. Sauer, Berlin.
9,474 of 1892. Extraction of Cyanides as By-products from Heating and Illuminating Gas. W. Foulis, Glasgow.

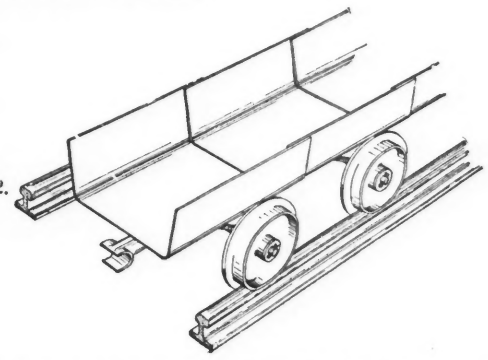


FIG. 2.

10,546 of 1892. Locking Arrangements for Miners' Safety Lamps. A. H. Wormald, Manchester.
20,769 of 1892. Coke Ovens. Dr. T. Bauer, Berlin.
3,862 of 1893. Water-jacketed Kiln or Furnace, with Water-jacket Used as a Steam Generator. A. Stein, Wetzlar, Germany.
4,767 of 1893. Improvements in Alkali Manufacture. I. Lederer, Prague, Austria.
4,869 of 1893. Manufacture of Potassium and Other Chlorates by Electrolysis. W. T. Gibbs and S. P. Franchot, Buckingham, Canada.

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, MAY 9TH, 1893.

496,840. Continuous Brick Drying and Burning Machine. Squire Ainsworth, Pittsburg, Pa.
496,846. Bumper for Mine Cars. Darius Bennett, Nelsonville, O.
496,863. Apparatus for Electrolysis of Salt. Thomas Craney, Bay City, Mich.
496,864, 496,865. Electrolytic Apparatus. Thomas Craney, Bay City, Mich.
496,866. Apparatus for Washing Salt. Thomas Craney, Bay City, Mich.
496,873. Machine for Forging and Compacting Ingots. Richard J. Gatling, Hartford, Conn.
496,890. Method of Welding Metal. Arthur J. Moxham, Johnstown, Pa.
496,911. Hydrocarbon Burner. George A. Shelby, Detroit, Mich.
496,927. Apparatus for the Manufacture of Gas. Charles E. White, Kansas City, Mo., Assignor of seven-twentieths to John C. Sterling, samo place, and Harry W. Sterling, Chetopa, Kan.
496,942. Hoisting Whim. Clarence A. Lawton, Denver, Colo.
496,959. Apparatus for Utilizing Solar Heat. Melvin L. Severy, Boston, Assignor by direct and mesne assignments to himself and Francis Deane, Norwood, and Charles F Crowell, Boston, Mass., trustees.
496,990. Process of Utilizing Metallic and Earthy Oxides and Salts as Pigments or Paints. William N. Blakeman, Jr., Mount Vernon, N. Y.
497,012. Power Hammer. Christopher C. Bradley, Syracuse, N. Y.
497,042. Tripod. Warren Wood, Paterson, N. J., Assignor to Samuel G. McKiernan, same place.
497,043. Rock Drill. Warren Wood, Paterson, N. J., Assignor to Samuel G. McKiernan, same place.
497,072. Tuyere. Malvern W. Iles, Denver, Colo.
497,073. Automatic Stoker. John H. Johns, National Military Home, Leavenworth County, Kan.
497,088. Apparatus for Recovering Alkali. Henry Blackman, New York, N. Y.
497,092. Compression Pump. William F. Davis, Kansas City, Kan., Assignor of one-fourth to Robert H. Davis, Raymond, Neb.
497,097. Gas Generator. John P. Jackson, Liverpool, England.
497,117. Magnetic Ore Separator. Charles G. Buchanan, New York, N. Y.
497,191. Furnace with Air, Steam and Hydrocarbon Fuel Feeding Attachments. William McClave, Scranton, Pa.
497,195. Water Motor. Juan W. McCoy, West Berkeley, Cal.
497,204. Centrifugal Ore Pulverizer. Orrin B. Peck, Chicago, Ill., Assignor to Melinda Peck, same place.
497,211. Trap Door for Mines. John Rees, Hamilton, Ia.
497,267. Amalgamator. Joseph Ellison, Denver, Colo.
497,268. Pyrometer. Thomas M. Eynon, Philadelphia, Pa., Assignor to the Eynon-Evans Manufacturing Company, of Pennsylvania.
497,287. Tool for Grasping and Carrying Hot Utensils. Albert H. Ristedt, Cleveland, O.
11,333. Reissue. Tunneling Machine. Reginald Stanley, Nuneaton, England.
11,334. Reissue Process of Separating and Cleaning Coal and Other Minerals. Carl Lührig, Dresden, Germany, Assignor, by mesne assignments, to the Lührig Coal Washing Company, of West Virginia.

PERSONALS.

Capt. John Huff has been appointed superintendent of the mine of the Gold Mountain Company, near Dahlonega, Ga.

The French Academy has made Prof. Henry Augustus Rowland, physicist, of Baltimore, Md., a corresponding member.

Mr. James A. Case has resigned his position as assistant statistician of the Interstate Commerce Commission, and will engage in the practice of the law.

Mr. James Curnow, metallurgist of the Harney Peak Tin Mining, Milling and Manufacturing Company, is now in England, where he will remain during the summer.

Captain Bryant, late of the Appleton and Loretta mines, on the Menominee range in Michigan, is to take charge of the Waucedah explorations during the summer.

Mr. H. K. McCauley has been elected treasurer of the Altoona Iron Company, Altoona, Pa., to fill the vacancy caused by the recent death of Dr. Thaddeus S. Gardner.

Mr. Frank Nicholson, mining engineer and metallurgist, of Phoenix, Ariz., is at present in New Mexico, where he has been appointed general manager of the Little Fannie mine.

Mr. J. S. Childs, superintendent of the Harney Peak Tin Mining, Milling and Manufacturing Company, has been in this city, attending the meeting of the directors of his company, which occurred on the 8th inst.

Mr. James Dredge, editor of "Engineering," and one of the British commissioners to the Columbian Exposition, was entertained at dinner in Chicago, May 3d, by the members of the Western Society of Engineers.

Mr. Ernest Wiltsee, mining engineer of San Francisco, has accepted the position of mine manager for Barnato Brothers at Johannesberg, in the South African Republic, and sailed from London April 29th, for the Cape.

James D. Roberts was recently appointed receiver of the Lookout Iron Company, of Harriman, Tenn., and he will at once begin to wind up the affairs of the company. It is the general opinion that the company will be reorganized at an early date.

Mr. H. L. Gantt, late of the Midvale Steel Company, has been appointed general superintendent of the American Steel Wheel Company, in place of George W. Cushing, who has resigned. Mr. Gantt will have charge of the new works at Garwood, N. J.

Prof. W. S. Yates has been appointed State Geologist of Georgia, in place of Dr. J. W. Spencer, who has resigned. Professor Yates has been for two years past in charge of the department of Minerals and Geology in the National Museum of the Smithsonian Institution in Washington.

Mr. Frank Cazin, the designer and for two years engineer and superintendent of the extensive smelting works of the Compania Metallurgica Mexicana, at San Luis Potosi, Mex., has resigned his position there and returned to Denver, Colo., where he has resumed his practice as consulting engineer.

Mr. Leopold Grahame, late proprietor of our esteemed contemporary the "South African Mining Journal," and who has for the last nine months filled the dual position of editor of the "Journal" and managing director of the South African Publishing Company, has resigned both appointments. It is stated that Mr. Grahame will devote himself to an extension of his connection with financial journalism.

The Denver Mining Exchange held its annual election on May 6th. The following officers were elected: President, W. B. Root; vice-president, A. B. Roeder; secretary and treasurer, Joe H. Hutchinson; assistant secretary, E. P. Hobart. This will be Mr. Root's second term as president. His re-election gives general satisfaction. The following were elected to membership in the exchange: Messrs. W. F. Reinert, L. F. Parsons, J. Holtschneider, Jason P. Le Bell, F. G. Reib and A. H. Blow.

OBITUARY.

Floyd H. White, who died in Philadelphia, April 29th, was at one time secretary and treasurer of the Camden & Amboy Railroad Company. Since 1877 he had been secretary of the American Dredging Company.

John G. West, for many years manager of the Scott Works, of Reading, Pa., died at that city on May 9th, aged 70 years. Mr. West was an Englishman by birth and came to this country when young. One of his noted achievements was the designing and building of the pumping engine, "President" for the Lehigh zinc mines at Friedensberg, Lehigh County, Pa.

Dominick Briden, a well-known mine foreman and superintendent, died in San Francisco, Cal., on May 3d. The deceased was a native of Ireland and about 47 years of age. He had been connected with some of the Comstock mines in an official capacity in former times, and more recently he was engaged by leading capitalists to report upon properties in outside districts.

Sir James Anderson, who died in London, England, May 7th, aged 68 years, was at one time a captain in the Cunard Line. Later he commanded the "Great Eastern," when that vessel laid the first successful Atlantic cable. For some 20 years past he had given his attention to electrical matters, and had written some valuable papers on submarine cables.

J. H. Ernest Waters was found dead on May 9th in his room at the Denver Club. He died of poison, but whether with suicidal intent has not been determined. He was one of the best-known mining men in the West. For the past 12 years he managed the Sheridan-Mendota mines, situated near Telluride, for a syndicate of British bankers living in Hongkong, China. He was an Englishman, and had accumulated a fortune.

Jacob Humbird, who died in Cumberland, Md., May 4th, aged 81 years, was born in the Ligonier Valley, in Western Pennsylvania, and received his training as an engineer on the construction of the old Portage railroad from Hollidaysburg to Johnstown. In 1837 he began business as a contractor and few men have been engaged in more important works, the list including the Chesapeake & Ohio Canal, several sections of the Baltimore & Ohio, the Allegheny tunnel on the Chesapeake & Ohio Railroad, the Blue Ridge Railroad in South Carolina, the West Wisconsin, the North Wisconsin and a large part of the Western Maryland in this country, and the Don Pedro II. Railroad in Brazil. He leaves a large fortune.

SOCIETIES.

Technical Society of the Pacific Coast.—At the regular meeting in San Francisco, May 5th, two papers were read; one on "Electric Transmission," by Mr. W. H. C. Hasson, and an essay on "Photographic Topography," by Mr. Ernest McCullough.

Civil Engineers' Society of St. Paul.—At the regular meeting in St. Paul, May 1st, Messrs. R. B. C. Bement and Lewis W. Clarke were elected to membership. Mr. E. E. Woodman addressed the society on the Geology of the Lake Superior Iron Regions.

Engineers' Club of Philadelphia.—At the regular meeting, April 15th, Mr. Edward K. Landis read a paper on "The Development of the Tilly Foster Iron Mine," in which he gave a brief historical account of the possession and early working of the property, and a detailed description of its more recent development. A letter from Mr. Perre Giron was presented in answer to the discussion on his paper "The Burning of Portland Cement," read at the last meeting.

Mahoning & Shenango Valley Iron Manufacturers' Association.—At the annual meeting in Youngstown, O., recently the following officers were elected: J. G. Butler, Jr., president; W. Scott Bonnell, vice-president; Harry S. Evans, secretary; W. E. Taylor, treasurer. The executive committee consists of J. J. Spearman, of Sharpsville; E. A. Wheeler, of Sharon; James Neilson, George D. Wick, J. F. Taylor and Robert Bentley, of Youngstown.

Engineers' Club of St. Louis.—At the regular meeting, May 3d, Mr. N. W. Eayrs presented the paper of the evening on "Corroded Girders in the Bridge Approach, illustrating a peculiar condition of the strains in the Webs of Plate Girders." The web in a number of the girders had been corroded and eaten away, leaving a number of large holes in the web. The girders were erected nearly 20 years ago. The destruction of the web was caused by the smoke and heat of the engines. In painting the girders a charcoal and litharge paint was found to be the best, owing to its remaining soft in spite of the heat. Professor Johnson described a new apparatus for testing the girders in bridges.

Engineers' Society of Western Pennsylvania.—At the regular meeting, April 14th, 11 applicants for membership were elected. The papers of Messrs. W. G. Wilkins and G. Kaufman on "Foundations," read March 21st, were discussed. Mr. G. S. Davison read a paper on "The Water Supply of the Olive Coke Works."

The Chemical Section met April 25th. Report of progress was made by Prof. F. C. Phillips for the Committee on Water Supply appointed at the February meeting. Professor Phillips also read a paper on "Experiments with the Anderson Purification Process on Allegheny City Water." The process was fully discussed by Mr. F. Crabtree, Messrs. R. N. Clark, T. P. Roberts, J. O. Handy, H. T. Weed, Jas. Camp and K. F. Stahl. Mr. Handy proved, by calculations, that only a very small percentage of the organic matter in the Allegheny River water at Pittsburg could be of sewage origin. The remainder must come from peat, dead leaves, etc. The water is of great organic purity, but as it receives sewage constantly at various points above Pittsburg, it may at any time bring disease germs. Mr. Handy also gave results of the use of water. The cities using sand filters have a very low death rate from typhoid fever; London has been a notable example. Sand filters also remove cholera germs almost completely, as experience at Altoona has shown.

WORLD'S FAIR NOTES.

Among the larger exhibitors of mining machinery in the Mines Building are the following: Fraser & Chalmers, of Chicago, who exhibit power machinery, hoisting machinery, amalgamators, concentrators, drills, ore couplers, etc. Their exhibit occupies 6,060 sq. ft.

Chicago Iron Works exhibit hoisting and pumping machinery, concentrators, etc.

Ingersoll-Sargent Drill Company, of New York, exhibit drills and air compressors.

The Corey Car Manufacturing Company, of Chicago, steel dump cars.

Borden & Selleck, Chicago, Harrison coal conveyors and bucket elevators.

Truax Manufacturing Company, Denver, Colo., ore cars.

Seymour Concentrator Company, Chicago, concentrating machinery.

Woodbury Concentrator Company, San Francisco, concentrators.

Jeffrey Manufacturing Company, Columbus, O., coal handling machinery.

R. S. Brown, Pittsburg, Pa., coal cutters.

Sullivan Machinery Company, Chicago, diamond prospecting drills.

R. McCully, Philadelphia, ore crushers.

Steam Stone Cutter Company, Rutland, Vt., steam stone cutters.

Bradley Fertilizer Company, Boston, Griffin Mills for pulverizing.

Jas. Leffel & Co., Springfield, O., water wheels and turbines.

McKay Electric Reciprocating Tool Company, Boston, magnetic reciprocating rock drills.

Cambria Iron Works, Johnstown, Pa., steel castings, etc.

Gates Iron Works, Chicago, rock and ore breakers.

M. C. Bullock Manufacturing Company, Chicago, hoisting machinery, rock drills and air compressors.

Rand Drill Company, New York, rock drills and compressors.

At the Government Building, in the Government exhibit, Chicago World's Fair, in charge of Captain A. H. Russell, is a Riehle 200,000-lb. vertical screw power testing machine; and in the quartermaster's department in the Government Building a 200-lb. cloth testing machine. These were loaned by the Riehle Brothers Testing Machine Company, Philadelphia, to add to the government exhibit.

INDUSTRIAL NOTES

The Hercules pipe works are being removed from Pell City to Anniston, Ala. The new works will be in operation by July.

The Poughkeepsie Iron Company is about to replace No. 2 stack of its blast furnaces at Poughkeepsie, N. Y., by a new and larger stack.

The French Cabinet has discussed the reduction of petroleum duties and has practically agreed to reduce them, although final action has not yet been taken.

The machinery is now being put in at the South Baltimore Rolling Mills, at Curtis Bay, Baltimore, Md., and the mill will probably be ready to begin work in August.

The furnace men, about 300 in number, of the Duquesne works of the Carnegie Steel Company, have had notice of a 20% reduction in wages, to take effect May 8th.

Ground has been broken at Cumberland, Md., for the new plant of the Cumberland Iron and Steel Shafting Company. The building will be in the form of two wings, one 180 × 78 ft. and the other 283 × 80 ft.

The Pennsylvania Railroad Company has just closed a contract for covering the new trainshed and cornices at Broad Street Station, Philadelphia, with sheet copper. The contract calls for 125,000 lbs. of cold-rolled sheet copper.

The Duquesne Steel Works, Pittsburg, resumed on May 8th, after an idleness of four weeks, during which some extensive repairs were made. Trouble was expected on account of the reduction in wages, but all went to work.

The large plant of the Reading Rolling Mill Company, which recently went into the hands of a receiver, has been running without interruption and is now full of orders. Owing to the large amount of work on hand the establishment has just gone on double turn.

At the annual meeting in Roanoke, Va., May 3d, the following officers were elected by the Crozer Iron Company: S. A. Crozer, president; J. P. Crozer, secretary; E. Crozer, treasurer; directors, the above officers and S. A. Crozer, Jr., F. E. Weston, C. B. Houston, T. H. Houston.

The Lufkin Rule Company, Saginaw, Mich., issues a very neat catalogue, describing and illustrating the rules made in their works, including engineers' steel tape-lines, pocket lines, steel folding and straight rules and a great variety of board and log rules, calipers and gauges.

A press dispatch from Pittsburg, Pa., says that the Pittsburg iron and steel manufacturers will prepare a scale this year that will provide some heavy reductions in wages. Puddling, they claim, must come down to $4 a ton, and the wages of the finishers in proportion, which is equivalent to a cut of about 20%.

The Commercial Electric Company, Indianapolis, Ind., has issued a very neat illustrated catalogue of its motors and dynamos. The special point in relation to these is that forged wrought iron is used entirely for the field magnet and dynamo frames instead of cast iron, reducing the weight and securing other important advantages.

The Finishers' Union, which held its first annual convention in Youngstown, O., on May 6th, decided not to return to the Amalgamated Association. A schedule of wages was decided upon. It is the same as the Western iron scale of this year.

The Berlin Iron Bridge Company, East Berlin, Conn., has issued a very handsome catalogue of 320 pages, with over 150 illustrations, the latter showing a large number of buildings, roofs and bridges built by the company. The use of iron and steel construction for roofs and buildings is extending very rapidly, and in this catalogue a number of interesting examples of such construction may be found, including roof trusses of 80 ft., 100 ft., 110 ft. and 118 ft. clear span.

The business of the Sullivan Machinery Company, Chicago, has grown so rapidly both in volume and in lines of special machinery, that more space and increased shipping facilities were needed, and they have removed their office and salesroom to Nos. 54-60 North Clinton street. The stock includes Sullivan diamond drills, channeling and gadding machines, coal mining machinery, including Stanley entry drivers, longwall, room and pillar undercutters, Mitchell automatic tipples, etc., and always have on hand duplicate parts and diamond drill supplies, carbon (black diamonds), etc.

The Premier Steel Company, of Indianapolis, Ind., has been placed in the hands of a receiver on application of C. W. Depauw, of New Albany, Ind., president, and the largest stockholder. The receiver is John E. McGettigan, of Indianapolis. The company was organized three years ago and took the mill of the old Indianapolis Rolling Mill Company, where it has built up a large steel plant. Additions to this have been completed very recently. The company made beams and structural work and some rails. Excessive competition is said to be the cause of the present trouble.

The Weir City Zinc Company, manufacturer of the brand of spelter known as the "Cherokee," has been succeeded by the Cherokee Zinc Company, incorporated under the laws of Missouri. The new company will be under the same management and continue the policy of the old company, with same officers and works. The smelters at both Weir City and Pittsburg, Kan., will be directly under the management of Mr. A. B. Cockerill, vice-president, with the same staff of superintendents and working force. The general offices are at the Laclede Building, St. Louis.

A general conference between the largest holders of the stock of the Pennsylvania Steel Company and representatives of shareholders was held in Philadelphia, Pa., on May 5th. The object of the meeting was to devise a plan by which the company could be relieved from its present embarrassment. The feature of the meeting was the harmony which prevailed, there being no difference of opinion among those present. A policy of retrenchment has already been adopted by the officials of the company, the working force have been reduced as well as wages, in some departments. As a result of the meeting a committee will be formed to formulate a plan for presentation to the general stockholders for the company's relief.

The Philadelphia Engineering Works, Limited, have contracted to build a complete new blast furnace plant for the Poughkeepsie Iron Company, at Poughkeepsie, N. Y. The plant will include two hot-blast stoves of the Gordon-Whitwell-Cooper pattern 19×60 ft.; three horizontal blowing engines with Corliss valve gear, the steam cylinders 50×72 in. and the air cylinders 84×72 in.; Stirling water-tube boilers of 1,200 H. P., and all the pumps, pipe, etc., required. The work will require about 1,000,000 fire-brick, which will be supplied by John B. Marie, of Philadelphia, and C. N. Christie, of Poughkeepsie. The furnace is to be ready for use by October.

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.

Oil.

The report of the Bureau of Statistics, Treasury Department, shows for the month of April exports as follows: Crude oil, 5,412,191; naphthas, 193,192; illuminating oils, 45,629,301; lubricating and paraffine oils, 2,265,352; residuum, 90,384; total, 53,590,420 gallons. This is a decrease of 9,261,148 gallons, or 14·7% as compared with April, 1892. For the 10 months of the fiscal year to April 30th, the total exports were 635,806,032 gallons, an increase of 42,646,246 gallons, or 7·2% over the preceding year. In April, New York was the chief exporting port, with Philadelphia second.

ARIZONA.

Maricopa County.

(From our Special Correspondent.)

A mining claim in the Eagle Tail mountains, 90 miles west of Phoenix, was recently purchased for its copper. This week a party of prospectors have returned from the mountains bringing several hundred pounds of rich gold, silver and copper ore, and as the existence of gold was previously unsuspected the purchasers have been more fortunate than they anticipated.

Mohave County.

(From our Special Correspondent.)

At the north end of Aubrey Valley, 30 miles from Peach Springs, rich mineral has been found. The assays taken from the croppings run, it is claimed, from $700 to $1,200 per ton. L. F. Bradshaw, of Creede; Col. S. H. Juelland and E. Kane, of Denver, and J. McMahon, of Pueblo, are the discoverers of this apparently rich find. An abundance of wood and water are found in the vicinity, and work will be commenced at once.

Yavapai County.

(From our Special Correspondent.)

Salt River & Gila Valley Land, Water, Mining and Milling Company, Prescott.—This company has just been formed for the purpose of operating in this territory only. The capital stock is $1,000,000, and all the principal stockholders are: C. H. Gray, president; J. W. Parmelli, of Denver, vice-president; H. Miller, general manager; C. V. Miller, secretary, and H. Story, of San Diego, Cal., attorney.

CALIFORNIA.

Amador County.

(From our Special Correspondent.)

Amador Gold Mining Company, Jackson.—The "Engineering and Mining Journal" has, on more than one occasion, drawn attention to the peculiar methods adopted in putting the property of this corporation on the London market, but the complaint just filed in the Superior Court of California, by William A. Wallace, one of the original and principal stockholders, cast additional light on what can only be considered a series of shady transactions. The Amador mine gave every prospect of being a large and very lucrative property, and Mr. Wallace advanced $120,231, the sum he now sues for, for the purpose of developing the property. A. P. Minear, who has won a somewhat unenviable notoriety in connection with the property, made overtures to the then owners to bond the mine and put it on the London market. He proposed paying $200,000 in cash and giving the original company one-quarter of the stock to be issued by the new company he expected to organize in England. On this basis an agreement was made and the deed to the mine was placed in escrow with Wells, Fargo & Co.'s bank in San Francisco. This action guaranteed to Minear the mine upon carrying out his part of the agreement. In London Minear, through the offices of Charles E. Harrison and A. Basil Cochrane, was enabled to form an English company under the name of the Amador Gold Mining Company, Limited. He then cabled to the son of Mr. Wallace, who was secretary of the American company, stating that the money and stock were ready, and asking that the deed to the mine be taken out of escrow and forwarded to him so that it could be transferred to the English corporation as a receipt for the money and stock. Secretary Wallace, believing Minear's representations, did as required. He gave Wells, Fargo & Co. a receipt for the deed, and also for the $200,000 and the stock as though all had been paid in.

The London company, as a matter of fact, did not pay over the $200,000 in cash for the reason that there existed some incumbrances on the mine amounting, with a mortgage, to about $25,000. Minear secured the stock, however, and negotiating part of it at a high rate of interest, he secured the necessary money to pay off the indebtedness. He failed to make any returns to the American stockholders and W. F. and C. W. Trotter, two stockholders brought suit in the U. S. Circuit Court to set aside the deed conveying the property to the English company, and the two charges in the suit are that the transfer was not ratified by the proper number of California directors, and that it was obtained by fraud. That suit is now pending.

Meantime the suit of Senator Wallace, of Pennsylvania, has been brought to protect his rights. The money he loaned the company is represented by notes he holds, and as they would soon become outlawed he has instituted suit to protect his rights. Whether Wallace will recover anything or not depends entirely upon the decision of the U. S. Circuit Court as to the actual ownership of the mine. Meantime Minear is in London, where he is floating the stock given to him by the English company for the Americans who originally owned the property.

Eldorado County.

Idlewild Gold Mining Company.—There are 26,240 shares of the stock of this corporation seeking an owner, and as they are worth about $67,500 the matter has been carried to the Superior Court. Mrs. A. E. Straut alleges that upon the death of her husband she found a certificate for the above number of shares among his effects. It was indorsed by E. S. Chester, with whom her husband had been engaged in mining enterprises for many years. It is claimed that before his death Mr. Straut stated that Chester was indebted to him for a great deal of money. Just previous to his death he informed his wife that the debt had been canceled and that she would find a settlement among his papers. In making an inventory of her husband's property Mrs. Straut wanted to name the Idlewild certificate, firmly believing that Chester had given it to her husband to cancel his debt. On the advice of her attorney, however, she surrendered it to the attorneys for the Chester estate, who had made a demand for it. Later on she discovered additional proof that the certificate really belonged to her husband's estate, hence the appeal to the court.

Nevada County.

Central North Star Mining Company. This company held its annual meeting in Grass Valley on May 2d. The following board of directors was elected: Louis Parrott and J. R. K. Nuttall, of San Francisco; Joseph Weissbein, Jacob Weissbein and James Watt, of Grass Valley. The board afterward organized by electing J. R. K. Nuttall, president; James Watt, vice-president; Jacob Weissbein, secretary; Weissbein Brothers & Co., treasurer, and James Bennallack, superintendent. Work is being actively pushed at the mine under the supervision of James Bennallack, and the prospects are encouraging. The company is sinking a new double compartment incline shaft and moving the machinery from the old perpendicular shaft to the new incline shaft.

(From our Special Correspondent.)

Champion Mining Company, Grass Valley.—New hoisting and pumping works are to be put in at the mine belonging to this company. It will be one of the heaviest plants in the county, and will enable the mine to be worked to a depth of over 3,000 ft.

Idaho Gold Mining Company, Grass Valley.—Previous to the dissolution of this company and the sale of the mine and property to the Maryland company, the 274th dividend of $6 per share, aggregating $18,600, was declared. The Maryland mine was located in 1864 and is the second extension of the old Eureka lode. The claim is 2,000 ft. long and several shafts have been sunk. The main shaft is down 325 ft., from which several drifts of crosscuts have been run. The Idaho levels, run to the boundary line, have been quite rich, the 1,300, 1,400, 1,500 and 1,600 showing good ore, but giving every evidence of pitching into Maryland ground.

Riverside County.

(From our Special Correspondent.)

Adyar Gold Mine, Colton.—A Pasadena syndicate has purchased this property, which is located 15 miles from Colton, for $47,500.

Yuba County.

Excelsior Mining Company.—This company has ceased hydraulic operations owing to the giving away of the restraining dams.

COLORADO.

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

A Rock Springs, Wyo., company, with A. Kendall at its head, is about to commence operations in hydraulicking placer ground just over the Colorado line. On the 1,000 acres of land belonging to the company 100 shafts have been sunk to bedrock, showing the value of gravel to vary from 7c. to $1 per yard, with an average, it is said, of 15c. There is said to be an abundance of water, good fuel and good dumping facilities. Considerable adjacent ground has been taken up, a part of which has been examined in the interest of Californians. There is no question of debris here, as the dumping ground is valueless.

El Paso County.

Anaconda Mining Company.—The returns of the recent shipment of ore to Denver smelters have been received. Twenty-two tons of high and low grade ore was sent. The high grade ran $430 to the ton, and the low grade $130. These are the best results from Anaconda ore which have yet been had.

Dearborn.—The Denver "Republican" says that representatives of the French syndicate that built the Rosebud mill at Cripple Creek have purchased from Messrs. Walflev and Welsh the Dearborn mine, also at Cripple Creek, for $40,000 cash.

(From our Special Correspondent.)

Jefferson Mining Company.—At the annual meeting of this company in Chicago last week, the following changes were made in the election of officers: Chas. G. Haskin, of the Kirk Soap Company, was

elected president and treasurer; Walter Ioor was elected secretary. The directors for the coming year will be: John S. Reynolds, F. C. N. Robertson, James W. Nye, B. H. Conklin, G. B. Mechem, all of Chicago. The new officers propose working the property of the company with renewed vigor. A larger force of men will soon be placed at the mines, and it is expected will commence shipments soon after. The company owns eight claims on Gold Hill, situated between the Anaconda and Chicago properties, two of which, the Game Cock and Mattie L., are now being worked. The ore averages $20 per ton gold. The Santa Fe Railroad runs to the base of the mountain, affording easy transportation of ore. The capital is $1,100,000.

Gunnison County.

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

Cleopatra Silver Mining Company.—This property was opened up in April, 1891. It has since paid 10 dividends of 15c. per share, making a total of $37,500 paid to date. Commencing with August 1st, 1892, a dividend has been paid regularly on the first day of each month, the last one being on May 1st. This property is situated near Pitkin, Gunnison County, Colo. The shaft is now down 175 ft., and the dividends have been paid merely from development work, no considerable amount of stoping having been done as yet. The company claims that there is enough ore in sight for two years. The ore shipped yields $128 silver, 0.2 oz. gold and 8% lead. The capital stock of the company is $2,500,000 in 25,000 shares, par value, $100 each. The officers are: Frank Drake, president; Henry Knight, vice-president; Frank W. Ferry, secretary; John Cudahy, treasurer. The office is in the Brother Jonathan Building, Chicago.

Lake County.

(From our Special Correspondent.)

Bohn.—This has developed into a first-class mine, and active work is being carried on throughout the property. The drifts were run out from the lower levels. The main drift was put in 200 ft. and an upraise made which has encountered a good ore body assaying 25% lead and 60 oz. silver per ton. Shipments are promised for the near future.

Fanny Rawlings.—The markings show plenty of ore, and as soon as the roads to that property become passable shipments will be large and steady.

Grey Eagle.—Working on their drift to connect with the Penrose is still going on. During last month the Grey Eagle shipped 1,100 tons of carbonate and 600 tons or iron ore. The entire workings look most encouraging.

Huckleberry.—The strike has improved steadily with development, and now all attention is being given to the construction of the stamp mill, which is already well under way. A first-class plant of machinery has been ordered, and in a short time the mill will be in full blast.

Jaybird.—The tunnel is being pushed forward rapidly. It is now in 600 ft. and has opened up a body of $3 gold ore which it is believed will improve with development. There are now 2,200 ft. of workings in the Jaybird.

Mahala.—An excellent ore chute is being worked which seems to be constantly improving. Shipments are regular and average 150 tons daily of sulphide and carbonate ore. One hundred gallons of water per minute are being easily handled.

Mike and Star.—Shipments are small at present on account of the very bad condition of the roads. In the property just as much work as usual is being done, and under favorable conditions 40 tons daily, mainly iron sulphides, are mined.

Silver Standard Mining Company.—The directors of this new company held their first meeting May 6th, and elected officers as follows: C. W. Priddy, president; J. A. Ewing, vice-president; P. W. Breene, secretary and treasurer. This company's property is located in Iowa Gulch and comprises a group of claims embracing 56 acres of practically virgin ground.

Sixth Street.—The several drifts are being pushed along rapidly and the main one is now in good contact matter with a prospect of very soon breaking with a good ore body.

Union Mining and Leasing Company.—Work in earnest is about ready to begin on this company's properties. At the El Paso, which is the drainage shaft of the Consolidation, machinery is in place, and when the big pumps are set to work it is expected that it will not take long to rid the mine of the 200 ft. of water now in the shaft.

Venture.—It is learned that active operations are soon to be commenced in this mine, the workings of which were drowned out when the pumps were taken out some months ago. At that time a fine streak of mineral, assaying quite high in silver, was disclosed, and now a first-class plant is to be placed on the property and the workings are to be thoroughly explored.

Ouray County.

(Specially reported for the Engineering and Mining Journal.)

Trust Ruby.—This property, at Mount Sneffles, consists of the Trust Ruby, Yellowstone, Verdi, Smuggler, Circassian Girl and Onna claims. At present work is confined to the Circassian Girl and Yellowstone properties. On the former 760 ft. of work has been done on the vein. Large quantities of ore have been stoped, but the reserves are still large. On the Yellowstone 500 ft. of work has been done on the vein, during which 600 to 700 tons of ore was stoped, leaving considerable in sight. On the original Trust Ruby the shaft has been sunk 300 ft., and 1,000 ft. of drifting done on the vein, which is from 1 to 6 ft. wide of good grade Ruby and brittle silver ore and free gold ore. As handling water has been a source of great expense it has been determined to tap the vein by a tunnel from the Circassian Girl. The ore from the properties averages $20 silver and $10 gold per ton. This is concentrated at the rate of 10 to 15 tons into one on 1 to 20-stamp mill with Frue vanner, and hydraulic classifiers. During the summer the mill is driven by a 6-ft. Pelton wheel and in winter by steam. At present the mill is being overhauled by Mr. F. O. Pelham, late of the Lustre Mining Company, of Durango, Mex. Mr. F. S. Schurman is superintendent.

Pitkin County.

Little Annie Mining Company.—At the annual meeting of this company, May 3d, in Aspen, 1,450,000 shares of stock represented. The manager's report was received and approved. The new directors elected are: E. W. Young, W. S. Copeland, John W. Atkinson, George B. Sherman and B. Clark Wheeler. After the meeting the new board met and organized by electing B. Clark Wheeler, president and manager; J. W. Atkinson, vice-president, and E. W. Young, secretary and treasurer.

St. Joe & Mineral Farm Consolidated Mining Company.—The annual stockholders' meeting of this company was held in Aspen, May 3d. Manager Wheeler's annual report was approved. The new elected directors are: B. Clark Wheeler, W. E. Newberry, W. W. Cooley, E. W. Young and George B. Sherman. There were represented at the meeting 1,219,931 shares.

San Miguel County.

Shipments of ore and concentrates from Telluride for the week ending May 5th amounted to 253 tons. Total shipments since January 1st, 6,562 tons.

Sierra County.

Opportunity.—Work has been commenced on the shaft at this mine, at Hillsborough, and it will be sunk to the depth of 400 ft. The mine is now producing 30 tons of ore a day.

FLORIDA.

Phosphates.

Florida Phosphate Company.—A new plant, consisting of log washers and cylinder driers is being erected for this company at Hernando.

Hamburg Phosphate Company.—This company is putting in log washers and cylinder driers at its works near Inverness.

International Phosphate Company.—At a meeting held in Ocala recently, this company was reorganized, the following officers being elected: Gordon R. Rogers, president; W. Henderson, vice-president; L. D. Browne, secretary; and directors, Messrs. Rogers, Henderson, Hon. C. G. Butt, Alexander Radcliffe and H. F. Martyn. The company expects to resume mining operations at an early date.

Ocala & Blue River Phosphate Company.—Mr. T. D. Cummer & Son Company, of Cleveland, O., has just completed a dry-process plant at this company's phosphate mine near Luraville.

GEORGIA.

Calhoun County.

Republic Mining Company.—This company is still working its bauxite mine at Hermitage and has so far shipped about 1,300 tons, a large part going to Lockport, N. Y.

Southern Bauxite Mining Company.—Work at this company's bauxite mine at Piedmont is suspended for the present; about 4,000 tons have been taken out.

Lumpkin County.

Chestatee.—Some 45 men are now at work putting in machinery at this mine for the purpose of developing it on a large scale.

Gold Mountain Mining Company.—This company now has 10 stamps at work at the Mary Henry mine, and is working the mine to its full capacity.

Ivey.—The Dahlonega "Signal" reports the finding on this property recently of nuggets of gold weighing 8 dwts. and 7 dwts. 16 grs. respectively.

Towns County.

(From an Occasional Correspondent.)

Lithia.—Charles Heaton, president, of the Southern Emery Wheel Company, of Tallapoosa, Ga., while on a tour through the Blue Ridge mountains, has discovered a spring of lithia water that is far stronger than any other known spring of the kind. It is believed to contain only water, carbon and lithium. Ordinary lithia water only carries about one grain of lithium in combination to the gallon. The new discovered water, it is said, holds 450 grains of carbonate of lithium to a gallon.

IDAHO.

Shoshone County.

The following information is from the columns of the Wallace "Miner": The Poorman mine is working steadily with 165 men. An average of nearly two cars of ore are shipped daily. The large vein discovered in the breast of the west drift of the Tiger mine has continued for over 100 ft. in length, and the concentrates as a rule have run somewhat higher in lead for the past few weeks.

The Frisco mine made shipments of concentrates last month amounting to 594 tons. The new Frue vanners for the concentrators have come and are now in operation. A new 6-ft. Pelton water wheel is being added to the plant, as the power now in use is insufficient. The men at work in the Bunker Hill & Sullivan, numbering between 40 and 50, are all contracting. About 18 men are filling in the Williams stope, and this work is nearly completed. Others are sinking a winze from the Reed tunnel level. A small force are doing necessary work on the Clement tunnel; 350 tons of ore were shipped last month from the Black Bear; 65 men are employed, not including the contractors on the lower tunnel, which has now reached a length of 225 ft.

The Nellie Woods and Alma claims, now operated by the Pandora Mining Company under bond, are employing a force of 30 men. At a depth of 200 ft., where a level has been driven a distance of 700 ft., the ore is free milling. Ten stamps are employed.

Further developments on the Standard are very encouraging to its owners, and extensive and permanent improvements have been decided upon. The new tunnel recently commenced, 220 ft. below the main tunnel, just below the wagon road leading to the Mammoth, is now in a distance of over 200 ft., and is being carried forward at the rate of 5 ft. a day. There is from 2 to 4 ft. of good ore in the breast of the drift.

Morning Mining Company.—The work is still being prosecuted on the lower tunnel. They have drifted 65 ft. westerly from the point of intersection. In that distance the vein has been variable in both quantity and quality, but has preserved a good average throughout. The breast of the tunnel is still several hundred feet from the large ore bodies encountered in the upper levels. In a short time it will be necessary to make connection between levels No. 4 and No. 3 in order to insure ventilation and incidentally to explore the vein.

Nellie.—Work on this property, it is said, will soon be resumed. Colonel Muncie is not in the new deal.

ILLINOIS.

Bureau County.

Maplewood Coal Company.—This company has been organized with $100,000 capital stock. Incorporators: A. Giger, McW. Jones and W. L. Pierce; office at Peoria.

Putnam Coal Company.—This company has been organized with $5,000 capital stock; office at Peoria. The incorporators are A. T. McMaster, H. Putnam and M. V. Putnam.

MICHIGAN.

The legislature has voted to continue the State Geological Survey.

Copper.

Atlantic Mining Company.—The April output reached 229 tons.

Calumet & Hecla Mining Company.—Sinking the Red Jacket shaft was resumed on May 1st, according to the "Native Copper Times." This shaft is down a little over 3,000 ft., with about 330 ft. deeper to go to reach the lode; 160 ft. below the present bottom another crosscut will be driven, and that will be the last until the lode is reached and passed by the shaft. The Calumet No. 4 crosscut is now in the Osceola amygdaloid about 40 ft., and the foot wall is thought to be near. Some of the ground is rich with mass and barrel, as well as stamp copper.

Quincy Mining Company.—The mine is said to be looking well, especially in the Pewabic end. On account of several stoppages at the mill, and the copper being held in reserve for the new smelting works, the product, 700 tons, reported for April was not as large as expected. Smelting mines will be built for the company by Mr. J. R. Cooper and associates, who will run them until May 1st, 1899, when the plant will be turned over to the company.

Iron—Gogebic Range.

Colby Syndicate Mines.—The mines controlled by this syndicate, the Colby, Tilden and Palms, closed down on May 6th, the large stocks of ore and limited sales being assigned as the cause. Up to the present, the only important sale made by this company was from the Aurora mine. Notwithstanding the cessation of operations, the pumps will be kept going and the mines held in readiness for resumption of work whenever sales increase. The Tilden and Colby mines together produced 304,241 tons last season. The Palms is credited with 102,382 tons, and the Aurora 319,000.

Iron—Marquette Range.

Jackson Mine.—Work has been stopped with the exception of one stope, the latter being a new find that was made some time since with the diamond drill. About 40 men will be thrown out of work. This mine is the oldest on this range, and was the first iron ore mine found in Michigan. It has never been a large producer, and its ore bodies have

been irregular in size, conforming to the accompanying formation, which is very much disturbed, says "Iron Ore." Both hard and soft ores have been mined, these often coming from the same pit. But a small force of men have been worked here for some years past. There is considerable ore in sight but the company believes there is no use raising it unless a better price than now offered can be had.

Michigan Mine.—This mine has been unwatered and preparations for mining are under way. The mine cannot produce more than 15,000 tons of ore this year, it is stated.

Iron—Menominee Range.

Chapin Iron Company.—This company recently broke its record by hoisting 3,200 tons of ore in 24 hours.

Hamilton.—During April, the drift being run to connect shafts 1 and 2, was driven 116 ft. The drift is now about 200 ft. long with no indications of water.

Norrie Iron Company.—The working force has been reduced one-half owing to the low price of ore, and it is said that other mines must follow. The production last year was 985,216 tons.

MINNESOTA.

At its last session the State Legislature passed an Act (Chapter 37—H. F., 620), which provides that the owners of a half-interest in a mine may file a bond in the office of the clerk of court, and proceed to develop the same. It also provides that the other owners may have access to the property to measure and verify the accounts and protect the interests of those not operating against liens and judgments.

Iron—Mesaba Range.

Alabama Mining Company.—This company is now prospecting with a diamond drill.

Biwabik Iron Company.—There are now four steam shovels at work in the main cut, and one at the east forty.

Rouchleau-Ray Iron and Land Company.—This company has leased a quarter-section to the Norman Iron Company. The lease runs for 20 years and calls for an output of 30,000 tons the first year and 50,000 tons annually thereafter, at a royalty of 25c. per ton.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

Joplin, May 8.

Saturday evening closed the dullest week of the year in the mines; there was almost a continuous rainstorm, and small operators were drowned out. The zinc ore market was weak, the average being $20.50 per ton. Lead ore declined; the market closed at $21.50 per thousand. Following are the sales from the different camps: Joplin mines,1,124,470 lbs. zinc ore and 176,970 lead, value $15,450; Webb City mines, 399,730 lbs. zinc ore and 19,500 lead, value $4,508; Carterville mines, 2,361,210 lbs. zinc ore and 75,470 lead, value $25,936; Zincite mines, 85,320 lbs. zinc ore and 4,840 lead, value $1,000; Oronoco mines, 40,770 lbs. zinc ore, 68,620 lead; Carthage mines, 32,190 lbs. zinc ore, value $352; Wentworth mines, 43,540 lbs. zinc ore, value $457; Galena, Kan., mines, 988,730 lbs. zinc ore and 220,000 lead, value $13,632; District's total value, $63,091.

Blandville iMning and Smelting Company.—This company pumped the water from its mines last week and got into the ground. It commenced cutting on lead and zinc ore at a depth of 60 ft. and started the new ore dressing plant. The rough ore and rock when hoisted from the shafts is run on elevated tramways and dumped over screens on a platform where it is washed, and the large and small bowlders of barren rock ore culled out. The wash dirt and rock containing ore is dropped through mill holes and falls into large tram cars which are hauled up an incline and dumped on the crusher floor of the mill. From there it passes through the crusher rolls and upon the jigs. The mill is supplied with two engines, one of which runs the entire mill and the other furnishes power by a rope transmission for pumping and hoisting from the three shafts. This work is all on new ground, and so far as developed is showing up good deposits of lead and zinc ore.

MONTANA.

Jefferson County.

Montana Mineral Land Development Company.—At the Eva May group things are progressing well. Machinery will be put in place as soon as a double compartment shaft is raised from the breast of the long tunnel to the surface, a distance of 160 ft. Then the company will sink a perpendicular shaft 300 ft. deeper from the tunnel, and drift at every 50 ft..

Lewis and Clarke County.

Golden Crown Mining Company.—This company is rapidly developing its property, located six miles from Helena. In driving the 200-ft. level a body of high grade, free milling gold ore was encountered 56 ft. from the shaft. The streak is 3 ft. wide and the gold is coarse and free. Pay ore exists in the vein from the surface, but the ore in this body is of the highest grade yet found. As soon as the developments warrant, the company will erect a mill for the reduction of its ore.

Meagher County.

Benton Group.—The last carload of ore shipped from this mine assayed $600 per ton. The car, which contained 18 tons, yielded a total of $10,800.

Broadwater Group.—This property near Neihart has been sold to W. J. Clark and a syndicate of Eastern capitalists. At present the tunnel is in 675 ft., and there is ore exposed almost the entire distance. When 125 ft. more are drifted an upraise will be made, connecting with the Bell shaft. They are now breaking ground at the rate of from 5 to 7 ft. per day, and with this speed it will take them in the neighborhood of 40 days to make the connection. This property has been idle for a long time, no work amounting to anything having been done for a year or two.

Queen of the Hills.—This company has about 20 men on the payroll, and the property is now in a flourishing condition. The contractors are in on tunnel No. 1 nearly 1,100 ft., and the crosscut for the O'Brien vein is now in about 300 ft. They expect to encounter the O'Brien in a short time.

Missoula County.

Camas Prairie.—The upper part of the Camas Prairie Valley, in the vicinity of Copper Cliff, is, according to the Helena "Independent," one of the most promising mineral sections of the State. A number of claims have been located, but very little has been done on any of them in the way of development work. The claim known as the Copper Cliff has received the most work. It is owned by Messrs. Reely, Shippler & Adams, who have been working it continuously during the past six months. Commencing about 200 ft. from the base of the precipice they drove a tunnel through the soft ground until the hard reef was struck. In doing this they cut two veins from 12 to 14 ft. wide, one about 40 ft. from the mouth of the tunnel and the other something over 100 ft. The first vein encountered showed considerable native copper, and the second was copper pyrites and black copper sulphides, assays of which give from 11 to 50%, copper and from $25 to $40 gold. Some 7 or 8 carloads of high grade copper ore have already been extracted from the second vein, a portion of which is now being hauled to the railroad and will be shipped to the smelters to be tested. On the south side of Camas Prairie work is progressing as usual on the Chareoal and Adaline, and high grade ore is being shipped to the smelter. At the old camp of Wallace tunnels are being driven on the Sleeping Child and Hidden Treasure, each of which is showing up well.

Libby Smelter.—It is stated that the contract for a large smelter at Libby has been awarded to the Gillette-Herzog Manufacturing Company, of Minneapolis. The entire plant is to cost $250,000.

Spring Gulch.—Here the Keystone & King company are working a force of men on both the Keystone and King mines. The work on the King is largely development work, prosecuted with a view to erecting a 50-ton concentrator in the spring. Some shipping ore, however, is being extracted. The Keystone is producing considerable good shipping ore, about 40 tons now being on the dump. The last two carloads of ore shipped to the United Smelting company at East Helena, gave very satisfactory returns. O. Jeldness has been working all winter on the Little Anaconda under lease, and now has $8,000 worth of ore on the dump, which will be shipped as soon as the trail and road is open.

Park County.

Rocky Fork Coal Company.—The annual statement of the financial condition of this company for the year 1892 is as follows: Capital stock, $2,000,000; indebtedness, $38,262.40, of which amount $25,000 has since been paid. The balance of $13,262.40 is due on notes payable, of which $8,640 is for coal lands purchased.

Silver Bow County.

Butte & Boston Mining Company.—Owing to a fire in the Silver Bow No. 2 mine of this company nine men lost their lives April 21st. The fire was finally extinguished and the bodies eventually recovered, but not without severe work and the display of considerable valor by the rescuers.

Moulton Mining Company.—A strike has been made on the 300-ft. level in which a 10-ft. vein of ore averaging 30 oz. was opened up.

Parrot Smelter.—Strong efforts are being made to induce the Parrot Mining Company to remove its smelter to a site on the Big Hole River, but up to the present time nothing has been decided upon.

Silver Bow Mine.—The fire in this property was extinguished early on the morning of April 22d; 800 gallons of water a minute were poured into the mine, and the water has filled it to the 600-ft. level. The bodies of five victims of the disaster were recovered. The bodies were found on the 400-ft. level, showing that the men had come up on the level from the place where the fire originated and were there suffocated by the smoke. There are four bodies yet in the mine.

NEVADA.

Eureka County.

Eureka & Palisade Railroad Company.—Eureka received for transportation to Salt Lake City and Vallejo Junction, Cal., 60 tons of lead jiggings and 1,238 tons of ore from the following mines: From Eureka District, from the Diamond mine, 614 tons; Eureka Consolidated mine, 245 tons; Richmond mine, 172 tons; Jackson mine, 120 tons; Bullwhacker mine, 46 tons; Phenix mine, 30 tons, and Silver Lick mine, 4 tons; from the Magnolia mine, Morey, Nye County, 7 tons. In addition to the foregoing the Eureka Consolidated Mining Company shipped 60 tons of lead jiggings.

(From our Special Correspondent.)

Cortez Mines, Cortez.—Are doing nothing actively beyond running a machine drill, as reported in the "Engineering and Mining Journal" some time ago. The developments in the new tunnel are adding considerably to the value of the property.

Diamond Mine, Eureka.—A new and important strike is reported upon good authority on the 400-ft. level at a vertical depth of about 1,100 ft., and distant in a southerly direction about 225 ft. from the main shaft. The discovery was unexpectedly made while drifting for a fissure farther south on the 400-ft. level. The ore is somewhat different from that usually mined in the Diamond, being of an antimonial character and more than ordinarily rich. Assays run as high as 600 oz. silver to the ton, with a large percentage of lead and more or less gold.

Ethel Mine, Eureka.—This mine is situated on the northeastern slope of Hoosaac Mountain, near the old Hoosaac mine—a locality that has received but very little attention for several years. There are about 20 tons of rich argentiferous lead ore on the dump that will yield about 200 oz. to the ton.

Hamburg Mining Company, Eureka.—This company contemplates some repairs and prospecting from the 600-ft. level of the Hamburg mine, which has been comparatively idle for several years. The tributers in the mine have commenced shipping the ore they have accumulated during the stormy weather. They have broken down and sacked upward of 300 tons ready to ship.

Jackson Mining Company.—Eureka, having levied an assessment for that purpose, will shortly commence prospecting. No particulars are known here. The tributers in the mine are working as usual.

Queen Mine, Eureka District.—The lessees are engaged in driving a tunnel, to be 244 ft. in length, to tap, at a depth of 230 ft., a shaft sunk in early days. It is expected that the ore will yield an average of 54% lead and 52 oz. silver per ton.

Nye County.

(From our Special Correspondent.)

Magnolia Mine, Morey.—An important development was made in the Keyser tunnel, at a vertical depth of 535 ft. A vein was cut, which averaged 18 in. in thickness, of ore that assays 500 oz. per ton.

Reliable statements are at hand of important gold mining developments in the southeastern part of this county. Veins of free gold bearing quartz varying from 2 to 20 ft. in thickness are coming under the notice of mining men. Although the average grade of the ore is too low for a section of country almost devoid of working facilities, rich chutes and pockets are being encountered and the average grade of the ore is improving under very slow development. The lowest depth yet attained in either of the mines in question is 97 ft. It is estimated that there are from 1,500 to 1,600 tons of ore on the dumps that will mill from $5 to $30 per ton. Five samples selected from rock taken from various places in open cuts, tunnels and inclines were assayed and showed the following values respectively: $434, $265, $2,170, $241 and $199 per ton. The owner has no milling facilities, but when he runs short of supplies pounds up some of his selected samples in a mortar and runs the gold into a bar.

Storey County—Comstock Lode.

Crown Point Mining Company.—The latest weekly official letter says: The north drift, from the west crosscut from the north raise, on the 400 level, is still advancing through the old stope, some of the fillings of which is saved. We are now working north and south from the end of the west crosscut, on the 400 level, 150 ft. south of the shaft, on streaks of quartz containing bunches of ore. Have completed grading and repairing the south drift on the 1,100 level, and started a raise from the south end of it, which is now up 10 ft.; the top shows a streak of quartz from 2 to 3 ft. in width, containing bunches of ore.

Justice Mining Company.—At the annual meeting of this company 80,194 shares were represented, and the following officers elected: Thomas Anderson, president; H. Zadig, vice-president, and H. Zadig, P. Amfraux, S. Jacobs and E. P. Barrett, directors. R. E. Kelly was re-elected secretary; Charles Lyons, superintendent, and the Nevada Bank, treasurer. During the fiscal year the company extracted and shipped to the Washoe mill for reduction 767 tons of ore, yielding in bullion $12,053.49 or 80% of the valuation by battery sample. From this bullion a net or coin return of $9,437.56 was obtained. This does not include the present run, which will amount to about 400 tons.

(From our Special Correspondent.)

The following is the weekly tabulated statement of the ore hoisted from Comstock mines and milled,

with the ore and battery assays, bullion shipments, etc.:

Mines.	Tons H'st'd.	Av. sam'le Assay	Tons Mil'd.	Av. Bat'ry Assay.	Bullion for Week.	Bullion Shipped.
Belcher....	73	.....	.....	... ..	.....	.....
C. C. & Va.	600	$31.34	655	$27 03	.....	[1]$12,309.86
Justice....	70	....	165	18.18	.....	.....
Kentuck..	21	34 00	.....	...	.....	.....
Potosi.....	498	29 32	525	25.12	.....	[2]390 lb.
Savage....	[3]85	21.00	...	... ...	... ...	....

[1] Also $58,494.30 cash on hand. [2] Crude ore. [3] Cars.

White Pine County.

(From our Special Correspondent.)

Last fall an old abandoned claim situated about eight miles southeast of the gold camp was relocated by an old resident of the latter and some Eureka parties. The mine is completely hidden in a thickly timbered section; otherwise it would be surprising that it had so long escaped observation. No developments have been made except a few holes blasted in the croppings. The claim was relocated just previous to the first snowfall of the winter, and no work has been done upon it since, but the croppings indicate that the vein is rich and strong. Several samples of ore from the croppings have been assayed, none of which show less than 300 oz. of silver to the ton and 17% of copper.

Valuable copper veins and nitro beds have been discovered in the district, but the developments made upon them are barely worth mentioning. The district, which was discovered early in 1869, was abandoned in the heat of the Eberhardt and Treasure Hill excitement, and very little attention has been paid to it since. The reports that are now coming from there are attracting the attention of Eureka men who are preparing to go there and prospect.

Bay State Mine, Newark.—An option has been given to a party of men to jig the ore now broken in the mine, and a dump of low grade ore, the accumulation of several years, amounting in all to about 60,000 tons. Jigs are being set up for the purpose.

Cornell Mine, Hamilton.—Is showing a great improvement, and there is a large quantity of heavy lead ore in sight.

Ruby Mountain District.—A tunnel run for the development of the Lone Star mine, at Bald Mountain, in the Pancake range, has tapped a vein lying between walls of granite and porphyry. The vein material is like that of Grass Valley, California, containing free gold and iron pyrites. No assays have yet been made. The district has received but very little attention since 1880, notwithstanding that it has a great many encouraging features. A portion of it is prolific in gold quartz veins, and in this locality are two gulches with about 2½ miles of placers. Very little had been done in them beyond experimental work until last December, but during the winter a few miners were engaged sinking down to and drifting on the bedrock who have made good wages.

NEW JERSEY.

Morris County.

Andover Iron Company.—According to the Dover "Iron Era" this company has begun the erection of a new stack 115 ft. in height. Less ore is now being shipped owing to the blowing out of the furnace at Phillipsburg for repairs.

Hurd Mine.—The report that this iron mine was to be closed is contradicted. Shipments will continue to be made as usual to the Glendon furnace, which takes all the ore.

Lower Hibernia.—Work has begun on the erection of the new concentrating plant by the builders, the Becket Foundry & Machine Company, of Arlington, N. J.

OHIO.

Belmont County.

Heatington Coal Company.—This company, one of the largest operators in the Ohio Valley, has signed the miners' scale.

OREGON.

Jackson County.

(From our Special Correspondent.)

Ashland Mine, Ashland.—A gold brick weighing 437 oz., and worth $6,500, is the result of the April run of the 5-stamp mill on ore from this mine.

PENNSYLVANIA.

Anthracite Coal.

Philadelphia & Reading Coal and Iron Company.—This company is developing a tract of coal-land in Reilly Township. A drift has been driven a considerable distance near the School row to cut the basin of the Primrose vein. The vein was cut at a distance of about 200 yds. from the mouth of the slope. According to a press dispatch, the vein has been partially stripped and reveals a good quantity of coal. The coal will be carried in cars to the Otto breaker by means of a railroad around the base of the mountain at that point. The road will be nearly a mile long. It is said the basin is very extensive.

(From our Special Correspondent.)

Lehigh & Wilkes-Barre Coal Company.—The coal washing suit of C. B. Wagner vs. this company, which has been pending for the past three years, has just been decided. The plaintiff in this case alleged that the coal dirt from the breakers and mines of the company near Audenreid had been carried by the waters of the Catawissa Creek into the plaintiff's powder mill dam at Braudonville, thereby destroying the water power, for which he claimed damages in the sum of $10,000. The arbitrators filed their verdict in favor of the coal company, the water power having been insufficient to run the mill, and it not having been proved that there was any responsibility on the part of the defendant company for the coal dirt which had found its way into plaintiff's dam. Had this suit been sustained, several similar suits would have been immediately brought by other parties against the Lehigh & Wilkes-Barre Coal Company, the Lehigh Valley Coal Company and C. M. Dodson & Co.

SOUTH DAKOTA.

Custer County.

Custer Peak District.—Running parallel to the veins discovered in the Merritt group of mines, is situated what is known as the Amazon lode, in which the vein is exposed by an extensive open cut showing it to be 50 ft. between walls. A shaft which is being sunk on the vein is now 15 ft. down. A recent discovery, 5,000 ft. south of the Amazon shows the vein to be continuous, and of the same grade at the surface. In the northern portion of the district good work is being done on the St. John mine, the owners of which have erected a two-stamp sampling mill at the hoisting works for the purpose of making mill tests, which have been very satisfactory, says the "Black Hills Times." The St. John vein parallels the other veins of the district and is about 1,500 ft. east of the Amazon and has several groups of locations along its strike, including the General Weaver lode, which adjoins the St. John on the northwest; also the Metallic Wealth lode, situated about 1,500 ft. southeast.

Interocean Group.—Development work on this property is now being pushed by the owners. The shaft is now over 60 ft. deep all in ore. Owing to the delay in getting the new patent cams it has been impossible to start up the mill.

Republic Group.—In the 60-ft. shaft a 4-ft. vein of ore has been uncovered, assaying well in gold. In another shaft 35 ft. deep a vein of decomposed ore was struck, assays of which give returns of $12 to $30 in gold and silver.

Lawrence County.

Golden Reward Mining Company.—This company has purchased a claim at Ruby Basin belonging to the Stewart Mining Company. The purchase price was $45,000. The ore assays about the same as that of the Golden Reward's contiguous property—$20 to $25 per ton. Considerable of it is silver bearing, and not adapted to the chlorination process.

TENNESSEE.

White County.

Bon Air Coal Company.—This company's shaft on the Eastland tract has struck two veins of coal respectively 4 ft. and 5 ft. in thickness. Surveys are in progress for the extension of a branch of the Nashville, Chattanooga & St. Louis Railroad to the mine.

TEXAS.

El Paso County.

El Paso Marble.—Steps are being taken to work valuable deposits of marble near El Paso. It is said that specimens from the quarry have shown very fine polish and variegated colors. The leading owners of the property are: W. C. Rider, O. W. Godding and J. M. Hamilton.

VIRGINIA.

Pocahontas Coal Company.—At the annual meeting in Roanoke, Va., May 3d, the following officers were elected: President, D. H. Matson; secretary and treasurer, C. B. Bell; general agent, H. N. Claxton. Directors, F. J. Kimball, Wm. C. Bullitt, Jos. H. Sands, Jos. I. Doran, Henry Fairfax, H. S. Trout and J. Allen Watts.

WASHINGTON.

King County.

Highlander.—About 10 men are now engaged drifting and taking out ore. Vein No. 1 is 2 ft. wide and runs 75 oz. per ton. The second lead, about 30 ft. deeper in the tunnel, has 3 ft. of 40 oz. ore and 1 ft. of high grade ore.

Lady of the Lake.—The long tunnel from the shores of Lake Kootenai is now in about 200 ft. It is expected that the tunnel will eventually be a mile in length, but the three veins of the Highlander will be cut within 2,500 ft.

Lincoln County.

Egypt.—The owners have tunneled in 53 ft., crosscut the ledge and sunk a winze 10 ft. in the tunnel, giving a depth of 63 ft. from the surface. The ledge is 12 ft. 6 in. wide between well defined walls of granite. There are numerous stringers leading in which have the appearance of coming together. Picked samples of the Galena have assayed 36 oz. silver and $1.20 in gold, although the average so far is considerably less.

Okanogan County.

First Thought Mine.—This mine is shipping considerable ore. The mill is running steadily.

Fourth of July Mine.—Work on this mine was begun May 1st.

Stevens County.

Le Roi Mining Company.—Negotiations are still pending between this company and the Pyritic Smelting Company regarding the erection of a smelter at or near the mine of the company. The question involved is not as to whether it shall be built or not, but as to where it shall be located. The "Northwest Mining Review" advises the city of Northport to secure the smelter by a bonus.

Nelson & Fort Sheppard Railroad.—The contract to built this road has been let to Mr. Peter Larson, of Helena, Mont. The length of the road is about 60 miles and its average estimated cost about $12,500 per mile. The road is a branch of the Spokane & Northern, and will traverse the east side of Toad Mountain, following the Salmon River to Nelson, B. C. It will open up a rich mining country.

WYOMING.

The following statistics of the coal production of Wyoming are taken from the advance sheets of State Mine Inspector D. G. Thomas' report. The report shows an increase in the number of mines and in the tonnage output per miner. The following table shows the output by counties in short tons and the number of employees:

	1891. Tons.	1891. Men.	1892. Tons.	1892. Men.
Sweetwater.	989,082	1,565	1,238,906	1,555
Carbon.	364,624	779	444,767	542
Uintah.	334,181	578	328,356	531
Weston.	295,660	397	366,944	405
Converse.	48,023	98	29,137	105
Total.	2,011,542	3,417	2,408,...	3,142

The values at the mine were $3,672,448 in 1891 and $4,214,288 in 1892. The product does not include the small mines; only those coming under the requirements of the State law.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

Slocan.

Silent Friend.—A half interest in this property, which adjoins the Blue Bird, was sold recently to A. N. Moore, of Spokane Falls. The vein is said to be 42 in. wide of high grade galena, assaying 160 to 180 oz. per ton. The Montezuma group has been bonded for $40,000 to Spokane parties. A large vein was here exposed in the development work. The Rico is now being worked by Spokane capitalists, and is looking well, as is the Blue Bird. The Freddie Lee, which belongs to James F. Wardner, is able to produce 25 tons daily.

BRITISH GUIANA.

Gold.

The aggregate production of gold in the colony for March, as reported to the Department of Mines, was 12,509 oz., an increase of 557 oz. over March, 1892. For the three months ending March 31st the output was 24,470 oz., an increase of 2,700 oz. over the same period last year. The chief producing districts this year were the Conawarook, 5,315 oz.; Cuyuni, 5,288 oz.; Barima, 4,618 oz.; Potaro, 3,666 oz.; Essequibo, 2,903 oz.

BURMAH.

Tin.

Negotations which have been proceeding for some time past between the Government of Burmah and a private syndicate relative to the concession for working the tin mines in the Maliwan Division of Mergui have now been completed and the concession agreed to. It is expected that the development of the property will be proceeded with immediately.

CHINA.

The "Hupao," a Chinese paper, reports the discovery of gold in a range of hills in the Hunan and that large numbers of people are flocking to the scene of the discovery.

ENGLAND.

Coal.

An attempt is to be made to prove the existence of the well-known Kilburn seam of coal under the villages of Unstone and Dronfield. The black shale measure in the locality is now very nearly exhausted; and unless a new seam is opened up, these villages will fall to decay.

The work of sinking a shaft to the coal measures discovered on the Southeastern company's land near Dover was commenced on March 13th. The shaft is about 17 ft. in diameter. The experimental boring operations which have been carried on for the last two or three years in order to test the substrata have now been suspended.

Explorations have been going on for some time at Ballawhane, Isle of Man, with the hope of finding coal.

Cornwall.

Phœnix United.—The body of rich tin ore recently discovered at the 70-fathom level of the Western mine has further improved, and there is every indication that the run of tin ground is becoming longer in point of depth. The last ore broken from there assayed for the whole of the 14 tons 1 cwt. 3 qrs. 19 lbs. to the ton, showing a continuous value of £80 per fathom.

FRENCH GUIANA.

Placer Enfin.—The production of 1892 shows an increase of 41.04 kilos over that of 1891. The total value of output was 609,195 francs, against 475,127 francs in 1891, a gain of 134,068 francs.

GREENLAND.

Ivigtut Cryolite Mines.—There were shipped from Ivigtut in 1892 in all 14 cargoes, containing 655 tons of cryolite. There were 135 workmen employed during the working season, 76 of whom returned to Denmark in the fall, but 59 of them preferred to stay in Greenland for the winter.

INDIA.

Oregum Gold Mining Company.—The total output of bar gold in 1891 was 31,841 oz. obtained from 15,678 tons of quartz and 780 tons of tailings. For 1892 the return was 53,836 oz. of gold, obtained from 24,011 tons of quartz, and 16,639 tons of tailings, being a total increase of nearly 19,000 oz. of gold, owing to the treatment of over 8,000 tons more of quartz and nearly 16,000 tons more of tailings. The total value of the gold in 1891 was £132,482; in 1892 it was £202,219, an increase of very nearly £70,000. In 1891 the divided profits came to £58,375, being 27½% on the preference capital and 17½% on the ordinary capital; whereas for the past year the divisible profits amounted to £111,375, being at the rate of 47½% on the preference capital and 37½% upon the ordinary capital. It is stated in the report that there are over 55,000 tons of reserves in sight, against 20,000 tons only in the year before, and also that the tailings machinery has been doubled and the stamps increased from 50 to 70 heads. The mines now give employment to 1,700 odd men, of whom 80 are Europeans and Eurasians. During the year the company has sunk or driven 2,578 ft. of shafting and winzes, driven 4,118 ft. of levels and crossents, stoped over 1,760 fm. of lode, and milled 40,740 tons of quartz and tailings. In 1889 to win each ounce of gold cost exactly £2 13s.; in 1890, £2 2s. 8d.; in 1891, £1 19s. 9½d.; and in 1892, £1 9s. 9½d.

Nerbudda Coal and Iron Company, Limited.—Advices from the manager have been received announcing that the borings on a portion (about 160 acres) of the area in the new concession, within which coal has been proved, are highly satisfactory so far as they have yet gone, and that from this area alone it may reasonably be calculated a total output of upward of three million tons of coal, after allowing a very large percentage for actual loss in working, can be produced. It will, however, take some little time to sink a shaft and to open out levels in order to reach the seams in the most economical manner.

MEXICO.

Durango.

(From our Special Correspondent.)

Candelaria Mining Co.—A shipment of bullion valued at $20,000 has been received at San Francisco.

Monterey.

Echo Mining and Smelting Company.—Grading for the foundation for the new smelter of this company, at Magdalena, is about completed and the stone foundations are being laid for the walls and machinery. The company is piling up large quantities of ore, having one mine in condition to yield 75 tons per day, it is claimed.

Nuevo Leon.

(From our Special Correspondent.)

Fuente Coal Mines.—This property, situated just south of Piedras Negras, on the line of the Mexican International R. R., has be sold to Collis P. Huntington, of the Southern Pacific R. R. Co. For several months he has held an option on the mines at the price paid, viz., $500,000.

Sinaloa.

Anglo-Mexican Mining Company.—The superintendent advises that the product for March was $26,100 and that the mine developments are extremely favorable, especially in the Cache drift.

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 456.]

NEW YORK, Friday Evening, May 12.

The past week in the mining stock market has been one of the dullest on record. The volume of business was exceedingly small, only 6,495 shares being sold. The public took no interest in the various stocks. Indeed, it can scarcely be said that there was any market at all. To-day not a single transaction was reported at the Consolidated Stock and Petroleum Exchange, not even a "washed" sale.

The boom in the Comstocks, as we intimated in our last issue, has proved short lived. Telegraphic advices from San Francisco indicate quite a decline in prices. During the week here there were sales of 2,000 shares of Comstock Tunnel stock at 9@10c. Consolidated California & Virginia shows a single transaction of 100 shares at $2.50. Gould & Curry declined from $1.05@85c; total sales 220 shares. Of Ophir 175 shares were sold at $3.50@$3.70. Other sales were as follows: 100 shares of Hale & Norcross at $1.05; 200 shares of Overman at 40c.; 100 shares of Savage at $1.40; 100 shares of Best & Belcher at $1.85; 400 shares of Exchequer at 20c., and 100 shares of Potosi at $2.60. The following Comstock mining companies report having balances on May 1st, 1893, as per sworn statements on file in their offices: Andes, $19,007; Alpha Consolidated, $2,846; Alta, $10,791; Best & Belcher, $5,602; Belcher, $22,247; Consolidated California & Virginia, $58,494 in coin and $12,309 in unsold bullion, with further shipments to arrive; Crown Point, $9,675; Consolidated New York $2,530; Consolidated Imperial, $2,267; East Sierra Nevada, 85; Exchequer, $5,313; Hale & Norcross, $7,959; Julia Consolidated, $2,023; Lady Washington, $3,967; Mexican, $17,713; Occidental Consolidated, $3,415; Ophir, $18,819; Silver Hill, $1,813; Savage, $8,635; Segregated Belcher, $2,278; Sierra Nevada, $19,009; Union Consolidated, $18,418; Utah Consolidated, $4,241. The following mining companies report having an indebtedness May 1st, 1893: Bullion, $262; Challar, $16,543; Confidence, $58; Gould & Curry, $1,896; Justice, $2,275, with bullion shipments to come; Keutuck, $595, with bullion shipments to come; Overman, $9,838; Potosi, $24,295, with bullion to come.

There were no Tuscarora stocks dealt in during the week. The following Tuscarora mining companies report having balance on hand on May 1st: Nevada Queen, $1,372.36; Independence, $137.80, and North Commonwealth, $697.13. The following report an indebtedness on the same date: Commonwealth, $26,776.16; Grand Prize, $277; Navajo, $8,820.34; North Belle Isle, $9,071.48; Belle Isle, $5,579.71; Del Monte, $24,315.25.

Of the California stocks, we note sales of 300 shares of Belmont at 20c., and 700 shares of Brunswick at 6c. Of the Bodies, Mono shows a sale of 200 shares at 25c.; Standard Consolidated was quiet this week; only 100 shares were sold at $1.35. The receipts of this company during the month of April and up to and including May 6th were $22,150. The expenses for the same period were $13,900, leaving a profit of $8,250. In our mining news columns will be found an item concerning this company.

The following Bodie mining companies report having had balance on hand May 1st: Syndicate, $1,731.71; Standard Consolidated $38,181.45. The following reports having had an indebtedness Bulwer Consolidated, $1,654.43.

The Colorado stocks were neglected this week. There was a sale of 500 shares of Lacrosse at 4c.

There was a sale of Horn Silver at $2.90. The ore sales of this company during the month of April amounted to $52,545. The expenses were about $12,000.

El Cristo shows a sale of 100 shares at 30c., and Monte Cristo 400 shares, at $3 15.

Sales of Phœnix, of Arizona, this week amounted to only 500 shares, at 14c.

Officers of the New York Stock Exchange for 1893-4 have been elected as follows: F. K Sturgis, president; D. C. Hays, treasurer; George W. Ely, secretary; James Mitchell, chairman; S. J. Harriot, F. L. Henry, R. Limburger, Thomas L. Manson, Jr., M. K. McHarg, H. J. Morse, S. T. Russell, R. H. Thomas, S. Tilghman, Theodore Wilson, members of the Governing Committee to serve four years; S. J. Harriot, trustee of the Gratuity Fund, to serve five years; William Baylis, C. E. Carryl, Daniel Chauncey, Howard Lapsley and J. H. Prall, members of the Nominating Committee for 1894.

Boston. May 11

(From our Special Correspondent.)

The market this week in the early dealings reflected the depression prevailing in the general stock market, and a good many stocks were thrown upon the market by weak holders, which carried prices down to the lowest figures for the year. This was especially notable in the Montana stocks, which were pressed for sale, Boston & Montana selling down to $20, and Butte & Boston to $6¼. Later, there was recovery, and the former sold up to $23, closing to-day at $22, and the latter touched 7⅝ on the upward movement, losing the fraction later on. Calumet & Hecla dropped from $294 to $285, and recovered to $290. The stock is so well held for investment that it is not affected so largely as the situation would seem to warrant. Tamarack is more widely distributed and is carried on margins to some extent, and considerable stock came out on stop orders, causing a decline from $145 to $137, recovering in the later dealing to $150 and closing at $145. A dividend of $4 per share was announced, payable June 20, making a total of divideuds paid to date $3,470,000.

Quincy was weak, and on small sales declined from $115 to $112.

Osceola was quite strong after the first sales of the week, when it sold down to $26, and sold up to $29, reacting to $27½ in the later dealings.

Centennial declined to $6¼, but recovered to $7½, with latest sales at $7.

Kearsarge was steady on small transactions at $7½@$7.

Franklin came out quite freely at $11@$11¾, with a few small lots at $12.

Atlantic sold at $8, a decline of ¾; Wolverine at 2¼, a decline of ¼; Tamarack, Jr., at $16; same as last week; Santa Fe at 5c., and Mesnard at 50c.

3 P. M.—Franklin sold this afternoon at $11¾@$11½, Butte & Boston at $7⅛, Calumet at $290, and a small lot of Osceola sold at $28½. The market closed dull and without feature.

San Francisco. May 5.

(From our Special Correspondent.)

The market has not been so active during the present week as during the one previous, but nevertheless prices have been well sustained, an advance being noted in the more prominent stocks, and a sharp advance took place in the Gold Hill group of Comstocks on Wednesday.

The news from the front has been meager, but the starting of an east crosscut from the winze below the 1,565 level of Ophir, the face of which was reported in good ore, had the effect of stimulating the North End Comstocks. Consolidated California & Virginia sold to-day for $2.80, a 20c. advance during the week. Ophir sold at $2.95 in the S. F. Board and had a further advance in the Pacific Board, selling to $3.05, shading off and closing at $2.95. Mexican sold for $2.05, closing at 10c. off, and Sierra Nevada for $1.50.

The Middle Comstocks have sold quietly at steady prices. Best & Belcher sold to-day for $1.70; Chollar for $1.20; Gould & Curry for 80c.; Hall & Norcross for $1.15; Potosi for $2.85; a 10c. advance on the week's trading, and Savage for $1.20.

The South End Comstocks and Gold Hill shares have been the most active on the list, and although the advance in prices has not been great the volume of trade has exceeded any other line of stocks dealt in. Belcher sold to $1.70 this morning, an advance of 50c. during the week, and during the morning informal session 2,200 shares were sold. Bullion sold for 55c.; Consolidated New York for 15c.; Confidence for $1.40; Crown Point for $1.10; Justice for 20c.; Kentuck for 30c.; Overman for 38c.; Occidental for 25c., and Yellow Jacket for $1.25.

In the Bodie group, Bodie Consolidated sold for 35c.: Mono for 25c., and Bulwer Consolidated was held for 25c.

Of the outsiders no sales have been made.

Speculation continues rife as to whether a market is to be made or not. Indications seem to point to enhanced prices and increased activity, but while a sop may be thrown to the street it is not to be expected that an active market in the old time meaning of the term can be made. That is beyond the power of the Comstock "ring." The doings on the lode have been too well exploited, the wholesale robberies of bullion too well known, for the substantial business men to again come forward and engage in stock dealiug. At the time of the last boom in the market—in 1886—the most prominent men in this city were not averse to taking a "flyer" in stocks, but now the circumstances are altogether changed. When the mills on the Comstock are turned over to the companies, then, in very truth, a substantial market can and will be made, but until that time a "boom" in stocks will only prove another device of the enemy in their endeavor to unload upon the public.

SAN FRANCISCO, May 12th (*By telegraph*).—The opening quotations to-day are as follows: Best & Belcher, $1.40; Bodie, 20c.; Belle Isle, 15c.; Bulwer, 15c.; Chollar, $1.10; Consolidated California & Virginia, $2.20; Eureka Consolidated, $1; Gould & Curry, 95c.; Hale & Norcross, 80c.; Mexican, $1.55; Mono, 15c.; North Belle Isle, 20c.; Navajo, 20c.; Ophir, $2.15; Savage, $1.05; Sierra Nevada, $1.20; Union Consolidated, $1.10; Yellow Jacket, 85c.

London. May 3.

(From our Special Correspondent.)

Most attention has been attracted this week by the low priced shares, but though plenty of excitement was created out of them, comparatively few transactions were reported. Holcomb Valley gold shares have hardened considerably in spite of the unexplained opposition of one of the leading financial papers, and buyers have come freely forward on the strength of a good report from Mr. Skertchly, one of the shareholders. The New Guston shares, which fell after the publication of the last report fully 50%, have recovered from 5s. to 8s. under the belief that economies in mining will compensate for the fall in the grade of the ore. Yankee Girl shares have been dealt in and the price is hardened a few pence. Emma also has been inquired after and has risen 3d. Of other stocks, De Lamar, South Poorman and Golden Leaf have fallen slightly in value, while Elkhorns and Mammoth golds have fluctuated in price, but to-day stand at the same figure as a week ago.

It is stated that the Amador Gold Mining Company of California is about to go into liquidation. A few months ago the property was sold by the sheriff of Amador County, California, following a judgment of the State court that this company had acquired it fraudulently by taking it over from a man who had stolen the deeds of the property. Only one dividend was ever paid by this company and that we believe was out of capital. On their own statement the ore only contained from $4.50 to $13 a ton. The company was promoted by the Cochranes, an outside firm of stockholders, though nominally the issuers were the English and Foreign Debenture Corporation, Limited, and their bankers, the London and Universal Bank. This corporation is intended to float the companies that the Cochranes wish to manipulate, and the Loudon and Universal Bank belongs to the same firm. The reports, it is now conceded, were concocted from imagination, and the stamps were kept going on any kind of material. Nothing can be done now to make up for the loss to stockholders, but the three names mentioned should be borne in mind by future intending investors.

The doings of the Palmarejo Company are still attracting attention in London. As reported a shareholder's committee was appointed to confer

with the directors as to how the remaining £8,000 out of the £50,000 new 10% preference shares required should be raised. This committee has reported that the operations from the commencement of crushing in June last to February of this year have resulted in scarcely any profit and are disappointing in the extreme. They considered that the only way to settle the question is to send out a mining engineer of repute and high standing to fully report on the mine and to confer with the manager as to the treatment of the ore and economy of working. They state that as many debts are pressing, time does not allow of any scheme being formulated for raising the necessary money other than that proposed by the directors. At the meeting held April 27th, at which this report was presented, the chairman stated that £48,000 out of the £50,000 would have to be paid in liquidation of debt before September 1st, and that some other means would have to be considered shortly to raise further capital by that time. He also said that in the opinion of the directors the remedy for the want of profit would be the erection of more stamps, so we may expect more financial operations yet. It is a pity that the British public do not believe the statements of the "Engineering and Mining Journal" instead of throwing away their money in this way.

The Harvey Steel Company, of Great Britain, has this week been formed with a capital of £190,000 to superintend the working of the Harvey armor patents in Great Britain. It is not intended that the company shall erect plant or works, but it will license the armor plate manufacturers to use the process under a royalty to the company. The chairman of the company is Mr. E. Windsor Richards, of the Lowmoor Iron Works, Yorkshire, and besides other directors, one each will be appointed after allotment of the shares by John Brown & Co., Charles Cammell & Co., and Vickers' Sons & Co., all of Sheffield. These names and that of Mr. Windsor Richards are sufficient to show that English armor-plate authorities consider that the Harvey process will be universally used for armor plate.

MEETINGS.

Columbus & Hocking Coal and Iron Company, at the office of the company in Columbus, O., May 17th, at 12 o'clock noon.

Leadville Consolidated Mining Company, at the office of the company in New York City, May 20th, at 1 p. m.

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.

Tamarack Mining Company, dividend No. 19 of $4 per share, $200,000, payable June 20th at the office of the company, in Boston, Mass. Transfer books close May 25th and reopen June 1st.

Trinity River Hydraulic Mining Company, dividend No. 4 of one-half a cent per share, $2,500 payable May 15th, at the office of the company in Denver, Colo. Transfer books close May 12th, and reopen May 16th.

METAL MARKET.

NEW YORK, Friday Evening, May 12, 1893.

Prices of Silver per Ounce Troy.

May.	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.
6	4·88	38¾	83¾	·645	10	4·88⅛	.....	83¼	·648
8	4·87⅞	38⅞	83¾	·648	11	4·88¾	38¼	83⅛	·645
9	4·88	38½	83⅞	·649	12	4·88½	38¼	83⅛	.646

The violent fluctuations in exchange, together with the panicky condition of the Eastern market on Wednesday, have unsettled the price of silver, which had been improving, and the London market is quoted dull. There is an absence of all speculation in silver. Futures are being sold at a concession by the trade, in anticipation of lower prices ahead.

The United States Assay Office at New York reports the total receipts of silver for the week to be 169,000 oz.

Government Silver Purchases.

The Government has purchased during the week the following quantities of fine silver at the accompanying prices per fine ounce:

May 8th, 454,000 oz., at 84·2c. to 84·4c.
May 10th, 560,000 oz., at 83·95c. to 84·1c.

Gold and Silver Exports and Imports at New York Week Ending May 6th, 1893, and for Years from January 1st, 1893, 1892.

	Gold.		Silver.		Excess of
	Exports.	Imports.	Exports.	Imports.	Exports.
Week....	$531,184	$53,265	$706.287	$9,146	$1,195.060
1893.....	51,673,606	5,623,076	10,999 177	940,928	56,108,979
1892.....	22,994,173	5,822,072	8,874.665	502,241	25 544,522

During the five days ending May 12th the exports and imports so far as ascertained have been as follows: Exports, gold, $11,300; silver, $240,355. Imports, gold, $7,298; silver, $31,345. Of the silver exported about one-half was American bullion. Only $1,300 in gold went to Europe. During the week about $750,000 in gold was received from Canada.

NOTES OF THE WEEK.

In our issue of last week we endeavored to show that the Sherman bill had first caused inflation, then contraction; an additional proof of this is to be found in the last report of the Treasury Department, showing the stock of money, both total and per capita, in the United States. The present per capita amount is $23.37. According to the Director of the United States Mint the per capita amount January 1st, 1890, was $24.38. On January 1st, 1891, it was $25.17. On November 1st, 1891, it was $25.30. From these figures it is seen that notwithstanding the addition of about $140,000,000 to our currency in consequence of the Sherman act of 1890, there has been an actual decrease of the money in the United States amounting to over $1 per person since the beginning of 1890 and to $2 per person since end of 1891. A more striking proof of the inadequacy of such a bill to furnish an increased volume of currency for the growing business of the country cannot be needed.

In following issues of the "Engineering and Mining Journal" we propose to give a full statement of the stock of money, both of gold, silver and uncovered paper; of National Bank loans in the Clearing House cities; of deposits in the same and of the rates of interest for call and time loans since 1890. This table will show inflation followed by stringency and that every silver dollar note added to our currency has been followed by the loss of a dollar in gold coin exported. In other words, it will show the operation of Gresham's law, the cheaper money driving out the better.

During the past week stocks have recovered to a slight extent, but the commercial depression has spread, as we have predicted, to the country at large and the end is by no means in sight. This morning's dispatches bring accounts of bank failures in Chicago, Indianapolis, Delaware and California. These failures will probably be followed by others; they will certainly cause distress in their districts. The depression is now being felt among purely industrial companies whose credit is of the highest; thus we are reliably informed that some of the largest manufacturing companies in the United States have been compelled to discharge a large number of their men owing to the decrease in orders.

In our issue of May 6th we stated that although Europe had taken a large amount of stocks (estimated at 100,000 shares), "there is no reason to believe that such investments will be permanent." The justness of our prediction is proved by considerable selling orders to realize the higher prices prevailing during the present week. This has caused renewed talk of the exports of gold, and it is now probable that the outward movement will be resumed before the end of the month. This will be unfortunate, for it cannot but increase the alarm now felt, and accentuate the prevailing depression.

There is a glimmer of hope, however, to be found in the postponement of the meeting of the Monetary Conference. Some time ago President Cleveland requested the American delegates to the Conference of last year to resume their duties at the adjourned meeting, which was to have been held during the present month. At the same time he notified the Belgian Government of his desire to have the Conference reconvene. It is reported that the Belgian Government, presumably on the advice of M. Montefiore Levi, suggested the desirability of postponing the meeting until some time in the fall. This suggestion has been acted upon by President Cleveland and the meeting will now take place in November. It is probable that Congress will meet in September and there is but little doubt that the Sherman bill, which has wrought so much harm, will be repealed. If this should take place the position of our Government would be much improved and the prospects of arriving at some monetary arrangement with Europe be made brighter.

From an official report of the Spanish Mint it is learned that the coinage since 1869, at which time a new coining law went into effect has been as follows: Silver 273,905,845 pieces, valued at 894,440,404 pesetas and gold 55,843,754 pieces, valued at 1,355,778,000 pesetas, the peseta being worth approximately 20 cents of our money. The "Revista Minera," in commenting upon the report, says: The question of the circulating medium became aggravated and complicated from the moment in which the United States saw itself obliged to desist from its impossible task of sustaining universal bi-metallism, and the necessity which obliged Spain to accommodate its own system in accordance with that of the countries with which its principal commercial relations existed has caused it to suffer great damages. The most decided partisans of bi-metallism, as Laveleye know that it cannot be sustained unless accepted by the principal commercial nations. The monometallists say more than this, namely, that there is no law capable in these times of sustaining a fixed value relation between gold and silver, whether in bullion or coin. "La Revista" advises that the country accept gold monometallism, leaving to silver its use for subsidiary coinage only.

The Paris correspondent of the London "Financial Times," in a recent letter in which international monetary arrangements were discussed, said that of the 1,270 million francs in silver held by the Bank of France, at least 343,000,000 were foreign coin, of which about 132,000,000 francs consisted of Italian five-franc pieces. This withdrawal of coin has greatly crippled Italian industries and commerce, and it must be considered as nothing less than a menace to the stability of Italian finance in that whenever the Latin Union shall be dissolved this sum must be redeemed in gold.

He continues: "Another fact connected with Monetary Unions and their fatal consequences will probably make itself felt in the London silver market ere long. The Austrian Government has just taken back from Germany about 9,000,000 marks in the so-called Vereinsthaler, which, on June 1st, will be declared demonetized. There still remain about 60,000,000 marks in Germany which the country is obliged to keep, and on which a heavy loss will have to be borne by the government, as it will be melted down and probably sold as bar silver in the London market."

Domestic and Foreign Coin.

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

	Bid.	Asked.
Mexican dollars	$.65¾	$.66¼
Peruvian soles and Chilian pesos	.59¼	.60
Victoria sovereigns	4.85	4.88
Twenty francs	3.86	3.89
Twenty marks	4.71	4.78
Spanish 25 pesetas	4.80	4.85

Imports and exports of metals and ores into the United States during March, 1893 and 1892:

IMPORTS.

		1893.	1892.
Iron ore	tons	58,984	81,346
Pig iron	"	6,179	9,270
Scrap iron and steel	"	752	2,496
Bar iron	lbs.	1,578,258	2,005,192
Steel bars, blooms, billets, etc	"	6,709,955	7,888,978
Wire rods, iron or steel	"	10,205,218	5,190,332
Sheet and taggers, iron and steel	"	9,531,904	3,198,961
Tin plates, terne plates	"	54,995,636	67,198,960
Tin in pigs, etc	"	5,838,513	3,642,159

EXPORTS.

		1893.	1892.
Pig iron	tons	1,843	1,297
Bar "	lbs.	241,304	239,982
Ingots, bars, and rods steel	"	23,686	5,279
Iron nails and spikes	"	1,192,234	1,122,460
Wire	"	3,686.387	3,150,251
Zinc ore	tons	none	66
" pigs, bars, etc	lbs.	692,829	940,130

EXPORTS OF FOREIGN METALS FROM THE U. S., MAR., 1893

Copper ore	lbs.	187,125
" pigs, bars, ingots, or old	"	217,471
Sheet iron	"	9,000
Tin plates	"	229,268
Tin in pigs, etc	"	11,610
Lead value, quantity not given		$579,156

Copper has once more lapsed into a state or dullness, and, although the price of lake is firmly fixed at 11c., the trade can still supply itself quite freely thereat, with electrolytic copper to be had at 10⅝@¾, and casting at 10¼. The market price of Arizona pig copper, 96%, is 9·35@·40.

The agreement to restrict the production has not yet been signed, it being understood that two parties are holding out; however, it is confidently hoped that an arrangement will be concluded.

The foreign markets also have now begun to show signs of weakness, and the price of Chili bars has declined to £43 17s. 6d.@£44 for spot and to figures 10s. higher for three months prompt, the lowest prices for some time past. Refined and manufactured we quote as below:

English tough, £47@£47 10s.; best selected, £48 10s.@$49; strong sheets, £55@£56; India sheets, £51@£51 10s.; yellow metal, 4¾d.

The decline has been due primarily to the financial troubles, especially those in Australia, but nevertheless the demand from abroad, especially from the continent, for fine copper remains quite good.

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

	To Bordeaux—	Copper.	Lbs.	
S. S.	Tancarville	788 bars	48,622	$5,600
	To Genoa—	Copper.	Lbs.	
S. S.	Fulda	10 plates	1,277	$147
	To Liverpool—	Copper Matte.	Lbs.	
S. S.	Alaska	6,135 bags	696,963	$31,000
"	Campania	2,224 bags	227,2 8	28,000
"	"	1,093 bags	96,448	4,500
"	Nomadic	4,165 bags	416,920	19,000
"	Dalton	1.096 bags	120,465	5,000
"	Alaska	409 pigs	112,440	11,000
	To Bristol—	Copper.	Lbs.	
S. S.	Manhansett	570 pigs	228,253	$21,500
"	Monomoy	1,176 pigs	346,772	33,500
	To Rotterdam—	Copper.	Lbs.	
S. S.	Rotterdam	54 barrels	67,560	$8,100
"	"	18 casks	22,500	2,700
"	"	420 pigs	114,136	11,000

Tin.—In the price of this article we have to report a very heavy decline brought about also by the monetary troubles. During the week spot has been sold down to 20·20, June-July to 20¼ and August to 20·70. As the consumptive demand is very good, it may fairly be assumed that prior to July 1st no very large quantities of metal can be accumulated here, and that, therefore, either by the cor shortly afterwards, a not inconsiderable rise in price will have to be chronicled.

Europe, too, has been flat, declining quite rapidly to £90 15s. spot for spot, and £88 for July, and £16 for September tin in London.

From the East we hear that as all the metal that could be had for shipment in time to reach the States prior to July 1st has been sent here, ship-

ments must of necessity be rather light during this and next month.

Lead.—This article also has declined in price, large quantities having been freely offered at 3·85 and 3·80, thoroughly frightening buyers, which is not to be wondered at considering the rapidity of the decline of the last ten days. To us it looks as if prices would give way even more as the pressure to sell is great, although, on the other hand, the article is remarkably cheap at present values. With the foreign market the same story of weakness is connected, and Spanish lead has now declined to £9 10s.@£9 12s. 6d., English selling at £9 12s. 6d.@£9 15s.

St. Louis Lead Market.—The John Wahl Commission Co. telegraph us as follows: Lead demoralized and largely lower. The selling pressure has been great and prices have declined since last report from 3·75c. to 3.60c. nominally.

Spelter.—The higher prices that ruled, almost nominally one might say, have vanished, and the present New York quotation must be recorded as 4⅛@4 40. The threatened strike in the coal fields from whence the fuel supply of the spelter district is drawn has been postponed, and, in the opinion of a great many people will now never break out; however, consumers are so scantily supplied that it seems probable that prices will harden ere long.

In London good ordinary brands are quoted at £17 12s. 6d., and specials at £17 15s.

The Weir City Zinc Company, maker of the "Cherokee" brand spelter, has been succeeded by the Cherokee Zinc Company, a new organization, with the same offices and works.

Antimony is in the same old rut of dullness, Cookson's being quoted at 10¾, L. X. at 10½ and Hallett's at 10c.

Nickel is flat at from 45@52c. per pound.

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

IRON MARKET REVIEW.

NEW YORK, Friday Evening, May 12, 1893.

Pig Iron Production.

Fuel used.	Week ending May 12, 1892.		Week ending May 14, 1893.		From Jan., '92.	From Jan., '93.
Anthracite.	94	38,970	73	34,310	701,460	604,300
Coke.	164	138,990	146	134,595	2,501,820	2,398,750
Charcoal...	55	11,820	36	8,623	179,809	156,530
Totals....	313	189,780	255	177,528	3,383,089	3,159,580

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.

During the past week nothing of interest has occurred to modify appreciably our comments on the iron market published in our last issue. The lack of features continues. Despite the cheerful reports of one or two dealers, who report a good business, the market is dull and quiet, and there seems to be less iron moving in this harbor. The standard brands have held their own firmly as to prices, but some of the poorer grades which are pressing on the market are weaker. Generally orders have not been large or numerous. Here and there we hear of orders of 800 or 1,000 tons being placed, but this is the exception rather than the rule.

Hugh W. Adams & Co., the well known pig iron brokers of this city, have removed from 56 Pine street to the Vanderbilt Building, 15 Beekman street.

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.—We hear of a few orders, most of them of not very great importance. There are, however, several good sized contracts still unplaced, and bids are being sent in. There is little or no change to report of prices, which continue low. We quote: Angles, 1·75@2c.; axles, scrap, 1·90@2·10c., delivered; steel, 1·85@2c.; bars, common, 1·50@1·60c.; refined, 1·65@1·9c. on dock; beams, up to 15 in., 1·90@2·15c.; 20 in., 2·10@2·35c.; car truck channels, 2@2·10c.; channels, 1·90@2·10c. on dock; hoops, steel, 1·8@1·9c., delivered; links and pins, 1·85@2·10c.; plates, bridge, 2@2·10c.; firebox, 2·5@2·8c.; flange, 2·25@2·50c.; marine, 2·50@2·75c.; sheared, 1·85@2·10c.; shell, 2·10@2·25c.; tank, 1·8@2c.; universal mill, 1·80@1·90c.; tees, 2@2·50c., 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 absolutely nothing doing in this market. Quotations are as follows: 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.—The market for rail fastenings continues lifeless. Quotations remain: Fish and angle plates, 1·55@1·60c. at mill; spikes, 1·9@1·95c.; bolts and square nuts, 2·45@2·50c.; hexagonal nuts, 2·55@2·60c., delivered.

Spiegeleisen and Ferromanganese.—We hear of a few small sales of both ferro and spiegel. Quotations are nominally as follows: 10 to 12% Spiegel, $22@$22.50, 20% $25@$25.50. Ferro, 80% $57@$57.50.

Steel Rails.—We do not hear of any business of importance in this market, which continues quiet. Quotations are unchanged at $29 mill or tidewater. Girder rails. $31@$33. Steel rails fit to relay can be had for $20.

Chicago. May 11.

(From our Special Correspondent.)

Many of the foundries here are working with smaller forces of molders, as only the best mechanics have been retained at the increased wages. The appointment of a receiver for the Premier Steel Company, Indianapolis, has had a very depressing effect on the market here, as well as tending to decrease confidence. This concern was a large consumer of Bessemer pig iron and had heavy contracts with producers in this vicinity. The market generally is quieter than the week previous; and while there is nevertheless a large tonnage going into consumption buyers are very conservative in regard to their purchases. With regard to manufactured iron and steel, the prospect in nearly all departments is less encouraging. Low prices of material and a determination to reduce cost of production by the introduction of improved appliances in labor saving machinery have caused the shutdown of all departments of the Illinois Steel Company's mills at Joliet. Work on the improvements, long contemplated, is now going on, but there is as yet some uncertainty as to when the mills will resume, as the yearly scale of prices is not yet adjusted.

Pig Iron.—Only a very moderate amount of business was transacted during the week. Orders were light, consumers buying for current needs only. Demand for local and Northern coke iron is by no means up to expectations; and while several large contracts are reported, they stand out conspicuously in a barren waste of inquiry and small orders. In Southern coke iron there seems to be a great want of confidence, and buyers insist on concessions of 25c. to 35c. from the regular $9 per ton rate for No. 2 Foundry at furnace. The week has been a quiet one. Lake Superior charcoal iron of the high chilling grade is scarce and prices hold steady.

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.—Demand for these specialties is nominal and quotations unchanged at $25 for billets and $32.50 for rods.

Structural Iron and Steel.—Outside of the demand for the superstructure of elevated railways, demand is very light. The specifications for the City Hall at Milwaukee, Wis., are being figured on and will be let next week. The structural and ornamental iron and steel work is estimated at $160,000. 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.—Demand continues very light for present and future requirements, and the outlook less satisfactory than that of a year ago. 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.—The uncertainty as to the prospective crops is causing many implement manufacturers to withhold inquiry until later in the season. There is, however, a moderate amount of business doing, but mostly in small mill lots. Good steel is in very fair demand. 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 big contract for corrugated galvanized iron was placed last week for Armour's new elevator, but demand generally is quieter and much scattered. Discounts are unchanged 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.—Demand has again lapsed into quietude and price is a little easier at 2·80c. for No. 27 common. Jobbers quote 3c. for iron and 3·10@3·15c. for steel which is rapidly displacing iron.

Bar Iron.—In anticipation of another prolonged shutdown of the mills after July 1st, jobbers and the smaller manufacturing consumers are covering their wants. Mills in this vicinity are well supplied with orders to keep them running full until the end of June. Regular prices are: 1·50@1·53c. base, but concessions are made. Jobbing quotations are 1·65@1·75c. on iron or steel bars.

Nails.—Steel cut nails are in moderate demand from mill at $1.30 base, Chicago, and jobbing quotation $1.40. Wire nails are in much better inquiry from mill at $1.62½ base, Chicago. Jobbers quote $1.70 from stock in less than carloads.

Steel Rails.—There is not a particle of change in the rail situation. Small orders of 500 to 1,500 tons are the rule at $30@$31.50. Steel railway sections are in fair demand, both locally and from outside towns.

Scrap.—Lower prices have stimulated buying, and some consumers have taken round quantities. Railroad, $14.50; No. 1 forge, $14; No. 1 mill, $9.50; fish plates, $15.50; axles, $19.50; horseshoes, $14.50; 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.—Efforts of consumers to hammer down prices fail, and holders refuse to sell at less than $18. Steel rails are in poor demand at $11.25@$14.50 as to length, etc. Car wheels are $14.50.

Louisville, Ky. May 6.

(Special Report from Hall Brothers & Co.)

There has been no change of consequence in iron during the past week, and there is really nothing new to be said on the subject. Some fair sized orders for charcoal have been booked, but at low prices. Some companies are yarding their stocks in preference to selling at figures necessary to effect sales now.

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 12.

(From our Special Correspondent.)

Pig Iron.—The market is quiet. No pressure to sell. Buyers order only for work in hand. Inquiries as to condition of stocks at Pennsylvania furnaces show a clearing out of the better makes and an accumulation in a good many instances of ordinary brands. Some makers of forge iron have offered one thousand ton lots at $12.75, but millmen do not care to buy that way. Founders are waiting for developments. Nothing is being done in Bessemer at $15.50; No. 1 F. is $15.

Muck Bars.—A few small sales were made at $22.50.

Billets.—Offers have been made at $23.50 for summer delivery, but some consumers are not willing to risk even that offer.

Merchant Iron.—If millowners could afford to sell car iron at 1.50, they could do a great deal of business. General retail price for refund is on the base price of 1.65.

Skelp is to be had at 1·50, and at this figure a good run of business is coming.

Pipe.—A steady business is done in pipes and tubes at 60 off on black and 50 on galvanized butt-molded. The tube branch is very fair, and discounts average 65.

Sheet Iron.—The larger buyers have placed the bulk of their orders for the next two or three months, but the smaller buyers appear to be as active as ever at 2½@4c. for soft steel sheets, which are having a good run.

Plate and Tank.—The big New York Central and New York City contracts are let this week. No other large orders have been heard of, but there are inquiries for upward of 20,000 tons in sight, part of which will turn into orders late this month.

Merchant Steel.—Sharp competition developed itself on a few orders this week. Prices on large orders have not reached bottom.

Structural Material.—A few small orders for angles and beams came along. The manufacturers speak very encouragingly of the summer outlook.

Steel Rails.—Increased activity in small lots at $29. Rumors are again afloat of possible business in a large way at concessions.

Old Rails.—Receipts are quite liberal. Sales light.

Scrap.—Scrap is accumulating at yards. Buyers are not ready to pay yard prices for more than small lots.

Pittsburg. May 11.

(From Our Special Correspondent.)

Raw Iron and Steel.—There is very little life in the iron trade, although a fair amount of business is being transacted. The events of the past few weeks have shown pretty plainly that the market is not in a condition to make a sudden start in an upward direction, no matter what arguments may be advanced to substantiate the view of better prices. The general condition of financial affairs has undoubtedly had a depressing effect on trade generally, and particularly the iron and steel products, and buyers within the past few weeks have shown even greater cautiousness in placing of orders. While many of the furnaces have orders on their books for deliveries extending through the next four months, there is plenty of iron to meet the demands of buyers. With the present rate of production about equal to the consumption furnaces are not threat-

ened by any heavy accumulation of stocks, either in their own yards or with consumers. Outside of the favorite brands, which command full quoted rates, buyers appear to be able to make favorable terms for such material as they are willing to contract for, which continues as small as the exigencies of each individual case will permit. The furnaces and mills in the Shenango and Mahoning valleys seem to be running to their full capacity.

For some weeks past the sales of Bessemer pig and steel billets in valley have been quite large, at prices equal to Pittsburg delivery of $13.40 to $13.50. The sales of steel billets were equally large, with many of them extending the balance of the year. We are reported the following sales:

Iron Ore.

100,000 Tons Bessmer ore at L. E. ports....	$350

Coke Smelted Lake and Native Ore.

Tons.	Cash.
4,000 B., Valley Furnace, Sept to Dec....	12.90
3,000 B., Valley Furnace, July to Sept	12.90
2,500 B., May, June..	12.60
2,500 B., May, June..	13.45
2,000 B., May to July.	13.50
1,500 B., May, June..	13.40
1,500 B., May, June..	15 35
1,000 G. F.....	12.25
900 G. F.....	12.25
700 G. F.....	12.25
500 G. F.....	12.25
500 G. F.....	12.25
500 No. 1 F.....	14.00
400 No. 2 F.....	13 00
100 W. I.....	14.50
100 No. 1 S.....	16.00
100 No. 2 S.....	14.50

Blooms, Billets and Slabs.

6,000 B., July to Dec., at mill	$21.75
2,250 B., July to Sept., at mill.	22.00
2,000 B. May, June, delivered.....	22.25
1,800 B., May, June, at mill.....	21.85
1,000 B. and S., May, June, at mill,....	21.50
500 B. S.....	2.250

Muck Bar.

Tons.	Cash.
500 N.	$24.00
300 N., May.....	24.10
150 N., June.....	24.15
100 N.	24.00

Skelp Iron.

600 S..... 1.70	4 m.
450 N. G..... 1.17½	4 m.
300 W. G..... 1.17½	4 m.

Skelp Steel.

385 W. G.....1.45	4 m.

Charcoal.

200 F.....	$18.00
100 C. B.....	26.50
100 C. B.....	26.00
75 No. 2 F.....	14.00
50 No. 1 F.....	21.00
25 No 2 F.....	18.50

Spelter.

150 Spelter.....	4 50
100 Spelter.....	4.42½
50 Spelter.....	455

Sheet Bars.

800 S. B., at mill.....	28.50

Bar and Billet Ends.

1,000 B. and B. ends...	15.00
200 B. ends.....	14.75

Scrap Material.

500 No. 1 R. R. W. S. net.....	15.50
300 C. S., gross.....	12.25
200 W. T., net.....	10.50
200 T. P. & T. 1. net	12.50
100 M. 2 W. net....	14.25

COAL TRADE REVIEW.

NEW YORK, Friday Evening, May 12.

Statement of shipments of anthracite coal (approximated) for week ending May 6th, 1893, compared with the corresponding period last year:

	May 6, 1893. Tons.	May 7, 1892. Tons.	Difference.
Wyoming region.....	421,636	403,486	Inc. 18.150
Lehigh region.....	119,723	112,875	Inc. 6,858
Schuylkill region.....	190,805	219,613	Dec. 28,808
Total.....	732,174	735,974	Dec. 38,000
Total for year to date.	13,951,199	12,769,166	Inc. 1,185,033

PRODUCTION OF BITUMINOUS COAL for week ending May 6th and year from January 1st:

	1893. Week.	1893. Year.	1892. Year.
Shipped East and North:			
Phila. & Erie R. R.....	1,611	42,146	32,194
Cumberland, Md.....	76,966	1,314,674	1,213,682
Barclay, Pa.....	1,132	24,638	71,463
Broad Top, Pa.....	11,053	274,306	205,547
Clearfield, Pa.....	81,351	1,507,293	1,326,682
Allegheny, Pa.....	27,441	473,550	417,134
Beach Creek, Pa.....	24,727	642,427	925,219
Pocahontas Flat Top.....	51,414	1,004,557	852,777
Kanawha, W. Va.....	68,621	1,098,596	865,347
Total.....	344,319	6,412,187	5,920,045

	1893. Week.	1893. Year.	1892. Year.
Shipped West:			
Pittsburg, Pa.....	23,146	458,821	463,118
Westmoreland, Pa.....	31,879	732,715	545,683
Monongahela, Pa.....	7,515	227,243	183,788
Totals.....	65,540	1,418,809	1,192,589
Grand totals.....	509,859	7,830,996	7,112,634

PRODUCTION OF COKE on line of Pennsylvania R. R. for the week ending May 6th, 1893, and year from January 1st, in tons of 2,000 lbs.: Week, 98,800 tons; year, 1,966,121 tons; to corresponding date in 1892, 2,003,497 tons.

Anthracite.

The second week in May has brought no great relief to the anthracite coal trade. The market is practically without change from our last report; it continues very quiet. As far as can be learned the restriction ordered for May is being adhered to, and some of the operators are complaining of a short supply of cars. Stocks just now are light throughout the country. There is quite a sharp demand for small sizes, pea and buckwheat; these show the greatest activity. The demand for egg and broken, while not so good, shows signs of improvement. Consumers certainly are not buying as freely as was expected. There is considerable speculation as to whether or not prices will be advanced in June, and there are reports of a smaller allotment for that month. While, generally speaking, the market is in a fair condition, consumers have not received positive indications that harmony exists among the companies.

An advance, if any is made next month, would be significant of more than the mere fact of higher prices; it would have to be regarded as a strong intimation that a definite agreement does exist between the companies. Prices are being maintained; when consumers will come to realize that this will continue a good market will result. The experience of many years has not led buyers to place very great confidence in the agreements and official statements of the companies, but it seems likely at this writing that the coal trade next month will be in fair shape.

The Reading Railroad reports that the coal shipment (estimated) for last week, ending May 6th, was 378,000 tons, of which 25,000 tons were sent to Port Richmond and 65,000 tons were sent to New York waters. Vessels are in moderate supply at Port Richmond, and freights are nominally quoted at $1.05@$1.15 and discharge to Boston, and 95c.@$1 to Providence.

Prices are about 15@25c. below the official schedule, which is 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 prices 25c. per ton above Philadelphia.

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

From the annual report of Mr. Charles E. Pugh, general manager of the Pennsylvania Railroad Company, for 1892, we learn that the total shipments of coal and coke over the Pennsylvania Railroad Division was 23,767,921 tons, an increase of 1,835,555 tons, the coal tonnage alone amounting to 18,160,816 tons.

Bituminous.

There has been some cutting of prices during the week, about 5c., but this probably is more a reduction by the agents themselves of their commissions than a real cutting by the companies. The supply of cars has improved materially within the past 10 days, and several shippers report having almost enough cars. This state of affairs may have been brought about by the closing down of some of the mines producing the poorer grades of coal; the railroads are maintaining their rates firmly, although there are some rumors that they will be shaded to meet the necessities of the producers alluded to, who cannot compete with the better grades, when all are paying the same rates. We have been unable to discover any foundation for these rumors.

In the meantime there are a great many contracts open, although it is rather late in the season. Consumers have been holding off in the expectation of allowances being made by the railroads to certain producers and of corresponding allowances by these producers to the users of bituminous coal.

There has been a scarcity of orders for shipment at the lower ports, due to the expiration of old contracts which have not been given out yet. Orders for New York harbor ports seem to be plentiful. Ocean freight rates are still going down. It is not believed, however, that the low rates of last year or of the year before, will be reached. We quote: Baltimore, Norfolk and Newport News to Boston, Salem and Portland, $1.05, alongside. Philadelphia to Boston and Salem, 95c.@$1; to Portsmouth, $1@$1.05; to Sound ports, 85@90c.

There is nothing of interest to report of the Seaboard Coal Association. It is not yet entirely out of existence, but all work done by it is of a perfunctory nature.

Boston. May 11.

(From our Special Correspondent.)

There has been decidedly more inquiry for hard coal this week than last, and it now looks as though an active market were at hand. When the demand does start up it will be nothing short of a harvest for the companies, as stocks are light, Boston and New England buyers having waited for lower prices, and believing that the hold-off policy would bring the companies to terms. It looks as though the companies were in a strong position and most of the dealers here are beginning to realize it. Though outside companies are making some concessions from the list the railroad companies are asking full circular prices.

Prices quoted are net circular. New York: Stove and chestnut, $4.15; egg and broken, $3.90. Lykens Valley (at Philadelphia), broken, $4.85; egg, $5.45; stove, $6; chestnut, $5.

In soft coal there is but a moderate business doing. One of the important contracts closed lately was that of the Booth Mills of Lowell, Mass., for about 7,000 tons New River Coal. Spot coal is in very fair demand. George's Creek and Clearfield are both quoted $3.85@$3.90 on cars here.

Freight rates are still being firmly maintained, and tonnage does not seem to be very plentiful. Many dealers here have been holding back from buying coal in the hopes that rates would go down, but they have receded very little in the past month.

Rates are: From New York, 70c.; from Philadelphia, 95c.@$1; from Baltimore, $1.05@$1.10; from Baltimore to Sound points $1; to Bath, $1.10; from Newport News and Norfolk, $1; to Sound points, 90c. This is naturally a quiet month and that trade should be dull is to be expected. Prices are maintained at the new circular, or more properly agreed, list. We quote: Stove, $6.25; nut, $6.25. egg, $6; furnace, $5.76; Franklin, $7.50; Lehigh egg, $6.25; Lehigh furnace, $6; soft coal, $4.25.

Buffalo. May 11.

(From our Special Correspondent.)

The anthracite coal trade is very quiet, for local wants and orders from near-by points are comparatively light. Warm weather has come at last, and with it of course decreased consumption of fuel. Prices unchanged. Bituminous coal in continued good demand with arrivals of cars rather in excess of the trade, and as a consequence quotations are a shade weaker, although not so scheduled, but to save demurrage charges occasionally concessions are made. Manufacturing establishments are all busy.

The lake freighting of coal has been very light for several days, and to obtain cargoes vessel owners were compelled to make two concessions, amounting in the aggregate to 20c. per net ton to Lake Michigan and Lake Superior ports. Marine matters generally are in a very bad shape. There is little grain to come down to this port for many reasons; very little iron ore is moving; canal freights have declined, with still lower tendency; tight money market; altogether, a very discouraging outlook.

The awarding of the coal or natural fuel gas contract for the Buffalo Water Bureau has been deferred for a few days, with long odds in favor of the latter being the favorite.

Yesterday several propellers were enabled to make a passage through the ice at Duluth and West Superior, the first arrivals of the season. Nearly all the Lake Superior ports are now open.

The shipments of coal by lake westward from this port for the week ending Saturday last aggregated 70,920 net tons, distributed as follows: 28,450 tons to Chicago, 13,600 tons to Milwaukee, 10,700 to Duluth, 730 to Marquette, 3,000 to Gladstone, 1,000 to Ashland, 1,150 to Green Bay, 700 to Racine, 1,000 to Cheboygan, 1,100 to Bay City, 240 to Detroit, 500 to Kincardine, 7,550 to West Superior and 1,200 to Saginaw.

Total shipments for the season to May 6th, inclusive, to all ports were 248,964 net tons.

To-day's rates of freight are: Coal, Buffalo to Chicago and Milwaukee, 40c., and to Lake Superior ports 30c. per net ton free on and off. Light engagements.

Chicago. May 11.

(From our Special Correspondent.)

The feeling of a possibility of an advance of 25 cents per ton on anthracite, June 1, has stimulated demand this week. The conservative buyers, who are satisfied that there will be an advance, are placing orders for immediate shipment for such quantities as they can readily take care of without extra expense for unloading and storing. Retail trade, owing to the cold, damp weather, has been unusually good, several of the larger dealers report their sales for April as being in excess of those for February, and they consider the outlook for the ensuing year's business as very promising. Apparently the public realize that the "rumored competition" that gave them all the benefit is a thing of the past.

In bituminous coal, the strikes, lay-offs and lockouts in Ohio, Indiana and Illinois of the past ten days have cleaned up all surplus coal, and this market is ready to receive its daily average shipment from all sources, and take care of them with more than the usual promptness at this season of the year. The effect of the recent combination in Indiana block coal can hardly be foretold at present; whether the largely advanced price demanded for this coal for the ensuing year will check the demand and drive consumers to other grades remains to be seen. The opening of many new mines in Indiana of strictly bituminous coal may interfere somewhat with the plans of the combine, and they may have to moderate their views before October. The Springfield district in Illinois has been offering a large amount of coal on track, Chicago, at 81.57½ for straight lump.

The shutting down of the Illinois Steel Mills, at Joliet, will also throw a large tonnage of cheap soft coal onto this market; as a consequence there will be no advance looked for in Illinois coal until there is a general resumption in the iron business. The block coal mines in Indiana are running about half to three-quarters time, as demand is only fair. In Ohio, the Hocking and Massillon miners have gone to work at last year's prices. At Jackson Hill, no agreement has yet been made, but the probabilities are satisfactory arrangements will be reached before these lines are perused by your readers.

Coke is in very moderate demand, but inquiry is better since the settlement of the molders' strike.

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

Circular prices are at the following rates: Lehigh lump, $6.00; 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. Chicago, are: Pittsburg, $3.35; Hocking Valley, $3.10; Youghiogheny, $3.25; Illinois block, $2.50; Brazil block, $2.50.

Pittsburg. May 11.

(From our Special Correspondent.)

Coal.—The miners in the pools are all at work; they decline to talk strike. There has been an excellent stage of water all week; as fast as a ton was landed it was sent down the Ohio to the Northern and Southern ports. There are sufficient empties in the pools to furnish work for some time. The shipments by river since May 1 were: To Cincinnati, 1,882,000 bushels; to Louisville, 3,920,000 bushels; to-

tal, 5,802.000 bushels. The Ohio River is declining rapidly, and unless we have rain the river will be too low for coaling purposes. The railroad miners decided not to strike and are all at work making good wages and are happy.

Connellsville Coke.—The coal trade outlook continues unsatisfactory and the demand light. The United Works, owned by H. C. Frick and the McClure coke companies, have shut down owing to a lack of orders, throwing several hundred men out of work; when they will resume is not known. The car supply is ample for all requirements, but the orders are lacking.

About one-third the total number of the ovens in this region are now idle, and it is probable that many more will be blown out within the next two weeks. There is considerable stock piled up in the yards for which there is no market.

Shipments for the week aggregated 123,500 tons, distributed in cars as follows: To Pittsburg, 1,600 cars; to points east of Pittsburg, 1,700; points west of Pittsburg, 3,200; total, 6,500. Western shipments increased 105 cars, eastern shipments 45 cars, while Pittsburg decreased 59 cars, making a net increase of 98 cars.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, May 12.

Heavy Chemicals.—Nothing has occurred during the week materially to alter the position of the various heavy chemicals as reported in our last issue. The market continues dull and without noteworthy features. Caustic soda is quiet. For carbonate soda ash there has been some inquiry for fall shipments. Alkali has been dull. Several sales are reported of bleaching powder and of sal soda. The domestic brands of the latter have been in fair request. There is little change in prices. 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 new to report of the acid market. There is perhaps not quite so great an activity as that which prevailed some weeks ago, but on the whole the acid market this year has been, is and probably will be, good. Manufacturers report a steady consumptive demand and a good business, but there is no shortness of supplies. 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.—The market for Sicilian brimstone is strengthening here. Cable advices from the other side to-day report a higher market there. Best unmixed seconds on the spot are quoted at $20.25 and shipments at $19. Thirds are 75c. less.

Fertilizing Chemicals.—The fertilizer market continues practically as last reported. It is dull, but quite firm and prices are being fairly maintained. There has been, however, a slight decline in the price of some of the ammoniates, probably not exceeding 50c. per ton. The usual hand-to-mouth spring trade is doing. Our quotations this week are as follows: Dried blood, $2.65@$2.70 per unit for high grade, and $2.55@$2.60 for low grade; azotine, $2.65; sulphate of ammonia on the spot, $3.20 for gas liquor. No bone liquor is offering. Acidulated fish scrap, no stocks on hand; dried scrap is quoted at $29 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 Savannah, $1.17 cwt., basis 48@50%, in 50 ton lots on foreign weights and analyses. Sulphate of potash, 90%-96%, basis, 90%; New York and Boston, $2.07; Philadelphia, $2.09½; Charleston and Savannah, $2.127, sulphate of potash, 96-99%, basis 90%, is 4% higher.

Phosphates.—Quotations for high grade land rock f. o. b. Charleston, are $4.50@$4.75. Freights are $1.25.

Mr. Paul C. Trenholm, the well known broker of Charleston, S. C., sends us the following statistics showing shipments of phosphate rock from that port for the month of April. 1891, 19,684 tons; 1892, 11,864 tons, and 1893, 8,921 tons.

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 arrivals during the week have increased stocks, and nitrate on the spot is offered at $2.15. Shipments are $1.82½. Arrivals are according to position.

Liverpool. May 3.

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

There is no improvement to note in the position of heavy chemicals, the demand being still of a disappointing and retail nature, but at the same time prices in most cases are well maintained.

Soda Ash.—Makers are busy in deliveries on old contracts, but there is little fresh business to report. The nominal spot values are as follows: Caustic ash, 48%, £4 17s. 6d.@£5 5s. per ton; 57-58%, £5 15s. per ton; cart ash, 48%, £5@£5 5s. per ton. 48%, £5 7s. 6d.@£5 15s. per ton, all net cash; ammonia ash, 58%, £4 15s.@£5 per ton, less 2½%.

Soda crystals are in moderate request and steady at £2 17s. 6d@£3 per ton, less 5%.

Caustic soda is receiving little attention from buyers and is very slow to move. Quotations vary considerably according to export market, viz.: 60%, £8 5s.@£9 per ton; 70%, £9 5s.@£10 per ton; 74%, £10 5s.@£11; 76%, £11 10s.@£12, all net cash. For parcels under 10 tons, 5s. per ton extra is charged.

Bleaching powder is in fair request and very steady at £8 10s.@£8 15s. per ton, net cash for hardwood packages.

Chlorate of potash is dull in spite of the late advance announced by the syndicate, who are now quoting 9d. per lb. for both May and June delivery. There are second-hand parcels offering for prompt and May delivery at 8¾d., and sellers quote 8½@8¾d. for June and for July; December 7¾d. per lb. Bicarb. soda is in good demand and makers are well sold for this month. Price is steady at £6 15s. per ton, less 2½% for one cwt. kegs, with the usual allowance for larger packages. Sulphate of ammonia, although very scarce on the spot, is without much life, and £12 7s. 6d.@£12 10s. per ton, less 2½%; for good gray 24%, in double bags, f. o. b. here, is about nearest value for prompt delivery, and is offered for May delivery at about 5% per ton less money.

Nitrade of soda is flat, and nearest spot value is about £10 5s.@£10 10s. per ton, less 2½% f. o. b. here, and lower figures quoted for the month.

Carb. Ammonia.—Lump, 3d. per lb.; powdered, 3¼d. per lb., net cash.

CURRENT PRICES.

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

Acid—Acetic, chem. pure.....17@.19
Commercial, in bbls. and cbys...01¾@.02
Carbonic, liquefied, ℔ lb.....18@.25
Chromic, 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.....08¼
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. i. 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....06@.10
Chlorate, crystal, ℔ lb.....75
Chloride, commercial, ℔ lb.....05@.10
pure, ℔ lb.....16
Iodide, ℔ oz.....40
Nitrate, ℔ lb.....06¼@.07
Sulph., Am. prime white, ℔ ton$17.50@$19
Sulph., foreign, floated, ℔ ton....$21@$24
Sulph., off color, ℔ ton....$11.50@$15.00
Carb., lump, f. o. b. L'pool, ℔ ton.....£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@.08¼
Concentrated, in car lots.....07¼@.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@.06
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
Chloride and sodium, ℔ oz.....$6.00
15 gr., c. v., ℔ doz. $2.75
Oxide, ℔ oz.....$27.25
Gypsum—Calcined, ℔ bbl... $1.25@$1.50
Land Plaster.....
Iodine—Resublimed, ℔ oz.....30@ 33
Iridium—Oxide ℔ 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.....65

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—Rochelle, ℔ lb.....01¼@01¾
Washed Nat Oxf'rd, Lump, ℔lb.06½@.06¾
Washed Nat Oxf'rd, Powder, ℔lb.07@.07½
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
Phosphorus—℔ 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
Chlorate, English, ℔ lb.....18@.18¼
Chlorate, powdered, English, ℔ lb. .18½@.19
Carbonate, ℔ lb., by casks, 82%.04½@.05
Caustic, ℔ lb., pure stick.....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.....39@.40
Pumice Stone—Select lumps, ℔ lb03½@.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@.03½
Lump, ℔ lb.....06@.07
Original cks, ℔ lb.....04½@.05½
Rubbing stone, ℔ lb.....03½@.04
Sal Ammoniac—lump, in bbls., ℔ lb.80¼
Salt—Liverpool, ground, ℔ sack.....700
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.....$6@$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.....01¼@.01¼
Flour, ℔ lb.....01¾@.02
Sylvinit, 27@35%, S. O. P., per unit. 4.3.7@⅛

Talc—Ground French, ℔ lb....01¼@.01½
American No. 1, ℔ lb.....01¾@.01¾
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@.50
Tin—Crystals, in kegs or bbls....14@.15
feathered or flossed. .2
Muriate, single.....07@.12
Double or strong, 54° B.....10@.15
Oxymur, or nitro.....19
Vermilion—Imp. English, ℔ lb. .80
Am. quicksilver, bulk.....57 @.59
Am. quicksilver, bags.....58 @.60
Chinese.....85 @$1.00
Trieste.....90 @ .95
American.....11½@ .12
Zinc White—Am., Dry, ℔ lb 04¼@ .05
Antwerp, Red Seal, ℔ lb.....06¼@.07
Paris, Red Seal, ℔ lb.....07½@.08
Muriate solution.....06
Sulphate 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 .50
Niobium—(Metallic), per gram... $5.00
Osmium—(Metallic), per oz.....$65.00
Palladium—(Metallic), per oz....$20.00
Platinum—(Plate), per oz.....$9.75
Potassium—(Metallic), per lb.....$8.00
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 gram.....65
Tantalium—(Metallic), per gram. $9.00
Telurium—(Metallic), per lb.....$5.00
Thallium—(Metallic), per gram..$2.00
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.....$6.00

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	May 6. H.	May 6. L.	May 8. H.	May 8. L.	May 9. H.	May 9. L.	May 10. H.	May 10. L.	May 11. H.	May 11. L.	May 12 H.	May 12 L.	SALES.
Adams, Colo.													
Alice, Mont.													
Amador, Cal.													
Atlantic, Mich.													
Belcher, Nev.													
Belle Isle, Nev.													
Bodie Cons., Cal.													
Bos. & Mont., Mont													
Breece, Colo.													
Bulwer, Cal.													
Caledonia, S. Dak.													
Catalpa, Colo.													
Chrysolite, Colo.													
Colorado Central, Colo.													
Commonwealth, Nev.													
Comstock T. bonds, Nev.													
" scrip., Nev.													
Cons. Cal. & Va., Nev.					2 50								100
Crown Point, Nev.													
Deadwood, Dak.													
Enterprise													
Eureka, Cons., Nev.													
Father de Smet, Dak.													
Freeland, Colo.													
Gould & Curry, Nev.	1.05				.85								220
Grand Prize, Nev.													
Hale & Norcross, Nev.					1.05								100
Homestake, Dak.													
Horn-Silver, Utah.							2.90						100
Independence, Nev.													
Iron Hill, Dak.													
Iron Silver, Colo.													
Leadville Cons., Colo.													
Little Chief, Colo.													
Martin White, Nev.													
Mono					.25								200
Mt. Diablo, Nev.													
Navajo, Nev.													
N. Belle Isle, Nev.													
Ontario, Utah.													
Ophir, Nev.	3 50				3 70								175
Overman, Nev.	.40												200
Plymouth, Cal.													
Quicksilver, Pref., Cal.													
" Com., Cal.													
Quincy, Mich.													
Robinson Cons., Colo.													
Savage, Nev.	1.40												100
Sierra Nevada, Nev.													
Silver Cord, Colo.													
Silver King, Ariz.													
Silver Min. of L. Valley													
Small Hopes, Colo.													
Standard Cons., Cal.							1.35						100
Yellow Jacket, Nev.													

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	May 6. H.	May 6. L.	May 8. H.	May 8. L.	May 9. H.	May 9. L.	May 10. H.	May 10. L.	May 11. H.	May 11. L.	May 12. H.	May 12. L.	SALES.
Alpha., Nev.													
Alta, Nev.													
American Flag, Colo.													
Andes, Cal.													
Astoria, Cal.													
Augusta, Ga.													
" bonds.													
Barcelona, Nev.													
Belmont, Cal.			.20										
Best & Belcher, Nev.	1.85												300
Bonanza King, Cal.													100
Brunswick, Cal.	.06												
Bullion, Nev.													700
Butte & Bost., Mont.													
Castle Creek, Idaho.													
Chollar													
Comstock T., Nev.	.10	.09	.09		.10								2,0 0
Con. Imperial, Nev.													
Con. Pacific, Cal.													
Cresceut, Colo.													
Del Monte, Nev.													
El Cristo, Rep. of Col.	.30												100
Emmett, Colo													
Exchequer, Nev.	.20												400
Independence, Nev.													
Julia, Nev.													
Justice, Nev													
Kentuck, Nev.													
Lacrosse, Colo.							.04						
Lee Basin, Colo.													500
Mexicau, Nev.	2 30												
Minnesota Iron													100
Monitor, Colo.													
Monte Cristo, N. S. of C.	3.15		3.15		3.15								400
Nevada Queeu, Nev.													
N. Staudard, Cal.													
N. Commonwealth, Nev.													
Occidental, Nev.													
Oriental & Miller, Nev.													
Phœuix Lead, Colo.													
Phœuix of Ariz.													
Potosi, Nev.								.14					500
Rappahanuock, Va.										2.80			100
S. Sebastian, S. Sal.													
Santiago													
Scorpion, Nev.													
Seg. Belcher, Nev.													
Shoshone, Idaho.													
Silver Hill, Nev.													
Sullivan Cou., Dak.													
Sutro Tunnel, Nev.													
Syudicate, Cal.													
Tornado Con., Nev.													
Union Cons., Nev.													
Utah, Nev.													

Ex-dividend. †Dealt at in New York Stock Ex. Unlisted securities. ‡Assessment paid. ‖Assessment unpaid. Dividend shares sold, 1,295 Non-dividend shares sold, 5,200. Total shares sold, 6,495.

BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	May 5.		May 6.		May 8.		May 9.		May 10.		May 11.		SALES.
Atlantic, Mich.			8.00		8.00		8 00		8.00				170
Bodie, Cal.													
Bonanza Developmeut.													
Bost. & Mont., Mout.	22.00	20.00	22.00	21.25	22.50	22.00	23.00	22.50	23 00	22.00	22.00		5,057
Breece, Colo.													
Calumet & Hecla, Mich.	286	285			290	286			290		290		119
Catalpa, Colo.													
Central, Mich.													
Cœur d'Alene, Id													
Con. Cal. & Va., Nev.													
Dunkin, Colo.													
Eureka, Nev.													
Franklin, Mich.	11.75	11.00	12.00	11.50	11.75		12 00	11.75	11.75		11 75	11.50	1,200
Honoriue, Utah.													
Horu Silver, Utah.													
Kearsarge, Mich.			7 25		7.38	7 25	7 50	7.00	7.00		7.00		420
Lake Superior, Iron.									26.50		26 00		135
Little Pittsburg, Colo.													
Minnesota Irou, Minn.													
Napa, Cal.													
Ontario, Utah.													
Osceola, Mich.	26.50	26.00	27 00		29 00	27.50	29.00	28.00	28.50	27 75	28 50	27.50	2,053
Quincy, Mich.							113		112¾	112			32
Ridge, Mich.													
Sierra Nevada, Nev.													
Silver Klug, Ariz.													
Stormont, Utah.													
Tamarack, Mich.	140	137			145	143	145		150	145	145		677
Tecumseh, Mich.													

NAME OF COMPANY.	May 5.		May 6.		May 8		May 9.		May 10.		May 11.		SALES.
Allouez, Mich.													
Arnold, Mich.													
Aztec, Mich.													
Brunswick, Cal.													
Butte & Boston, Mont.	7.00	6 25	7.13	6.75	7 63	7.50	7 63	7.38	7.50	7.25	7 25	7.10	5,855
Centennial, Mich.	6.75	6 25	7 25	7.00	7.50		8 00	7.50	7.50		7.00		2,570
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.											.50		400
Native, Mich.													
Oriental & M., Nev.													
Phœnix, Ariz.													
Pontiac, Mich.													
Rappahanuock, Va.													
Santa Fe, N. Mex.													
Shoshone, Idaho.											.65		300
South Side, Mich.													
Tamarack, Jr., Mich.	16.00												
Washington, Mich.													100
Wolverine, Mich.											2.25		300

Dividend shares sold, 19,853. Non-dividend shares sold, 9,425. Total shares sold, 29,278.

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	1w0,000	$10	*		$637 500	Jan. 1892 .05
2	Alaska-Treadwell, g. Al'ska	5,000,000	200,000	25	*		1,500,000	April 1893 .25
3	Alice, s. Mont.	10,000,000	400,000	25	*		975,000	Nov. 1891 .06¼
4	Alma & Nel Wood., g Idaho	300,000	30,000	10	*		60,000	Jan. 1889 .50
5	Amador, G. Cal.	1,250,000	250,000	5	*		31,250	Aug. 1890 .12½
6	American, G. Colo.	3,000,000	300,000	10	*		225,000	Mar. 1892 .05
7	American Belle, s. G. C Colo.	2,000,000	400,000	5	*		50,000	April 1891 .12½
8	Americ'n & Nettie, G. S Colo.		300.000				175,000	Mar. 1892 .05
9	Atlantic, C. Mich.	1,000,000	40,000	25	280,000	April 1875	700,000	Feb. 1891 1.00
10	Argeuta, 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	*		761,000	Sept. 1892 .10
13	Aurora, I. Mich.	2,500,000	100,000	25			650,000	Feb. 1893 2.00
14	Badger, s Ont.	250,000	50,000	5			37,500	Mar. 1890 .25
15	Bald Butte Mont	250,000	250,000	1	*		72,500	Mar. 1892 .03
16	Bates Hunter, s. g. Colo.	1,000,000	1,000,000	1				Dec. 1891 .03¼
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	Bostou & 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	30,000	Aug. 1889 .25	190,000	Oct. 1892 .05½
28	Bunker Hill & S. s. L. Idaho	3,000,000	300,000	10	*		150,000	Oct. 1888 .06
29	Caledouia, G. Dak.	10,000,000	100,000	100	505,000	May. 1885 .15	192,000	Oct. 1890 .08½
30	Calliope, s. Colo.	1,000,000	1,000,000				140,000	Jan. 1891 .00
31	Calumet & Hecla o Mich.	2,500,000	100,000	25	1,200,000		39,350,000	May. 1843 5 00
32	Centeu'l-Eureka, s. L. Utah.	1,500,000	30,000	50			615,000	April 1893 .75
33	Ceutral, C. Mich.	500,000	20,000	25	100,000	Oct. 1861 .65	1,970,300	Feb. 1891 1.00
34	Champiou, G Cali	340,000	34,000	10			124,500	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			80,000	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	1,589,550	Aug. 1892 .50	199,680	April 1889 1.00
42	Cons. Cal. & Va., s. G Nev.	21,600,000	216,000	100	108,000	Jan. 1885 .20	3,682,800	Aug. 1891 .50
43	Contention, s. Ariz.	12,500,000	250,000	50			2,637,500	Aug. 1892 .20
44	Cook's Peak, s. N. M.	2,000,000	200,000	10			114,532	Nov. 1892 .05
45	**Cop. Queen Con., C Ariz	2,000,000	20,000	10			1,360,000	Feb. 1892 .50
46	Coptis. Nev.	10,000,000	100,000	10			67,000	July. 1892 .12
47	Cortez, 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	Juue 1889 .05
53	Deadwood-Terra, G. Dak.	5,000,000	200,000	25	*		1.150,000	Oct. 1892 .06
54	Delaware s. G. Idaho	2,000,000	400,000	5			901,000	April 1893 .87½

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., G. 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, s. 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	Atlauta, 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	100,000	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. G. 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 .03
31	California Con. I. 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	2,062,50	Jan. 1892 .25
45	Con. New York, s. G. Nev.	5,000,000	100,000	100	110,000	Mar. 1892 .10
46	Con. Pacific, G. Cal.	6,000,000	60,000	10	198,000	June 1890 10
47	Con. Silver, s. Mo.	2,500,000	250,000	5		
48	Cordova Union, g Cal.	1,000,000	200,000	10		
49	Crescent, s. L. Colo.	3,000,000	300,000	100	*	
50	Crocker, s. Ariz.	10,000,000	100,000	1	165,000	Aug. 1892 .05
51	Crowell, G. N. C.	500,000	500,000	1		
52	Dahlonega, G. Ga.	250,000	250,000	10	*	
53	Dandy, s. Colo.	5,000,000	500,000			
54	Decatur s Colo.	1.500,000	300.000			

DIVIDEND-PAYING MINES.

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]	[illegible]	[illegible]	1	[illegible]	Sept.	1892	.1[illegible]	[illegible]	Aug..	[illegible]	[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	.05
60	Eureka Con., s. L.. G.	Nev...	1,000,000	50,000	100	550,000	June	1889	.50	5,017,500	Jan.	1892	.25
61	Evening Star, s. L.	Colo..	500,000	50,000	10	*				1,450,000	Dec.	1889	.2
62	Father de Smet, G.	Dak..	10,000,000	100,000	100	200,000	Nov..	1878	1.00	[illegible],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					2,120,000	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	.00¼
86	Idaho, G.	Cal...	310,000	3,100	100					5,4[illegible]0,250	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					708,900	April	1893	.25
102	Mammoth, s. L. C.	Utah	10,000,000	400,000	250	110,000		1882	.25	1,040,000	Dec..	1891	.10
103	Martin White, s.	Nev.	10,000,000	100,000	100	1,275,000	Jan..	1892	.25	140,000	Dec..	1886	.25
104	Mary Murphy, s. G..	Colo..	350,000	3,500	101	*				175,000	May..	1888	5.00
105	Matchless, s. L	Colo..	500,000	500,000	1	*				15,000	Feb..	1890	.00½
106	Maxfield	Utah.	3,000,000	300,000	10					117,000	April	1892	.03
107	Mayflower, D. gravel	Cal..	1,000,000	100,000	10					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	Moultor, 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					14[illegible],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 Commonw'th	Nev..	10,000,000	100,000	10					25,000	June.	1891	.25
126	N. Hoover Hill, G. s..	N. C.	300,000	120,000	2½	*				30,000	Dec..	1885	.06¼
127	North Belle Isle, s.	Nev..	10,000,000	100,000	100	474,689	Nov.	1892	.10	230,000	May.	1888	.50
128	North Star, G.	Cal..	1,000,000	100,000	10					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					2,669,926	April	1893	.19
139	Plymouth Con., G.	Cal..	5,000,000	100,000	50	*				2,280,000	Feb.	1888	.40
140	Poorman, G. s.	Idaho	375,000	300,000	125	*				68,260	Sept.	1892	
141	Quicksilver, pref., Q.	Cal...	4,300,000	43,000	100					1,823,911	June	1891	1.25
142	" com., Q	Cal...	5,700,000	57,000	100					643,867	July.	1882	.40
143	Quincy, C.	Mich..	1,250,000	50,000	25	200,000	Dec..	1862		6,470,000	Feb.	1893	3.00
144	Red Cloud	Idaho	1,000,000	200,000	5					153,000	Dec.	1892	.10
145	Reed National, s. G..	Colo.	500,000	500,000	1	*				50,000	Dec..	1890	.01
146	Retriever, L.	S.Dak	1,250,000	250,000	5					20,000	Aug..	1891	.03
147	Rialto, G.	Colo..	300,000	300,000	1	*				50,250	April	1892	.01½
148	Richmond, s. L.	Nev.	1,350,000	54,000	25	*				4,346,3[illegible]5	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 1-1[illegible]
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
163	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.	188[illegible]	.25	50,000	Jan..	1881	.25
165	Standard, G. s.	Cal...	10,000,000	100,000	100	100,000	June	[illegible]9	.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	Aug.	8[illegible]	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..	188[illegible]	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 FeatherCo., 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..	189[illegible]	.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	*			
110	Medora, G.	Dak..	250,000	250,000	1	585,000	Mar.	189[illegible]	.56
111	Merrimac Con., G. s.	Colo..	5,000,000	500,000	10				
112	Mexican, G. s.	Nev...	10,000,000	100,000	100	2,917,560	Oct..	1892	.50
113	Michigan, g s	Mich.	2,500,000	100,000	25	40,000	Mar.	1892	
114	Middle Bar, G.	Cal...	400,000	200,000	2	*			
115	Mike & Starr, s. C.	Colo..	1,000,000	200,000	5	*			
116	Milwaukee, s.	Mont.	500,000	500,000	1	*			
117	Miuah Cons	Mont.	1,250,000	250,000	5				
118	Modoc Chief, l s. g.	Idaho	1,000,000	200,000	5	5,000	Jan..	1892	.00½
119	Monitor, G.	Colo.	100,000	100,000	1	12,500	May.	1891	.0[illegible]
120	Montreal, G. s. L.	Utah.	750,000	150,000	5	4,500	Feb..	1892	.00½
121	Mountain Ledge, g.	Cal..	500,000	100,000	5				
122	Mount McClellan	Colo.	1,500,000	300,000	5				
123	Mutual Mg. & Sm.	W'sh.	100,000	100,000	1	*			
124	Native, C.	Mich..	1,000,000	40,000	25				
125	Neath, G.	Colo..	1,000,000	100,000	10				
126	Nelson	Cal..	50,000	10,000	5				
127	Nevada Queen, s.	Nev...	10,000,000	100,000	100	200,000	Oct..	188[illegible]	.25
128	New Germany, G.	N. S..	100,000	100,000	1	*			
129	New Gold Hill	N. C	1,750,000	350,000	5				
130	New Pittsburg, s. L..	Colo..	2,000,000	200,000	10	*			
131	New Queen Gold, s..	Colo..	800,000	160,000	5				
132	North Standard, G.	Cal...	10,000,000	100,000	100	20,000	Nov.		
133	Occidental Con., g.s		10,000,000	100,000	100	245,000	April	1892	.25
134	Oneida Chief, G.	Cal...	500,000	125,000	100	*			
135	Oriental & Miller, s.	Nev...	10,000,000	400,000	100				
136	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
137	Osceola, G.	Nev...	5,000,000	500,000	10	*			
138	Overman, G. s.	Nev...	11,520,000	115,200	100	4,001,840	May.	1892	.10
139	Park, s.	Utah.	2,000,000	200,000	10				
140	Parker, g.	N. C..	750,000	180,000					
141	Pay Rock, s.	Colo..	1,000,000	200,000	5				
142	Peer, s.	Ariz..	10,000,000	100,000	100	190,000	Feb..	1892	.10
143	Peerless, s.	Ariz.	10,000,000	100,000	100	405,000	Oct...	189[illegible]	.15
144	Pennsylva'a Cons., G	Cal...	5,150,000	515,000	10	36,050	Feb..	1892	.10
145	Phoenix, g.	Ariz..	500,000	500,000	1	*			
146	Phoenix Lead, s. L..	Colo..	100,000	100,000	1	*			
147	Pilgrim, G	Cal...	600,000	300,000	2	*			
148	**Pioche M.&R., s.G.L.	Utah.	20,000,000	2,000,000	10				
149	Poorman, Ltd., s. L..	Idaho	250,000	50,000	5				
150	Potosi, s.	Nev...	11,200,000	112,000	100	1,573,000	Mar..	189[illegible]	.50
151	Proustite, s.	Idaho	250,000	250,000	1	*			
152	Puritan, s. G.	Colo..	1,500,000	150,000	10	*			
153	Quincy, C.	Colo..	3,000,000	300,000	10				
154	Rainbow, g.	S.Dak	1,250,000	250,000	5	4,250	July.	1892	.00½
155	Rappahannock, G. s.	[illegible]	250,000	250,000	1	*			
156	Red Elephant, s.	Colo..	500,000	500,000	1	*			
157	Red Mountain, s.	Colo..	300,000	60,000	5				
158	Ropes, G. s.	Mich..	2,000,000	80,000	25	167,200	Feb.	189[illegible]	.50
159	Ruby & Dun., s. L. G.	Nev..	25,300	506	50				
160	Russell, G.	N. C..	1,500,000	300,000	5				
161	Sampson, G. s. L.	Utah.	10,000,000	100,000	100	288,15[illegible]	July	188[illegible]	1.08
162	Seal of Nevada, g.s.	Nev..	5,000,000	100,000	50				
163	Silver Age, s l. g.	Colo..	2,000,000	200,000	10	*			
164	Silver Bell, s	Ariz..	850,000	170,000	5				
165	Silver King, s.	Cal.	2,000,000	400,000	5				
166	Silver Queen, C.	Ariz..	5,000,000	200,000	25	*			
167	Silverton, s.	Colo..	300,000	60,000	5				
168	Siskiyou Con., L.	Cal...	2,000,000	200,000	10	13,000	May..	1892	.01½
169	South Bulwer, G	Cal.	10,000,000	100,000	100	100,000	May.	1881	.25
170	South Hite, g.	Cal..	10,000,000	100,000	100	195,000	Jan..	188[illegible]	.05
171	South Pacific, g.	Cal..	500,[illegible]	100,000	5				
172	Stanislaus, G.	Cal..	2,000,000	200,000	10				
173	St. Kevin, s. G.	Colo.	100,000	100,000	1	*			
174	St. Louis & Mex., s.	Mex..	[illegible],000,000	500,000	10	*			
175	St. Louis & St. Elmo.	Colo..	[illegible]	200,000	10				
176	St. L. & St. Felipe, G.s.	Mex..	[illegible]	150,000	10				
177	St. L. & Sonora, G. s.	Ariz..	3,000,000	300,000	10	*			
178	Stemwinder, l. s.	Idaho	500,000	500,000	1				
179	Sunday Lake, I.	Mich..	1,250,000	50,000	25				
180	Sullivan Con., G.	Dak..	600,000	200,000	3	*			
181	Sylvanite, s.	Colo..	5,000,000	500,000	10	*			
182	Taylor-Plumas, G.	Cal...	325,000	65,000	5	3,575	Mar..	1892	.01½
183	Telegraph, g. s.	Cal...	325,000	65,000	5	3,575	Mar.	1892	.01½
184	Telegraph, G. s.	Mex..	100,000	100,000	1	70,000	Feb..	1892	.10
185	Teresa, G. s	Cal...	1,000,000	200,000	5	10,000	Feb..	1888	.10
186	Tioga Con., G.	Nev...	10,000,000	100,000	10	295,000	May.	1888	.25
187	Tornado Con., G. s.	Nev...	100,000	100,000	1	*			
188	Tuscarora, s.	Nev...	10,000,000	500,000	20	385,000	Jan..	1892	.25
189	Union Con., G. s.	Nev...	10,000,000	100,000	100	370,000	June	1892	.25
190	Utah, s.	Nev..	10,000,000	100,000	100	245,000	Aug.	1890	.25
191	Ute & Ulay, s. L.	Colo..	1,000,000	500,000	2	1,50[illegible]	Mar.	1892	.0018
192	Valley, g	Cal..	575,000	460,000	125				
193	Wall Street, G. s. L.	Colo..	500,000	500,000	1				
194	Washington, C.	Mich..	1,000,000	40,000	5				
195	West Argentine, s.	Colo..	750,000	150,000	5				
196	West Granite Mt., s..	Mont.	500,000	100,000	5	*			
197	Whale, s.	Mont.	5,000,000	500,000	10	*			
198	Wood River, g.	Idaho	2,000,000	200,000	10	3,000	Aug.	1891	.00½
199	Yuma, C. s. G.	Ariz..	10,000,000	400,000	2				
200	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.	May 6.		May 8.		May 9.		May 10.		May 11.		May 12		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am Coal	.....	.....	80½	.....	80	.....	80	79⅜	.....	.....	79⅛	.....	1,257
Balt. & Ohio	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do pref	.....	.....	.....	.....	.....	.....	32	.....	.....	.....	81	.....	401
Buff., R., P.	32	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambria Iron	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ches. & Ohio	20¾	20¼	21⅜	20¾	21¼	20⅜	20⅜	20	20⅜	19¾	20¾	20	12,841
do. 1st pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do 2d pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col. C. & I	.....	.....	.....	.....	16	.....	15⅜	.....	15	14	14	.....	1,320
Col. Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado Fuel	.....	.....	49⅛	49	47	45	46⅜	45	45⅜	45⅛	45	43	2,980
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col., H. V. & Tol.	24¼	23	24⅛	24	24⅛	23⅛	23⅛	22⅞	22½	21⅞	23	22	5,105
do. pfd	65⅛	.....	.....	.....	.....	.....	66	.....	.....	.....	.....	.....	135
Col. & H. Coal	9	.....	10	8¾	10¼	10	9¼	8	9	8⅝	9¼	8¾	3,915
do. pfd	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cons. Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & Hud. C.	124	123⅛	125	123⅛	125	124¾	124¾	124¼	122¼	120	123¾	122½	9,943
Del., L. & West.	141¾	140⅝	141¾	139	141	139½	139½	135¼	138⅛	135¼	138½	137	57,180
Hunt. & B. Top.	.....	.....	36⅝	36	35⅝	36¼	.....	.....	35½	35	.....	.....	680
do. pref	.....	.....	.....	.....	51⅝	.....	.....	.....	51	.....	.....	.....	174
Lake Erie & Wes	19	18¼	18¾	.....	19	18¾	18	17⅝	18	17½	18½	18	2,925
do. pref	72½	71¾	71¾	70¾	72¼	71¼	70½	70	70½	70	70	.....	3,109
Lehigh C. & N.	5 ⅝	51¼	51¼	51¼	51⅛	51¼	51⅛	.....	51¼	51	.....	.....	644
Lehigh Valley	48¼	48¼	48¼	48	48	47⅞	47⅞	47¼	47¼	47	.....	.....	3,482
Mahoning Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do. pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris & Essex	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Cent. Coal	.....	.....	.....	.....	8½	.....	.....	.....	.....	.....	.....	.....	100
N. J. Central	112⅛	110	111	111	114	112	110¾	108	109	107	109⅛	109	7,104
N. Y., L. & W	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Y., L. E. & W	19⅞	19⅝	20¼	19⅝	19⅝	19⅛	19⅝	18⅜	19	18⅝	19⅜	19¼	29,660
do. pref	.....	.....	40	39	40	39	39¾	38	38½	.....	39	.....	2,270
N. Y., Susq. & W	15½	14¾	15¾	14¾	14¾	14⅛	14¾	14⅛	14⅝	14¼	14⅛	.....	3,280
do. pref	60	58	60	58½	60	.....	.....	.....	58	57½	.....	.....	2,245
N. & West	6¾	.....	8¼	.....	7	.....	.....	.....	.....	.....	.....	.....	255
do. pref	29¾	.....	.....	.....	30	29½	.....	.....	28½	.....	.....	.....	410
Penn. R. R	51⅞	51¾	52	51¾	51⅞	51⅝	51⅝	51⅜	51½	51⅜	.....	.....	6,530
Phil. & Reading	25⅝	24⅜	25	24⅜	24¾	24⅛	24¾	22⅜	23¾	22⅜	24¼	23⅝	94,430
Penn. C. & I	20	19	20	18⅝	19	18⅝	19	18	19¾	19¼	.....	.....	3,045
do. pref	.....	.....	76	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Wheel. & L. E	13¼	.....	13¾	.....	13⅝	.....	14¾	13	13	12	.....	.....	1,050
do. pref	51⅛	46⅛	54⅝	53¾	55⅜	53	54⅛	48⅝	49¾	.....	.....	.....	1,198

Total shares sold, 258,470

INDUSTRIAL AND TRUST STOCKS.

NAME OF STOCKS.	May 6.		May 8.		May 9.		May 10.		May 11.		May 12.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Adams Express	.....	.....	.....	.....	154	152½	.....	.....	150	.....	.....	.....	80
Am. Cotton Oil	40¼	38½	40	38⅝	39⅛	33½	35⅝	34½	35¼	33¼	35¾	35	26,725
do. pref	75⅜	74	76½	75¾	74½	74	73	72	72	71½	72¼	73	3,457
Am. Dist. Tel	55	.....	.....	.....	.....	53	.....	.....	53¾	53	.....	.....	720
Am. Express	117¾	.....	.....	.....	114	.....	.....	.....	116½	.....	.....	.....	50
Am. Sugar Ref	81¾	77¼	90¾	79⅝	91	85¼	89⅜	83¾	85¾	82	86¼	84½	226,808
do. pref	85¾	81¾	87¾	81½	89⅝	87½	87	84¾	85½	84	86	85	18,405
Edison E. Ill. Co.	117	114	116¾	114½	115½	.....	114	.....	.....	.....	.....	.....	1,552
Edison Gen. El.	83	78⅜	81¾	74	80	75¾	75¾	70	76	71½	75	73¼	78,646
Nat. Cord. Co.	21½	19	20	16¼	16½	12¼	13½	12¼	13¾	12	12½	11½	61,851
do. pref	60	.....	70	59	59	47½	45	40	42½	40	42	40	5,612
do. New	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nat. Lead Co	34	32	34	32½	32½	32¼	32¼	31⅝	32	30¾	31¾	31¼	13,631
do. pref	75	73½	77	72¾	75	74½	73½	72½	73	71	72½	71¾	6,186
Nat. Linseed Oil	27½	.....	30	28	.....	.....	.....	.....	28	.....	27½	.....	600
So. Cotton Oil	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
U. S. Express	.....	.....	.....	.....	.....	.....	.....	.....	56	.....	.....	.....	5
U. S. Rubber	45½	45	47½	45	45¾	40¾	40¾	35	38½	33	42	39½	7,730
do. pref	87	85½	86	.....	86¾	86	79	69	.....	.....	.....	.....	2,23
Wells, Fargo Ex	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Western Union	85¾	84	87	84½	86¾	84⅞	85	83	84	81¾	84¼	82¾	84,751

Total sales, 740,92.

CALIFORNIA.

San Francisco.

NAMES OF STOCKS.	CLOSING QUOTATIONS.					
	May 5	May 6	May 8.	May 9.	May 10.	May 11.
Alpha	.....	.....	.....	.....	.....	.....
Alta	.....	.....	.10	.10	.....	.....
Belcher	.....	.....	1.30	1.30	1.30	.....
Belle Isle	.15	.....	.....	.....	.....	.....
B. & Belch	1.70	.....	1.50	1.10	1.45	.....
Bodle	.40	.....	.30	.25	.25	.....
Bulwer	.25	.....	.....	.....	.15	.....
Challar	1.20	.....	1.10	1.10	1.25	.....
Com'w'lth	.....	.....	.....	.....	.....	.....
Con. C. & V.	2.85	.....	2.30	2.40	2.40	.....
Con. Pac.	.....	.....	.....	.....	.....	.....
Crown Pt.	.....	.....	.85	.85	.85	.....
Del Monte	.....	.....	.....	.....	.....	.....
E'rekaCon	1.50	.....	.....	.....	.....	.....
G'ld & C'y	.90	.....	.....	.80	.80	.....
Hale & N.	1.15	.....	.95	1.00	.95	.....
M. White	.....	.....	.....	.....	.....	.....
Mexican	2.05	.....	1.70	1.70	1.65	.....
Mono	.20	.....	.15	.15	.....	.....
Mt. Diablo	.....	.....	.....	.....	.....	.....
Navajo	.10	.....	.....	.....	.10	.....
Nev. Qu'n.	.....	.....	.10	.....	.10	.....
N. B'lleIsle	.45	.....	.....	.....	.....	.....
N. Co'w'th	.....	.....	.....	.....	.....	.....
Ophir	3.10	.....	2.60	2.35	2.35	.....
Potosi	.....	.....	2.60	2.65	2.85	.....
Savage	1.25	.....	1.00	1.00	1.05	.....
Sierra Nev	1.50	.....	1.35	1.35	1.30	.....
Unl'n Con	1.35	.....	1.20	1.15	1.20	.....
Utah	.....	.....	.20	.20	.20	.....
Yel. Jack	1.00	....	1.00	1.05	1.00	.....

COLORADO.

Aspen. May 6.

	Bid.	Asked
Argentum Junlata	$0.72	$0.75
Aspen Contact	1.15	1.25
Aspen Deep Mining	.10¼	.11
Best Friend	.08	.10
Bi-Metallic	.10	.12
Bushwacker	.15	.16
Delia S.	2.00	2.25
Gold Valley Placer	.15	.16
Little Annie	.08	.09
Mollie Gibson	7.50	7.60
Pontiac	.09	.10
Smuggler	30 00	35.00
St. Joe & Mineral Farm	.12	.13
U. S. Paymaster	.20	.20

Colorado Springs. May 6.

	Bid.	Asked.
Anaconda Gold	.42½	.44½
Calumet	.06	.....
Cleopatra	.12½	.13¼
Fanny Rawlins	.30	.31
Gold & Globe	...	.09
Gold King	.	.10¼
Isabella	.24	.25½
Jack Pot	.01½	.02
Jeff Davis	...	.01½
Lemhi	...	1.25
Matoa	...	.05
Ophir	.08¼	.09½
Orphan Bell	.	.05
Pharmacist	.25	.25½
Summit M. & M	...	.21
Work	...	.06½
World	.05¾	.06

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	.04¼	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	.02¼	.01½	5,400
Free Coinage	.04½	.04½	500
Get syburg	.03½	.03½	300
Ironclad	.04	.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. May 6.

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 11.

COMPANY.	Bid.	Asked.
Balt. & N. C	....	...
Conrad Hill	....	...
Cons. Coal	....	...
Diamond Tunnel	....	.15
George's Creek Coal.	1.05	....
Howard C. & C.	1.10	....
Lake Chrome	....	...
Silver Valley	....	.65@.75

MINNESOTA.

Duluth. May 5.

LISTED STOCKS.	Par.	Bid.	Asked
Biwabik M. Iron Co	100	23.00	25.00
Cincinnati Iron Co	25	.75	.90
Clark Iron Co	100	.50	.60
Cosmopolitan Iron Co	...	.15	....
Great Northern Min. Co	100	6 00	7.25
Kanawha Iron Co	100	1.20	1.22
Keystone Iron Co	...	..	.60
Lake Superior Iron Co	25	2.50	3.05
Lincoln Iron Co	.	.15	.45
Little Mesaba Iron Co	100	2.00	4.10
Mesaba Moun. Iron Co.	100	14.50	16 00
Minneapolis Iron Co	100	.15	.25
Mountain Iron Co	100	50.00	75.00
Shaw Iron Co	100	2.50	3.05
Security Land & Exp. Co.	10	22.00	35.00
Washington Iron Co	100	.10	.75
UNLISTED STOCKS.			
Adams Iron Co	..	5.00	11.00
Allegheny Iron Co	10	.12½	....
Aurora Iron Co	..	1.00	1.25
Buckeye Iron Co	100	2.00	2.50
Camden Iron Co	..	....	.25
Chandler Iron Co	..	....	50.00
Chicago Iron Co	100	....	1.00
Charlestoa Iron Co	100	1.00	1.25
Champion Iron Co	100	.25	.50
Cleveland Iron Co	..	.04	.06
Columbia Iron Co	100	....	1.00
Commodore Mining Co	..	....	2.00
Comstock Iron Co	100	.20	1.00
Dayton Iron Co	100	.15	....
Detroit Iron Co	25	.02	.07
Elmira Land & Iron Co	...	.20	.25
Great Western Mining Co.	100	3.25	4.00
Hall Iron Co	..	....	.50
Homestead Iron Co	25	.05	.07½
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	1.45	1.75
Macomber Mining Co	..	....	.50
McCaskill Mining Co	..	.05	.07
McKinley Iron Co	100	....	23.50
Mesaba Chief Iron Co	100	5.50	6.00
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	.50
Pioneer	..	....	1.00
Putnam	..	....	.80
Rouchleau Iron Co	100	.50	.80
Republic Iron Co	25	.40	.70
Red Hematite Iron Co	100	....	.15
Standard Ore Co	25	.60	1.00
Stowell Iron Co	...	.01	.05
Towanda Iron Co	100	1.75	2.25
Ver. & Mesaba Iron Co	..	1.00	....
Zenith Iron Co	25	1.50	1.95

MISSOURI.

St. Louis. May 10.

Closing quotations:

	Bid.	Asked.
Adams	.80	.90
American & Nettie, Colo	.37½	.42½
Bi-Metallic, Mont	....	5.50
Elizabeth, Mont	.42½	.48½
Granite Mountain, Mont	4.50	4.60
Hope	3.40	4.00
Leo	.05	....
Pat Murphy	....	....
Small Hopes	....	.85

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	.45½	.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 10.

	Bid.	Asked.
Bridgewater Gas Co	....	....
Cartiers Val. Gas	9.00	....
Enterprise Mining Co	....	2.00
Hidalgo Mining Co	....	....
La Noria Mining Co	....	....
Luster Mining Co	....	9.00
Manufacturers' Gas	....	30.00
N. Y. & Clev. G. C	50.00	52
Pennsylvania Gas	9.00	9½
People's N. G. & P. Co.	15.00	15¾
Philadelphia Co.	19⅞	20¼
South Side Gas	....	....
Tuna Oil	....	....
Wheeling Gas Co	20 00	22½
W'house Air Brake Co	133½	136.00

SOUTH DAKOTA.

Deadwood. Mar. 2.

	Bid.	Asked.
Deadwood Terra	$1 50	$1.75
Double Standard	.22	.25
Golden Reward	1.40	1.50
Hawkeye	.62	.65
Iron Hill	.12½	.15
Isadora	.25	.30
Mutual	.01¼	.01¼
Ruby Bell	.22	.25¾
Scg. 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 29.

	Highest.	Lowest.
Alaska Treadwell	£2 2s.6d.	£1 17s.6d.
Amador, Cal	6d.	3d.
American Belle, Colo	3s.	2s. 6d.
Can. Phosphate, Can	£¾	£¼
Colorado, Colo	£1 5-16	£1 3-16
De Lamar, Idaho	£1 3s. 9d.	£1 2s. 6d.
Dickens Custer, Idaho	6d.	3d.
Eagle Hawk	1s. 9d.	1s. 3d.
Eberhardt, Nev	6d.	3d.
Elkhorn, Mont	£1 3s.	£1 2s.
Emma, Utah	1s. 3d.	1s.
Esmeralda, Nev	....	....
Flagstaff, Utah	10½s.	7½s.
Golden Leaf, Mont	1s.	9d.
Jay Hawk, Mont	9s. 6d.	9s.
La Luz, Mex	1s.	9d.
La Plata, Colo	1s.	9d.
Maid of Erin, Colo	10s.	7s. 6d.
Mammoth Gold, Ariz.	1s. 6d.	....
Montana, Mont	2s. 3d.	2s.
Mount McClellan	4s.	3s.
New Consolidated	....	....
New Guston, Colo	9s.	8s.
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	£⅝
Poorman, Idaho	8s. 9d.	8s. 3d.
Richmond Con., Nev.	10s.	7s. 6d.
Ruby, Nev	6d.	3d.
Sierra Buttes, Cal	8s.	6s.
" Plumas Eur., Cal.	12s.	10s.
Silver King	....	....
United Mexican, Mex.	3s.	2s.
Yankee Girl, Colo	2s. 3d.	1s. 9d.

Paris. April 27.

	Francs.
Belmez, Spain	129.00
Golden River, Cal	130.00
" " parts	30.00
Laurium, Greece	635.00
Lexington, Mont	83.75
" " parts	2.00
Nickel, New Caledonia	772.50
Rio Tinto, Spain	393.75
" " oblig	517.00
" " " 2d	512.50
Tharsis, Spain	128.75
Vieille-Montagne, Belgium	510.00

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	.05
Con. Wyoming	....	May 15	.....	.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
Navajo	25	April 24	May 22	.10
No. Belle Isle, Nev	23	May 23	June 21	.10
Overman, Nev	67	June 2	June 23	.20
Pine Hill, Cal	2	April 27	May 24	.03
Siskiyou Con., Cal	....	June 1	.....	.01½
So. Eureka, Cal	3	May 10	June 5	.01
St. John Con., Cal	....	May 13	.....	.05
Utah Con., Nev	17	April 26	May 15	.10
Yellow Jacket	54	April 19	May 19	.25